



UNIVERSITI PUTRA MALAYSIA

FACTORS INFLUENCING CUSTOMER SATISFACTION WITH ONLINE FOOD DELIVERY AMONG UNDERGRADUATE STUDENTS IN UPM

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UNIVERSITI PUTRA MALAYSIA

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A project submitted as a partial fulfillment of the requirement for the degree of
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Sciences, Universiti Putra Malaysia

SUPERVISOR'S SIGNATURE

This project is titled “Factors Influencing Customer Satisfaction with Online Food Delivery among Undergraduate Students in UPM.” was prepared by Muhammad Hilman Syamim bin Harun and submitted to the Faculty of Medicine and Health Sciences as partial fulfillment of the requirement for the degree of Bachelor of Science in Dietetics with Honors from the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia.

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ABSTRACT

FACTORS INFLUENCING CUSTOMER SATISFACTION WITH ONLINE FOOD DELIVERY AMONG UNDERGRADUATE STUDENTS IN UPM

MUHAMMAD HILMAN SYAMIM BIN HARUN

Online food delivery has been enormous in Malaysia for several years. However, many complaints and reports have been made on the service provided by these online food delivery companies which affects customer satisfaction. There are limited studies on factors influencing customer satisfaction with online food delivery especially among undergraduate students. Hence, the objectives of this study were to determine factors associated with customer satisfaction with online food delivery among undergraduate students in Universiti Putra Malaysia (UPM) Serdang. A cross-sectional study was conducted among 101 students from Universiti Putra Malaysia (UPM) Serdang. The questionnaire includes sociodemographic information, anthropometric measurements, online food delivery (OFD) items, and customer satisfaction questionnaire. The mean score of customer satisfaction with online food delivery is 5.876 ± 0.989 . Information quality, price-saving orientation, time-saving orientation and effort expectancy has a positive significant association with customer satisfaction with OFD among undergraduates in UPM with significant value of 0.649, 0.604, 0.558 and 0.585 respectively. Information quality, price-saving orientation, time-saving orientation and effort expectancy has a positive significant association with customer satisfaction with OFD among undergraduates in UPM. Nutritional knowledge has no significant association with customer satisfaction with OFD among undergraduates in UPM. In conclusion, average undergraduates from UPM were satisfied with the online food delivery available in UPM. The online food delivery also achieved moderate customer satisfaction among university students and has more room for improvement.

ABSTRAK

FAKTOR-FAKTOR YANG MEMPENGARUHI KEPUASAN PELANGGAN TERHADAP PENGHANTARAN MAKANAN DALAM TALIAN DI KALANGAN PELAJAR SARJANA MUDA DI UPM

MUHAMMAD HILMAN SYAMIM BIN HARUN

Penghantaran makanan dalam talian telah menjadi sangat besar di Malaysia selama beberapa tahun. Bagaimanapun, banyak aduan dan laporan telah dibuat mengenai perkhidmatan yang disediakan oleh syarikat penghantaran makanan dalam talian ini yang menjejaskan kepuasan pelanggan. Terdapat kajian terhad tentang faktor yang mempengaruhi kepuasan pelanggan terhadap penghantaran makanan dalam talian terutamanya dalam kalangan pelajar sarjana muda. Justeru itu, objektif kajian ini adalah untuk menentukan faktor-faktor yang dikaitkan dengan kepuasan pelanggan terhadap penghantaran makanan dalam talian dalam kalangan pelajar sarjana muda di Universiti Putra Malaysia (UPM) Serdang. Kajian keratan rentas telah dijalankan dalam kalangan 101 pelajar Universiti Putra Malaysia (UPM) Serdang. Soal selidik termasuk maklumat sosiodemografi, ukuran antropometrik, item penghantaran makanan dalam talian (OFD), dan soal selidik kepuasan pelanggan. Skor min kepuasan pelanggan terhadap penghantaran makanan dalam talian ialah 5.876 ± 0.989 . Kualiti maklumat, orientasi penjimatan harga, orientasi penjimatan masa dan jangkaan usaha mempunyai perkaitan signifikan yang positif dengan kepuasan pelanggan terhadap OFD dalam kalangan mahasiswa di UPM dengan nilai signifikan masing-masing 0.649, 0.604, 0.558 dan 0.585. Kualiti maklumat, orientasi penjimatan harga, orientasi penjimatan masa dan jangkaan usaha mempunyai perkaitan signifikan yang positif dengan kepuasan pelanggan terhadap OFD dalam kalangan mahasiswa di UPM. Pengetahuan pemakanan tidak mempunyai perkaitan yang signifikan dengan kepuasan pelanggan terhadap OFD dalam kalangan mahasiswa di UPM. Kesimpulannya, rata-rata pelajar UPM berpuas hati dengan penghantaran makanan dalam talian yang terdapat di UPM. Penghantaran makanan dalam talian juga mencapai kepuasan

pelanggan yang sederhana dalam kalangan pelajar universiti dan mempunyai lebih banyak ruang untuk penambahbaikan.



CHAPTER 1

INTRODUCTION

1.1 Study Background

In this modern era, many transactions are being done online with the use of the Internet. Food delivery is also included in using this mode of transaction. Food used to be eaten at restaurants with dining areas, however nowadays it can be consumed by having foods delivered to a specified location. Online food delivery has been enormous in Malaysia for several years. In Malaysia, the revenue from online food delivery is expected to be at RM1.4b in 2022 with the users increasing to 12.1 million users in 2025 (Statista, 2021). Online food delivery has currently been the new trend in the Food and Beverages (F&B) industry. This is facilitated by the increment of access to mobile phones to 98.2% (Department of Statistics Malaysia, 2021). This increment also affects positively on the use of online food delivery by Malaysians.

There are several companies with their own online food delivery applications that can be observed in Malaysia. The two most used platforms for online food delivery in Malaysia are GrabFood and Foodpanda and followed by ShopeeFood, Airasiafood, Easi, , Bungkusit, DeliverEat, Lolol, Tapau and few others (Yellowbees, 2021). Even with these numerous competitors, those platforms may benefit from having their own coverage in the nation. Some of these brands operate at nationwide level such as GrabFood and FoodPanda while some others

established at state level or specific regions such as ShopeeFood in Klang Valley and Tapau in the Northern region of Malaysia.

Another main factor that causes online food delivery to have massive growth in the last two years is because of the pandemic caused by the coronavirus disease (COVID-19). The first case of COVID-19 was recorded in Wuhan in the Hubei province of China (Ibrahim et. al., 2020). Not only the health sector is in the biggest crisis, the global economy, supply lines, and countries worldwide have been affected (HLPE, 2020). The unexpected interruption has crippled the global food supply system and service industry, with major cities in China and India shutting down for several months (Memon et. al., 2021). The situation is similar in Malaysia with more than 37,000 businesses being forced to close due to COVID-19 (Bernama, 2021). The Malaysian Government under the Prevention and Control of Infectious Diseases Act 1988 and the Police Act 1967 enforced Movement Control Order (MCO) on March 18, 2020 to combat the virus outbreak from being widespread in Malaysia (Shah et. al., 2020). During MCO, dining is not allowed at restaurants and only takeaway and contactless deliveries are allowed. Other than that, the eateries and restaurants have to reduce their operating hours as part of the MCO (Buyan, 2020). Despite the fact that the online food delivery market had developed substantially before to the pandemic, more consumers used online food delivery services during the COVID-19 pandemic, according to a survey by the NPD Group, which found that the number of online food

delivery orders increased by 67 percent in March 2020 compared to March 2019 (NPD, 2020).

1.2 Problem Statement

At international level, the online food delivery services market is predicted to have a 10.3 % increase at a compound annual growth rate (CAGR) from \$115.07 billion in 2020 to \$126.91 billion in 2021 (The Business Research Company, 2021). This huge growth is contributed by companies that are happening to recover from the COVID-19 impact, resuming operations and adapting to the new normal, which had previously resulted in restrictive containment measures such as social distancing, remote working, and the closure of commercial activities, all of which created operational challenges.

In Malaysia, several reports and complaints have been made towards the online food delivery services such as Grab Food and Foodpanda. Some of the reports consist of the long time for the delivery to be completed and also limited numbers of riders available which makes food being unavailable to be delivered (Zahiid, 2021). Some of the online food delivery platforms also increased their fee which makes vendors feel more difficulty in providing the takeaway foods (Selan, 2021).

University students are also the consistent users of OFD as those who live in the college are unable to access the kitchen. There are cafeterias located in the campus for students to dine in; however, they still search for outside food on campus to fulfil their appetite and cravings.

Therefore OFDs are used by students who also do not have access to a vehicle to dine or just simply want food to be delivered at their own place. Food preparation skill is also non customary to students with low food security and this further leads to deficient confidence in food preparation (Knol et. al. 2019).

Customer service must always be improved in order to attain new customers and gain their regular customer's loyalty (Perera & Sachitra, 2019). Customer satisfaction is an evaluation that assesses how effectively a company's products or services fulfil the needs of its customers. Customer satisfaction must be maintained at the highest level possible as there are many competitors in the same market. Kuo et. al. (2010) found that providing a high customer satisfaction will result in new customers and revenue. Hence, customer satisfaction is important to be measured to improve the online food deliveries' revenue and reputation.

Research questions:

1. What are the factors that affect customer satisfaction with online food delivery among undergraduate students in UPM?
2. Do customers keep using online food delivery even though having poor satisfaction with the online food delivery services?

1.3 Significance of Study

This study aims to determine customer satisfaction with online food delivery among undergraduate's students in UPM. Due to limited studies, this study could fill a space in existing studies. This study can also contribute to the body of knowledge on the factors that may influence the customer satisfaction with online food delivery. The results of this study can be used by other researchers when conducting future research related to online food delivery. As students who are also consumers, they can become more decisive when choosing the best online food delivery by comparing the online food delivery factors that are shown by the available companies at their own place.

In addition, this study can help online food delivery companies to know the factors that can influence the customer satisfaction with online food delivery. By identifying these factors, the online food delivery companies can develop plans and strategies to improve the online food delivery system. Factors that can be improved by the online food delivery companies are information quality, price-saving orientation, time-saving orientation, effort expectancy. Companies should upgrade their service based on the factors they lacked to aim for higher level of customer satisfaction

1.4 Objectives

1.4.1 General Objective:

To determine factors associated with customer satisfaction with online food delivery among undergraduate students in UPM.

1.4.2 Specific objectives:

1. To determine sociodemographic factors (age, ethnicity, gender, marital status, monthly income/ allowance, field of study, year of study), body weight status (weight, height, BMI), online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort expectancy), nutritional knowledge among undergraduate students in UPM.
2. To determine customer satisfaction with online food delivery (OFD) among undergraduate students in UPM.
3. To assess association between sociodemographic factors (age, ethnicity, gender, marital status, monthly income/ allowance, field of study, year of study), body weight status (weight, height, BMI), online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort expectancy), nutritional knowledge with customer satisfaction with online food delivery among undergraduate students in UPM.

1.5 Hypothesis

There is a significant association between sociodemographic factors (age, ethnicity, gender, marital status, monthly income/ allowance, field of study, year of study), body weight status (weight, height, BMI), online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort expectancy), nutritional knowledge with customer satisfaction with online food delivery among undergraduate students in UPM.

1.6 Conceptual Framework

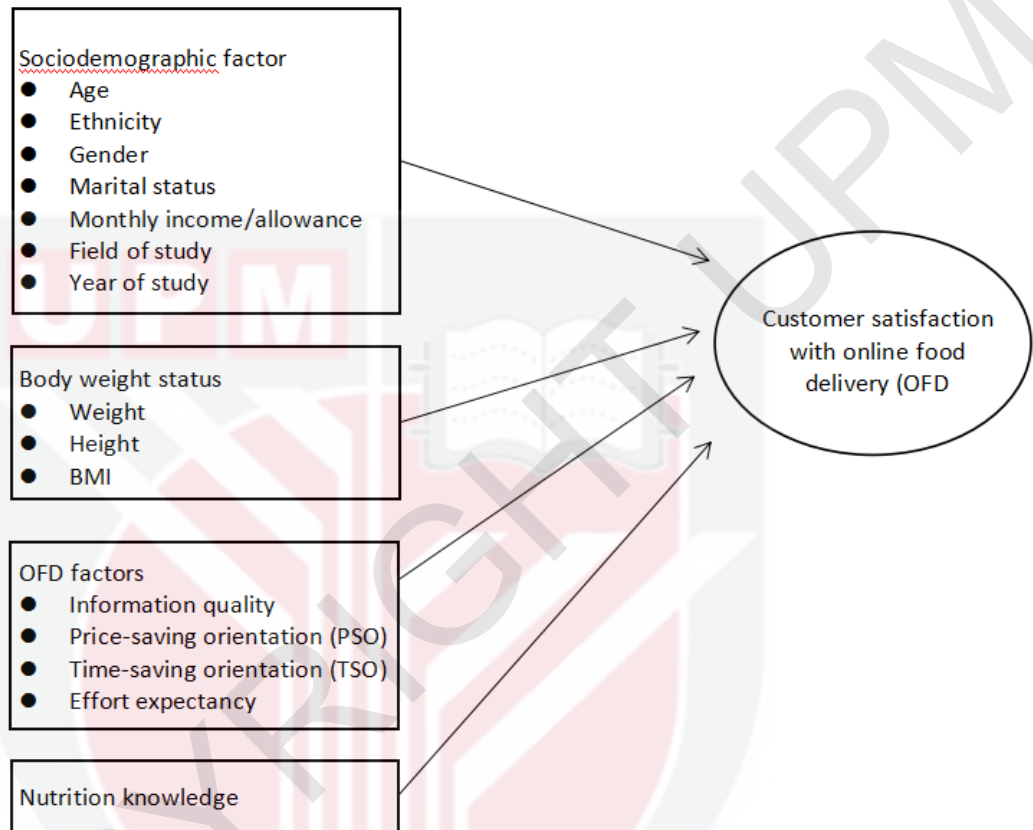


Figure 1.1: Conceptual framework of the factors influencing customer satisfaction with online food delivery among undergraduate students in UPM.

LITERATURE

REVIEW

2.1 Online food delivery

Online food delivery (OFD) is a type of business that gives ordering services, making payment and monitoring the process but not responsible for preparing the meals (Pigatto et al., 2017). Worldwide, OFD is expected to grow and generate \$312,153 million returns in 2020. Profit is estimated to expand at an annual rate of around 8.7 % which results in market volume of more than 400,000 million by the year of 2025 (Statistica, 2021).

2.2 Customer satisfaction

Hectic lifestyles are seen among students which cause the lack of time to prepare their own food (Papadaki et. al., 2007). Therefore, students use online food delivery as a tool which eases their food preparation and food purchase (Ramli et. al., 2021).

Customer satisfaction is a measurement that evaluates how satisfied customers are with a business's goods, service and abilities. Information about customer satisfaction such as survey, ratings may assist an organisation in determining to enhance the products and service quality (Furse et. al., 1994). Undeniably, customers are the most important component in a company's survival and growth. The satisfaction encompass the thoughts related to the process of purchasing and the

feeling before and after a customer made a purchase (Biesok & Wyrod-Wrobel., 2011).

2.3 Factors associated with customer satisfaction with online food delivery

2.3.1 Sociodemographic factors

Chai and Yat (2019) found that the highest user of online food delivery in Klang Valley is Chinese (81.45%) followed by Malay (9.27%), Indian (7.62%) and others (1.66%). The sample also consists of 57.62% female and 42.38% male from 302 respondents. Another study conducted by Faizar et. al. (2021) found that 215 (67.9%) female respondents have been using online food delivery compared to 69 (32.1%) male respondents in Universiti Teknologi Mara (UiTM) Cawangan Permatang Pauh and Bertam.

2.3.2 Body weight status

Keeble et. al. (2021) observed that access to various online food outlets is not related to BMI or weight status however it might be due to the observed variables still not developed. Burgoine et. al. (2014) found that takeaway foods being consumed in different settings such as home and workplace are related to increase in higher BMI and also increases the chance to develop obesity. Mohammadbeigi et. al. (2018) concluded that fast food consumption is associated with abdominal obesity but not with BMI.

2.3.3 Information quality

Information quality is determined by the user's perception of the value of a system's output. There are various determinants of information quality perceptions which include output timeliness, reliability, precision, currency and accuracy (Bailey & Pearson, 1983). Information quality was defined in this study as having two aspects: informativeness and enjoyment. These two factors have an impact on the value clients get from a Web-based interface (Ducoffe, 1996). According to DeLone and McLean (2003), information quality is a critical part to the success of an information system. Lederer et al. (2000) observed that information quality had a strong association with perceived usefulness. Jarvenpaa and Todd (1996) showed that positive remarks from clients were connected with the lucidity and visual attractiveness of data on an item, administration, or shop.

2.3.4 Price-saving orientation

Dodds et. al. (1991) suggested that price value is the customer's mental willingness to trade for known benefit, with involvement of monetary cost. One of the factors that fulfil customer satisfaction is price-saving orientation (PSO) such as discounts and offers (Pinto et. al., 2021). Lee et. al. (2019) defines price -saving orientation as the benefits gained from apps users towards the cost during using the apps. A study by Ren et al. (2020) showed that price has a positive association on the intention to use online food delivery services.

2.3.5 Time-saving orientation

Time-saving orientation according to Jensen (2012) is that during online purchase, people always prefer to shorten time. Higher income consumers tend to prefer time saving during purchase compared to lower income which favour price (Punj, 2012). The value of the service provided also increases if time-saving is included (Jeng, 2016). Online purchasing is also deemed as helpful due to its time-saving, small work and offer expanded store hours and efficient checkouts (Chiu et. al., 2014).

2.3.6 Effort expectancy

Venkatesh et al. (2003) define effort expectancy as the level of ease while using any system. Effort expectancy together with performance expectancy significantly influence the behavioural intentions to use mobile commerce (Sair & Danish, 2018). A positive and huge relationship between effort expectancy and attitude exists when people acknowledge electronic or mobile based systems (Dwivedi et. al., 2017). Effort expectancy has a higher effect on customer satisfaction especially when the user has low experience while it has low effect on customer satisfaction with high experience (Pappas et. al., 2014).

2.3.7 Nutritional knowledge

Ueda et. al. (2012) define nutritional knowledge as “the ability to indicate the healthy option from pairs of food products, was positively associated with logo recognition; a finding that tells against marketing effects on nutritional knowledge, at least on a general level as tested in this study”. There is a positive relationship between

nutritional knowledge and dietary intake with nutritional intake being the focal factor (Leonard et. al., 2014). An adequate nutritional knowledge is needed to consume a nutritionally complete diet for vegetarians (Sanne & Bjørke-Monsen, 2020). McKinnon (2010) Customers do opt for products that can elevate or maintain health. This can also be a factor when a customer plans to buy again in the future. Utilitarian consumers also chose health-based items when purchasing food (Laverack, 2013).

CHAPTER 3

METHODOLOGY

3.1 Study Design

This is a cross-sectional quantitative study. This study was conducted by the use of an online questionnaire among undergraduate students in UPM Serdang.

3.2 Study Location

This study was conducted at Universiti Putra Malaysia in Serdang. The purpose of choosing this campus was due to its location in Klang Valley which has good accessibility towards internet and online food delivery.

3.3 Participants

The participants of this study were undergraduate students at Universiti Putra Malaysia. The criteria were as follow;

Table 3.1 Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Undergraduates students from UPM	Zero experience on online food delivery usage
19 years old and above	

3.4 Sample size determination

The sample size was calculated using G*Power software v3.1. (Faul et al., 2009)

Correlation: Bivariate normal model is used as statistical test for Pearson r Correlation Coefficient. Type of power analysis used is A priori: Compute required sample size - given α , power, and effect size.

$$\alpha = 0.5$$

$$\text{Power } (1 - \beta) = 0.8$$

$$\text{Cohen's effect size, } d = 0.3 \text{ Total sample size} = 84 \text{ Adjust for Response Rate} \\ 84 / 0.8 = 105$$

3.5 Sampling Design

To examine the customer satisfaction with online food delivery, purposive sampling and convenience sampling was used. The online questionnaires were distributed to undergraduate students at Universiti Putra Malaysia through their email. Advantages of convenience sampling include it is easier to carry out during the pandemic. In addition, it requires little time and cost compared to other types of sampling. Data was also collected quickly.

Faculties with undergraduate programs in UPM Serdang (n=14)

↓ Purposive Sampling

Fakulti Bahasa Moden & Komunikasi, Fakulti Bioteknologi & Sains Biomolekul, Fakulti Ekologi Manusia, Fakulti Ekonomi dan Pengurusan, Fakulti Kejuruteraan, Fakulti Pengajian Alam Sekitar, Fakulti Pengajian Pendidikan, Fakulti Perhutanan, Fakulti Pertanian, Fakulti Perubatan & Sains Kesihatan, Fakulti Perubatan Veterinar, Fakulti Rekabentuk & Senibina, Fakulti Sains, Fakulti Sains dan Teknologi Makanan, Fakulti Sains Komputer & Teknologi

Maklumat

↓ Convenience Sampling

All students available that meets inclusion and exclusion criteria

↓

Students who agreed and met the criteria of the study.

Figure 3.1 Flow Chart of Sampling Design

3.6 Study Instruments

The items of the questionnaire are adapted from previous studies (Fakfare., 2021; Marina., 2020; Praytso et al., 2021; Ramos., 2021). The items were adjusted in order to match this study. The Cronbach's alpha for these four types of questionnaires are all above 0.6 which is moderate and acceptable. The questionnaire used English language as the sample size of this study is undergraduate students which have decent English comprehension. This questionnaire consists of 8 parts; sociodemographic, body weight status, customer satisfaction, information quality, price-saving information, time-saving information,

effort expectancy and nutritional knowledge. Scoring is shown in Table 3.2.

3.6.1 Sociodemographic

There were seven items for sociodemographic; age, ethnicity, gender, marital status, monthly allowance, field of study and year of study. These questions were asked using open ended questions and multiple choice answers questions.

3.6.2 Body weight status

There were three items for this section which were weight, height. Calculation and interpretation of the BMI were provided. Students inserted their own respective height and weight based on their latest measurement. BMI were calculated by using the BMI formula and classified students into their respective BMI classification. The classification are underweight, normal weight, overweight, obese class I, obese class II and obese class III.

3.6.3 Information quality

Information quality is a measure of the benefits by which the information is provided to the consumer of that information. There are four items to assess the information quality construct which were fully adapted by Kapoor and Vij (2018). Likert scale ranging from 1 (Strongly Dissatisfied) to 7 (Strongly Satisfied) with neutral option at the midpoint which is 4. The Cronbach's alpha value for this construct is more than 0.7.

3.6.4 Price-saving orientation

There were three items to assess price-saving orientation. The items for this construct were adapted from Farkfare (2021) under the special benefits construct. All the items will be assessed using a seven-point Likert scale ranging from 1 (Strongly Dissatisfied) to 7 (Strongly Satisfied) with neutral option at the midpoint. The reliability score for these items is more than 0.6.

3.6.5 Time-saving orientation

There were four items to assess price-saving orientation. The items for this construct were adapted from Farkfare (2021). All the items were assessed using a seven-point Likert scale ranging from 1 (Strongly Dissatisfied) to 7 (Strongly Satisfied) with neutral option at the midpoint and a reliability score (Cronbach's alpha) for these items is more than 0.6. There were some changes made to the items to fit the study. For example, the term "food delivery applications (FDAs)" in the original item were changed to "online food deliveries (OFDs)".

3.6.6 Effort expectancy

There are six items to assess effort expectancy construct. The items for this construct were adapted from Ramos (2021). All the items were assessed using a four-point Likert scale from 1 (Strongly disagree) to 4 (Strongly agree) with a reliability score (Cronbach's alpha) for these items is 0.848. The changes were made on the Likert scale where in the original survey, scale of 1 (Totally disagree) to 4 (Totally agree).

3.6.7 Nutritional knowledge

A total of 25 items were assessed for nutritional knowledge to assess nutritional menu labelling knowledge. The items were adapted by Marina et al. (2020). The scale use is using a multiple choice answer question; yes, no and maybe. Scoring 25 and above is considered good.

3.6.8 Customer satisfaction

There are four items to assess customer satisfaction. The items for this construct were adapted from Farkfare (2021) under satisfaction construct. All the items were assessed using a seven-point Likert scale ranging from 1 (Strongly Dissatisfied) to 7 (Strongly Satisfied) with neutral option at the midpoint and a reliability score (Cronbach's alpha) for these items is more than 0.7. There are some changes made to the items to fit the study. For example, the term "food delivery applications (FDAs)" in the original item were changed to "OFDs".

Table 3.2 Study Instruments

Variable	Item	Reliability score	Scale
Sociodemographic	<ul style="list-style-type: none">- Age- Ethnicity- Gender- Marital status- Monthly income/ allowance- Field of study,- Year of study	.	<ol style="list-style-type: none">1. Open ended questions2. Multiple choice question
Body weight status	<ul style="list-style-type: none">- Weight- Height- BMI	-	<ol style="list-style-type: none">1. Open ended questions
Information quality (Kapoor & Vij., 2018)	The OFD provides me with relevant information to my needs	More than 0.7	Likert scale range from 1 (strongly

	The OFD have a accurate information		dissatisfied) to 7(strongly satisfied)
	The OFD has reviews of customers		
	The OFD provides contact details of the restaurants		
Price-saving orientation (Fakfare., 2021)	I enjoy offers in the form of vouchers, cashback and discounts from OFD	More than 0.7	Likert scale range from 1 (strongly dissatisfied) to 7(strongly satisfied)
	I enjoy loyalty programmes launched by OFD		
	I refer the OFD to my friends to earn a referral bonus		
Time-saving orientation (Fakfare., 2021)	OFDs provide convenience by comparing prices from different restaurants	More than 0.7	Likert scale range from 1 (strongly dissatisfied) to 7(strongly satisfied)
	OFDs help me avoid traffic		
	OFDs help me avoid waiting at restaurants		
Effort expectancy (Ramos., 2021)	Easy to track the order	0.858	Likert scale range from 1 (strongly disagree) to 4 (strongly agree)
	The stage of the order		
	The variety of restaurants in the applications		
	Payment options		
	The delivery must find my location without difficulty		
	Easy app navigation to review options and selection of the food		
Nutritional knowledge	Calorie is a a measure of the energy in food	-	Scoring Poor = 0-7

(Marina et al., 2020)	The calorie required for the sedentary women is 1500 kcal	Moderate = 8-14 High = 15-25
	The calorie required for active women is 2000 kcal	
	The calorie required food active men is 2500 kcal	
	Fat contributes the highest calorie of 9 kcal per 1 gram	
	Protein provides 4 kcal per gram of food	
	Carbohydrates contributes 4 kcal per gram of food	
	One plate of fried rice contains higher calorie content than one plate of white rice	
	The recommended daily intake of sugar is 50 grams	
	The higher the fat content in the food, the higher the calorie content	

	The recommended servings for cereals and grains is 4-8 servings per day		
	The recommended servings for fruits and vegetables is 2-3 servings per day		
	The recommended serving protein is ½ to 1 servings per day		
	The recommended servings for nuts and dairy products is ½ - 2 servings per day		
	Teh peng contains higher calorie than teh o		
	The calorie for one plate of white rice is about 240 kcal		
	Roti bakar spread with jam contains higher calories than plain 'roti bakar'		
	The recommended calorie intake for breakfast is approximately 400 kcal		
	The recommended calorie intake for morning tea is approximately 250 kcal		
	The recommended calorie intake for lunch is approximately 500 kcal		
	The recommended calorie intake for teatime is approximately 250 kcal		
	The recommended calorie intake for dinner is approximately 400 kcal		
	Limau ice contains a lower calorie content than sirap limau		
	Fried chicken contains higher calorie content than		

	chicken curry		
	Fried mee has lower calorie content than mee sup		
Customer satisfaction (Fakfare., 2021)	I am very satisfied with the overall experience of using OFD	More than 0.7	Likert scale range from 1 (strongly disagree) to 7(strongly agree)
	I believe I did the right thing to using OFD		
	I feel satisfied with the convenience provided by the online food delivery process		
	As a whole, I am happy with OFD		

3.7 Pre-Testing

For the pretesting, 11 (10.4%) students from UPM were included in the pretesting and excluded from the actual study. This was being done to have smooth flow during actual study, minimise errors review during analysis and improvise based on the feedback.

3.8 Data Collection Procedures

After getting the approval from UPM's Ethics Committee for Research Involving Human Subjects (JKEUPM) with reference JKEUPM-2022-215, the process of data collection started. Data were collected using an online questionnaire created from Google Form. The online questionnaires were disseminated by using WhatsApp to undergraduate students by April 2022. Before letting the participants answer the questionnaire, consent forms were given to them. Only participants that agreed to join the study answered the questionnaire. Pre-testing was conducted before the data collection with the

same criteria of participants to receive feedback about the questionnaire. The feedback was used to make amendments. The revised questionnaire was used for the actual data collection. Then, the collected data were analysed.

Outcomes that were obtained from the result of this analysis include sociodemographic factors (age, ethnicity, gender, marital status, monthly income/ allowance, field of study, year of study), body weight status (weight, height, BMI), online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort expectancy), nutritional knowledge and customer satisfaction. The results of the study and analysis would help in understanding the factors related to customer satisfaction with online food delivery among undergraduate students. . By understanding these factors, companies would be able to improve their services and increase customer satisfaction.

Operational definition

- a) Online food delivery - Process of ordering food from website and application
- b) Customer satisfaction - Measurement of how satisfied the customer towards OFD system
- c) Information quality - Measurement for quality of the OFD information based on intrinsic, contextual, representational and accessibility.
- d) Effort expectancy - The degree of ease in using the OFD system

3.9 Data Analysis

The data were analysed using IBM SPSS Statistics Version 26 (p-value ≤ 0.05) The normality of the data distribution was checked using Kolmogorov–Smirnov test before the actual study was conducted. Descriptive statistics were analysed using frequency, mean or standard deviation. The relationship between variables were analysed using Pearson’s r correlation and the categorical variables were analysed using Chi-Square Test for Association.



CHAPTER 4

RESULTS

4.1 Sociodemographic factors

A total of 101 respondents have participated in this study. The respondents consisted of 43.6% male (n=44) and 56.4% female (n= 57). The mean age of all respondents is 21.92 ± 0.81 years old with the age ranging from 19 years to 25 years old. In this study, more than half of the total respondents are female which is similar to the study by Pitchay et. al. (2021) where 41.4% of the respondents were male respondents and 58.6% were female. This demographic is also similar to the study by Hooi et. al. (2021) where female consists of 59.3% while male consists of 40.7%.

As for ethnicity, 84.2% (n=85) of respondents were Malays, 6.9% (n=7) were Chinese, 4% (n=4) were Indian, 2% were Bumiputera Sabah and Sarawak and the rest were foreigners (n=3). The majority of the respondents being Malay is identical to another study which 70.7% of the subjects were from Malay respondents (Pitchay et. al., 2021).

For the monthly household income group, 43.6% were in the B40 group, 34.7% in the M40 group and 21.8% were from the T20 group. This finding is identical to the Household Income Survey by the Department of Statistics, Malaysia.

Table 4.1: Sociodemographic factors of students (n=101)

Variables	n(%)	Mean \pm SD
Age (years)		21.92 ± 0.81
Sex		
Male	44 (43.6)	

Female	57 (56.4)
Ethnicity	
Malay	85 (84.2)
Chinese	7 (6.9)
Indian	4 (4.0)
Bumiputera Sabah and Sarawak	2 (2.0)
Foreigner	3 (3.0)
Household income	
Less than RM4,850 per month	44 (43.6)
RM4,850 – RM10,959 per month	35 (34.7)
More than RM10,959 per month	22 (21.8)

4.2 Body weight status

Based on Table 4.2, the mean Body Mass Index (BMI) of the respondents were 22.28 ± 4.25 kg/m² with 19.8% (n=20) of the respondent were underweight, 42.6% (n=43) respondent with normal BMI, 24.8% (n=25) of overweight respondent and 12.9% (n=13) respondent with obesity. Therefore, majority of the respondents were having ideal BMI, followed by overweight, underweight and obese.

Table 4.2: Body weight status of respondents (n=101)

Variables	n(%)	Mean \pm SD
Weight(kg)		59.98 \pm 14.12
Height(m)		1.63 \pm 0.89
Body Mass Index, kg/m²		22.28 \pm 4.25
Underweight (<18.5 kg/m ²)	20 (19.8)	
Ideal (18.5 – 22.99 kg/m ²)	43 (42.60)	
Overweight (23.0 – 27.5 kg/m ²)	25 (24.80)	

4.3 Online food delivery factor

4.3.1 Information quality

To assess the information quality, four items were used to assess the information quality of OFD for students. The mean score of information quality is 5.404 ± 1.096 . This means that the average of the students were slightly satisfied with the information quality provided by OFD. This finding correlates with information quality influence positively on attitude towards online food delivery (Pitchay et. al.,2021). A good level of information quality also provides more level of trust towards online food delivery (Zulkarnain et. al., 2015).

Based on table 4.3.1, for each item, most of the participants were slightly satisfied to strongly satisfied with the information quality. The participants perceived the information in the applications positively.

Few factors of the information quality that may affect the perception of the students including the reliability, precision, accuracy and timeliness of the applications (Bailey & Pearson, 1983). Information quality is an important feature for the application. According to Leadered et al (2000), information quality is closely related to the usefulness. The participants may have found that information in OFD was useful for them to make ordering and purchasing. Following uses and gratification theory (UGT), individuals decide to use various forms of media because they anticipate acquiring specific fulfillments and satisfaction following the outcomes of the selections (Blumler and Katz, 1974).

Table 4.3.1 Information quality of respondents (n=101)

Variables	n(%)
The online food delivery (OFD) provides me with relevant information to my needs.	
Strongly dissatisfied	1(1.0)
Dissatisfied	2(2.0)
Slightly dissatisfied	6(5.9)
Neutral	10(9.9)
Slightly satisfied	27(26.7)
Satisfied	32(31.7)
Strongly dissatisfied	23(22.8)
The OFD have accurate information.	
Strongly dissatisfied	1(1.0)
Dissatisfied	2(2.0)
Slightly dissatisfied	8(7.9)
Neutral	15(14.9)
Slightly satisfied	31(30.7)
Satisfied	26(25.7)
Strongly dissatisfied	18(17.8)
The OFD has reviews of customers.	
Strongly dissatisfied	2(2.0)
Dissatisfied	5(5.0)
Slightly dissatisfied	1(1.0)
Neutral	4(4.0)
Slightly satisfied	24(23.8)
Satisfied	29(28.7)
Strongly dissatisfied	36(35.6)

The OFD provides contact details of the restaurants.

Strongly dissatisfied	4(4.0)
Dissatisfied	4(4.0)
Slightly dissatisfied	2(2.0)
Neutral	16(15.8)
Slightly satisfied	25(24.8)
Satisfied	28(27.7)
Strongly dissatisfied	22(21.8)

4.3.2 Price-saving orientation

To assess the price-saving orientation, three items were used to assess the price-saving orientation of OFD for students. The mean score of price-saving orientation is 5.591 ± 1.143 . This shows that only the average of the students were slightly satisfied with the price-saving orientation from OFD. Based on table 4.3.2 for each item, most of the participants were strongly satisfied with price saving orientation. The participants perceived positively towards the offers in the form of vouchers, cashback, discounts and loyalty programmes that are provided by the OFD. When using OFD, the customers were expected to pay extra money in order to have the meals delivered to them which can lead to higher prices compared to the price when the customers purchased conventionally (Daud and Yoong, 2019). Therefore, the strategy of providing offers can make the customers perceive the price-saving orientation positively.

Table 4.3.2: Price-saving orientation of students (n=101)

Variables	n(%)
I enjoy offers in the form of vouchers, cashback and discounts from online food delivery (OFD).	
Strongly dissatisfied	1(1.0)
Dissatisfied	0(0.0)
Slightly dissatisfied	2(2.0)
Neutral	3(3.0)
Slightly satisfied	8(7.9)
Satisfied	29(28.7)
Strongly dissatisfied	58(57.4)
I enjoy loyalty programmes launched by OFD	
Strongly dissatisfied	1(1.0)
Dissatisfied	3(3.0)
Slightly dissatisfied	6(5.9)
Neutral	5(5.0)
Slightly satisfied	27(26.7)
Satisfied	25(24.8)
Strongly dissatisfied	34(33.7)
I refer the OFD to my friends to earn a referral bonus	
Strongly dissatisfied	11(10.9)
Dissatisfied	5(5.0)
Slightly dissatisfied	10(9.9)
Neutral	12(11.9)
Slightly satisfied	16(15.8)
Satisfied	21(20.8)
Strongly dissatisfied	26(25.7)

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4.3.3 Time-saving orientation

To assess the time-saving orientation, three items were used to assess the time-saving orientation of OFD for students. The mean score of time-saving orientation is 5.993 ± 0.971 . This can be considered as a high score by the students as it almost achieved satisfied level. This mean score also shows that average of the students were slightly satisfied with the time-saving orientation provided by the OFD.

Table 4.3.3: Time-saving orientation of students (n=101)

Variables	n(%)
Online food deliveries (OFDs) provide convenience by comparing prices from different restaurants	
Strongly dissatisfied	2(2.0)
Dissatisfied	5(5.0)
Slightly dissatisfied	5(5.0)
Neutral	15(14.9)
Slightly satisfied	19(18.8)
Satisfied	18(17.8)
Strongly dissatisfied	37(36.6)
OFDs help me avoid traffic	
Strongly dissatisfied	1(1.0)
Dissatisfied	0(0.0)
Slightly dissatisfied	0(0.0)
Neutral	4(4.0)
Slightly satisfied	15(14.9)
Satisfied	24(23.8)
Strongly dissatisfied	57(56.4)

OFDs help me avoid waiting at restaurants

Strongly dissatisfied	1(1.0)
Dissatisfied	0(0.0)
Slightly dissatisfied	0(0.0)
Neutral	7(6.9)
Slightly satisfied	15(14.9)
Satisfied	18(17.8)
Strongly dissatisfied	60(59.4)

4.3.4 Effort expectancy

To assess the effort expectancy, six items were used to evaluate the effort expectancy of OFD for students. The mean score of effort expectancy is 3.602 ± 0.431 . This shows that respondents agree that OFD requires light effort to use it. Based on table 4.3.2 for each item, most of the participants strongly agree that the OFD was easy to use. This shows that the participants that the degree of ease and effortlessness was high. The participants perceived that the OFD was easy to track, the ordering stage is presented clearly and many restaurants were included in the OFD.

Table 4.3.4: Effort expectancy of respondents (n=101)

Variables	n(%)
Online food delivery (OFD) is easy to track the order	
Strongly disagree	1(1.0)
Disagree	0(0.0)
Agree	34(33.7)
Strongly agree	66(65.3)

The stage of the order is clearly presented

Strongly disagree	1(1.0)
Disagree	1(1.0)
Agree	29(28.7)
Strongly agree	70(69.3)

The are variety of restaurants in the online food delivery (OFD) applications

Strongly disagree	1(1.0)
Disagree	2(2.0)
Agree	25(24.8)
Strongly agree	73(72.3)

Online food delivery (OFD) has good payment options

Strongly disagree	0(0.0)
Disagree	0(0.0)
Agree	25(24.8)
Strongly agree	76(75.2)

The online food delivery (OFD) must find my location without difficulty

Strongly disagree	1(1.0)
Disagree	9(8.9)
Agree	42(41.6)
Strongly agree	49(48.5)

Online food delivery (OFD) has easy app navigation to review options and selection of the food

Strongly disagree	1(1.0)
Disagree	4(4.0)
Agree	39(38.6)
	57(56.4)

Strongly agree

4.4 Nutritional knowledge

To assess the nutritional knowledge, 25 items were used to evaluate the nutritional knowledge of students on menu labelling. The mean score of nutritional knowledge is 15.089 ± 6.108 . This mean score is at the high nutritional knowledge. More than half of students have high nutritional knowledge (n=54). This finding contradicts a study by Zainordin et. al. (2015) which university students have low nutritional knowledge on calories.

Table 4.4: Nutrition knowledge of students (n=101)

Variables	n(%)
Calorie is a a measure of the energy in food	
Yes	92(91.1)
No	2(2.0)
Maybe	7(6.9)
The calorie required for the sedentary women is 1500 kcal	
Yes	49(48.5)
No	12(11.9)
Maybe	40(39.6)
The calorie required for active women is 2000 kcal	
Yes	53(52.5)
No	8(7.9)
Maybe	40(39.6)
The calorie required food active men is 2500 kcal	
Yes	64(63.4)
No	5(5.0)

Maybe	32(31.7)
-------	----------

Fat contributes the highest calorie of 9 kcal per 1 gram

Yes	73(72.3)
-----	----------

No	4(4.0)
----	--------

Maybe	24(23.8)
-------	----------

Protein provides 4 kcal per gram of food

Yes	73(7.3)
-----	---------

No	1(1.0)
----	--------

Maybe	27(26.7)
-------	----------

Carbohydrates contributes 4 kcal per gram of food

Yes	66(65.3)
-----	----------

No	5(5.0)
----	--------

Maybe	30(29.7)
-------	----------

One plate of fried rice contains higher calorie content than one plate of white rice

Yes	87(86.1)
-----	----------

No	4(4.0)
----	--------

Maybe	10(9.9)
-------	---------

The recommended daily intake of sugar is 50 grams

Yes	30(29.7)
-----	----------

No	23(22.8)
----	----------

Maybe	48(47.5)
-------	----------

The higher the fat content in the food, the higher the calorie content

Yes	80(79.2)
-----	----------

No	8(7.9)
----	--------

Maybe	13(12.9)
-------	----------

The recommended servings for cereals and grains is 4-8 servings per day

Yes	49(48.5)
-----	----------

No	24(23.8)
----	----------

No	28(27.7)
----	----------

Maybe

The recommended servings for fruits and vegetables is 2-3 servings per day

	69(68.3)
Yes	19(18.8)
No	13(12.9)
Maybe	

The recommended serving protein is ½ to 1 servings per day

Yes	37(36.6)
No	36(35.6)
Maybe	28(27.7)

The recommended servings for nuts and dairy products is ½ - 2 servings per day

Yes	61(60.4)
No	11(10.9)
Maybe	29(28.7)

Teh peng contains higher calorie than teh O

Yes	77(76.2)
No	7(6.9)
Maybe	17(16.8)

The calorie for one plate of white rice is about 240 kcal

Yes	54(53.5)
No	9(8.9)
Maybe	38(37.6)

Roti bakar spread with jam contains higher calories than plain 'roti bakar'

	89(88.1)
Yes	3(3.0)
No	9(8.9)
Maybe	

The recommended calorie intake for breakfast is approximately 400 kcal

Yes	56(55.4)
-----	----------

No	4(4.0)
Maybe	41(40.6)

The recommended calorie intake for morning tea is approximately 250 kcal

Yes	43(42.6)
No	8(7.9)
Maybe	50(49.5)

The recommended calorie intake for lunch is approximately 500 kcal

Yes	60(59.4)
No	2(2.0)
Maybe	39(38.6)

The recommended calorie intake for teatime is approximately 250 kcal

Yes	46(45.5)
No	8(7.9)
Maybe	47(46.5)

The recommended calorie intake for dinner is approximately 400 kcal

Yes	53(52.5)
No	4(4.0)
Maybe	44(43.6)

Limau ais contains a lower calorie content than sirap limau

Yes	57(56.4)
No	20(19.8)
Maybe	24(23.8)

Fried chicken contains higher calorie content than chicken curry

Yes	48(47.5)
No	24(23.8)
Maybe	29(28.7)

Fried mee has lower calorie content than mee sup

Yes	26(25.7)
No	61(60.4)
Maybe	14(13.9)

4.5 Customer satisfaction with online food delivery

To assess the customer satisfaction with online food delivery, four items were being used. The mean score of customer satisfaction is 5.876 ± 0.989 . On average, students were slightly satisfied with the online food delivery itself. This is in line with the study by Nayan and Hassan (2020) in which respondents were mostly satisfied with the local online food service.

Table 4.5: Customer satisfaction with online food delivery among students (n=101)

Variables	n(%)
I am very satisfied with the overall experience of using OFD	
Strongly dissatisfied	0(0.0)
Dissatisfied	1(1.0)
Slightly dissatisfied	2(2.0)
Neutral	12(11.9)
Slightly satisfied	25(24.8)
Satisfied	30(29.7)
Strongly dissatisfied	31(30.7)
I believe I did the right thing to using OFD	
Strongly dissatisfied	0(0.0)
Dissatisfied	1(1.0)
Slightly dissatisfied	0(0.0)
Neutral	12(11.9)

Slightly satisfied	19(18.8)
Satisfied	31(30.7)
Strongly dissatisfied	38(37.6)

I feel satisfied with the convenience provided by the online food delivery process

Strongly dissatisfied	1(1.0)
Dissatisfied	0(0.0)
Slightly dissatisfied	0(0.0)
Neutral	9(8.9)
Slightly satisfied	21(20.8)
Satisfied	30(29.7)
Strongly dissatisfied	40(39.6)

As a whole, I am happy with OFD

Strongly dissatisfied	1(1.0)
Dissatisfied	0(0.0)
Slightly dissatisfied	2(2.0)
Neutral	5(5.0)
Slightly satisfied	22(21.8)
Satisfied	37(36.6)
Strongly dissatisfied	34(33.7)

4.6 Association between sociodemographic factors (age, ethnicity, gender, monthly household income group, year of study) with customer satisfaction with online food delivery

Spearman's rank-order test was used to determine the association between age and customer satisfaction with online food delivery as shown in Table 4.6. There was no association of age with customer satisfaction with

online food delivery. This finding is similar to the previous study by Singh and Kaur (2020) where age has no effect on customer satisfaction with online food delivery. Therefore, age has zero influence on customer satisfaction at any level.

Table 4.6 Association between age with customer satisfaction with online food delivery (n=101)

Variables	r-value	p-value
Age	0.049	0.626

Age, gender, monthly household income group and year of study has no significant association with customer satisfaction with OFD among undergraduate students in UPM. However, ethnicity does have a significant association with customer satisfaction with OFD among undergraduate students in UPM.

4.7 Association between body weight status (weight, height, BMI) with customer satisfaction with online food delivery

Pearson correlation test was used to determine the association between BMI and customer satisfaction with online food delivery as shown in Table 4.7. There is no significant correlation between BMI and customer satisfaction with online food delivery.

Table 4.7: Association between BMI with customer satisfaction with online food delivery

Variables	r-value	p-value
BMI	-0.104	0.301

4.8 Association between online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort

expectancy) with customer satisfaction with online food delivery

Spearman's rank-order test was used to determine the association between online food delivery (OFD) factors (information quality, price-saving orientation, time-saving orientation, effort expectancy) with customer satisfaction with online food delivery. Information quality, price-saving orientation, time-saving orientation and effort expectancy has a positive significant association with customer satisfaction with OFD among undergraduates in UPM with significant value of 0.649, 0.604, 0.558 and 0.585 respectively. This finding is supported by a study by Nayan and Hassan (2020) which highlights time is among the major factors for customer satisfaction with online food delivery. Study by Ling et. al. (2021) also supports that effort expectancy or convenience have a big role on the customer satisfaction with the online food delivery. Time-saving orientation can be seen having the most significant power in determining customer satisfaction and intention with online food delivery.

Table 4.8: Associations between OFD factors with customer satisfaction with online food delivery among respondents in UPM

Variable	<i>r</i>-value	<i>p</i>-value
Information quality	^a 0.649	<0.001**
Price-saving orientation	^a 0.604	<0.001**
Time-saving orientation	^a 0.558	<0.001**
Effort expectancy	^a 0.585	<0.001**

**Correlation is significant at the 0.05 level (2-tailed)

^aSpearman's rank-order test

4.9 Association between nutritional knowledge with customer satisfaction with online food delivery

In this study, there was no significant association between nutritional knowledge and customer satisfaction with OFD among undergraduates in UPM.

This finding is not in line with another study by Omariba (2018) in which higher nutritional knowledge on food consumed from the restaurant caused lower customer satisfaction. One study found that knowledge on a product significantly affects customer satisfaction, however it is closely related to the loyalty towards the products (Suchanek and Kralova, 2017). Long term use of online food delivery is important to determine the customer's satisfaction.

Table 4.9: Association between nutritional knowledge with customer satisfaction with online food delivery (n=101)

Variables	r-value	p-value
Nutritional knowledge	0.152	0.128

CHAPTER 5

CONCLUSI

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5.1 Conclusion

An average of undergraduates in UPM Serdang were slightly satisfied with the online food delivery available around them. There are many improvements that can be made from the online food delivery services themselves. Such as improving the application interface, better prices and charges, detailed information and visuals of each menu and faster preparation and delivery time. The findings of this study managed to determine factors associated with customer satisfaction with online food delivery among undergraduate students in UPM.

5.2 Limitation

In this study, the students that had participated were mostly from the Faculty of Medicine and Health Sciences. This causes the data to not be collected equally from all the faculties available in UPM. The anthropometric measurements are also self-measured which could lead to bias or errors. It is also due to the Covid-19 pandemic which causes restriction to conduct anthropometric measurements on students. Another one, the sampling method used in this study is convenience sampling which cannot be generalised to the whole population.

5.4 Recommendations

It is recommended for future studies to increase the sample size study for the data collection. The reason is to ensure enough sample size is taken so

the representation of data is more precise and has high confidence in estimation.

Also, other factors that affect customer satisfaction should be added into this study to provide more accurate and insightful results. Factor that most likely to be included in the future research is hedonic motivation which is found to have the biggest impact on customer satisfaction and also loyalty.



REFERENCES

- Al-Tit, A. A. (2015). The effect of service and food quality on customer satisfaction and hence customer retention. *Asian social science*, 11(23), 129.
- Bailey, J. E., & Pearson, S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management science*, 29(5), 530-545.
- Bernama - Over 37,000 MSME entrepreneurs shut down businesses due COVID-19 -- MEDAC. (n.d.). Retrieved January 11, 2022, from <https://www.bernama.com/en/business/news.php?id=2012688>
- Burgoine, T., Forouhi, N. G., Griffin, S. J., Wareham, N. J., & Monsivais, P. (2014). Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study. *Bmj*, 348.
- Chai, L. T., & Yat, D. N. C. (2019). Online food delivery services: Making food delivery the new normal. *Journal of Marketing advances and Practices*, 1(1), 62-77.
- Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, 24(1), 85-114.
- Dazmin, D., & Ho, M. Y. (2019). The relationship between consumers' price-saving orientation and time-saving orientation towards food delivery intermediaries (FDI) services: an exploratory study. *Gsj*, 7(2).
- Delone, W.H.; McLean, E.R. The DeLone and McLean model of information systems success: A ten-year update. *J. Manag. Inf. Syst.* 2003, 19, 9–30

Department of Statistics Malaysia Official Portal. (n.d.). Retrieved January 11, 2022, from https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=395&bul_id=OWUvVnV5SHI2WFU2VFhnQ2ZjTm1Bdz09&menu_id=amVoWU54UT10a21NWmdhMjFMMWcyZz09

Dodds, W.B.; Monroe, K.B.; Grewal, D. Effects of price, brand and store information on buyers' product evaluations. *J. Mark. Res.* 1991, 28, 307–319.

Ducoffe, R. H. (1996). Advertising value and advertising on the web. *Journal of advertising research*, 36(5), 21-21.

Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, 34(2), 211-230.

Fadahunsi, K. P., Akinlua, J. T., O'Connor, S., Wark, P. A., Gallagher, J., Carroll, C., Majeed, A. & O'Donoghue, J. (2019). Protocol for a systematic review and qualitative synthesis of information quality frameworks in eHealth. *BMJ open*, 9(3), e024722.

Faizar, F. A., Ali, N. M., & Tarmazi, S. A. A. (2021). Online food ordering & delivery service: A study of satisfaction among students residing in UiTM Pulau Pinang during Movement Control Order (MCO).

Fakfare, P. (2021). Influence of service attributes of food delivery application on customers' satisfaction and their behavioural responses: The IPMA approach. *International Journal of Gastronomy and Food Science*, 25, 100392.

<https://doi.org/10.1016/J.IJGFS.2021.100392>

- Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods*. 2009 Nov;41(4):1149-60. doi: 10.3758/BRM.41.4.1149. PMID: 19897823.
- Furse, D. H., Burcham, M. R., Rose, R. L., & Oliver, R. W. (1994). Leveraging the value of customer satisfaction information. *Marketing Health Services*, 14(3), 16.
- HLPE. Impacts of COVID-19 on Food Security and Nutrition: Developing Effective Policy Responses to Address the Hunger and Malnutrition Pandemic; Committee on World Food Security High Level Panel of Experts on Food Security and Nutrition: Rome, Italy, 2020.
- Hooi, R., Leong, T. K., & Yee, L. H. (2021, March). Intention to use online food delivery service in Malaysia among university students. In *CoMBInES-Conference on Management, Business, Innovation, Education and Social Sciences* (Vol. 1, No. 1, pp. 60-73).
- Ibrahim, I.M.; Abdelmalek, D.H.; Elshahat, M.E.; Elfiky, A.A. COVID-19 spike-host cell receptor GRP78 binding site prediction. *J. Infect.* 2020, 80, 554–562.
- Jarvenpaa, S. L., & Todd, P. A. (1996). Consumer reactions to electronic shopping on the World Wide Web. *International Journal of electronic commerce*, 1(2), 59-88.
- Jeng, S. P. (2016). The influences of airline brand credibility on consumer purchase intentions. *Journal of Air Transport Management*, 55, 1-8.
- Jensen, J.M. (2012), “Shopping orientation and online travel shopping: the role of travel experience”, *International Journal of Tourism Research*, Vol. 14 No. 1, pp. 56-70.

- Keeble, M., Adams, J., Vanderlee, L., Hammond, D., & Burgoine, T. (2021). Associations between online food outlet access and online food delivery service use amongst adults in the UK: a cross-sectional analysis of linked data. *BMC public health*, 21(1), 1-12.
- Kehl, M. (2020). *Stop wasting, start waiting-Nudging customers' intention to wait in take-away restaurants to reduce food waste* (Bachelor's thesis, University of Twente).
- Knol, L. L., Robb, C. A., McKinley, E. M., & Wood, M. (2019). Very low food security status is related to lower cooking self-efficacy and less frequent food preparation behaviors among college students. *Journal of nutrition education and behavior*, 51(3), 357-363.
- Kuo, C. M., Chen, L. C., & Lin, S. Y. (2010, November). Exploring the relationship between hotel-based service attribute importance and customer satisfaction at international conferences in Taiwan. In *Journal of Convention & Event Tourism* (Vol. 11, No. 4, pp. 293-313). Taylor & Francis Group.
- Laverack, G. (2013). *AZ of health promotion*. Macmillan International Higher Education.
- Lederer, A. L., Maupin, D. J., Sena, M. P., & Zhuang, Y. (2000). The technology acceptance model and the World Wide Web. *Decision support systems*, 29(3), 269-282.
- Lee, S. W., Sung, H. J., & Jeon, H. M. (2019). Determinants of continuous intention on food delivery apps: extending UTAUT2 with information quality. *Sustainability*, 11(11),3141. Doi:10.3390/su11113141
- Leonard, A. J., Chalmers, K. A., Collins, C. E., & Patterson, A. J. (2014). The effect of nutrition knowledge and dietary iron intake on iron status in young women. *Appetite*, 81, 225-231.

Ling, G. M., Tiep, H. S., & Er, N. Z. (2021). Customer Satisfaction towards Mobile Food Delivery Apps during COVID-19 Pandemic. Reference to this paper should be made as follows: Ling, GM, 191-201.

Marina, M., Asma', A., Jaafar, S. N. A., Abdul Wahab, M. R., & Wan Zainal Shukri, W. H. (2020). Nutrition menu labelling in Terengganu: A cross-sectional study of knowledge, attitudes, perception and their relationship with healthy food choices. *Food Research*, 4(5), 1573–1581. [https://doi.org/10.26656/FR.2017.4\(5\).138](https://doi.org/10.26656/FR.2017.4(5).138)

McKinnon, A. C. (2010). Product-level carbon auditing of supply chains: environmental imperative or wasteful distraction?. *International Journal of Physical Distribution & Logistics Management*.

Memon, S. U. R., Pawase, V. R., Pavase, T. R., & Soomro, M. A. (2021). Investigation of COVID-19 impact on the food and beverages industry: China and India perspective. *Foods (Basel, Switzerland)*, 10(5), 1069. <https://doi.org/10.3390/foods10051069>

Mohammadbeigi, A., Asgarian, A., Moshir, E., Heidari, H., Afrashteh, S., Khazaei, S., & Ansari, H. (2018). Fast food consumption and overweight/obesity prevalence in students and its association with general and abdominal obesity. *Journal of preventive medicine and hygiene*, 59(3), E236.

Nayan, N. M., & Hassan, M. (2020). Customer satisfaction evaluation for online food service delivery system in Malaysia. *J. Inf. Syst. Technol. Manag*, 5(9), 123-136.

Omariba, I. (2018). Effect Of Knowledge In Food Choice On Customer Satisfaction In Restaurants Within Eldoret Central Business District, Kenya (Doctoral dissertation, University of Eldoret).

Online Food Delivery - Malaysia | Statista Market Forecast. (n.d.). Retrieved January 11, 2022, from <https://www.statista.com/outlook/dmo/eservices/online-food-delivery/malaysia>

Online Food Delivery Services Global Market Report 2021: COVID-19 Growth And Change To 2030. (n.d.). Retrieved January 11, 2022, from <https://www.reportlinker.com/p06064489/Online-Food-Delivery-Services-Global-Market-Report-COVID-19-Growth-And-Change-To.html>

Papadaki, A., Hondros, G., Scott, J. A., & Kapsokafalou, M. (2007). Eating habits of university students living at, or away from home in Greece. *Appetite*, 49(1), 169-176.

Pappas, I. O., Pateli, A. G., Giannakos, M. N., & Chrissikopoulos, V. (2014). Moderating effects of online shopping experience on customer satisfaction and repurchase intentions. *International Journal of Retail & Distribution Management*.

Perera, G. A. B. S., & Sachitra, K. M. V. (2019). Customer Satisfaction towards Online Shopping in Sri Lanka: Moderating Effect of Income Level. *Asian Journal of Advanced Research and Reports*, 6(2), 1-10. <https://doi.org/10.9734/ajarr/2019/v6i230149>

Pigatto, G., Machado, J.G., Negreti, A. and Machado, L. (2017), "Have you chosen your request? Analysis of online food delivery companies in Brazil", *British Food Journal*, Vol. 119 No. 3, pp. 639-657.

Pinto, P., Hawaldar, I. T., & Pinto, S. (2021). Antecedents of Behavioral Intention to Use Online Food Delivery Services: An Empirical Investigation.

Pitchay, A. A., Ganesan, Y., Zulkifli, N. S., & Khaliq, A. (2021). Determinants of customers' intention to use online food delivery application through smartphone in Malaysia. *British Food Journal*.

PM: Malaysia under movement control order from Wed until March 31, all shops closed except for essential services | Malaysia | Malay Mail. (n.d.). Retrieved January 11, 2022, from <https://www.malaymail.com/news/malaysia/2020/03/16/pm-malaysia-in-lockdown-from-wed-until-march-31-all-shops-closed-except-for/1847204>

Prasetyo, Y. T., Tanto, H., Mariyanto, M., Hanjaya, C., Young, M. N., Persada, S. F., Miraja, B. A., & Redi, A. A. N. P. (2021). Factors affecting customer satisfaction and loyalty in online food delivery service during the COVID-19 pandemic: Its relation with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 1–17. <https://doi.org/10.3390/joitmc7010076>

Punj, G. (2012). Income effects on relative importance of two online purchase goals: Saving time versus saving money?. *Journal of Business Research*, 65(5), 634-640.

Ramli, N., Abd Ghani, F., Nawawi, W. N. W., & Abd Majid, H. A. M. (2021). Intention to use online food ordering services among universities students during COVID-19 pandemic. *International Journal of Academic Research in Business and Social Sciences*, 11(13), 394-405.

Ren, S., Kwon, S.-D., & Cho, W.-S. (2020). Online Food Delivery (OFD) services in Cambodia: A study of the factors influencing consumers' behavioral intentions to use. <https://www.researchgate.net/publication/349552360>

Sair, S. A., & Danish, R. Q. (2018). Effect of performance expectancy and effort expectancy on the mobile commerce adoption intention through personal innovativeness among Pakistani consumers. *Pakistan Journal of Commerce and social sciences (PJCSS)*, 12(2), 501-520.

Selan, S. (2021, May 12). Harga makanan 'bungkus' Mahal, namun Kami tiada pilihan, kata pengusaha restoran. *MalaysiaNow*.

<https://www.malaysianow.com/berita/2021/05/12/harga-makanan-bungkus-mahal-namun-kami-tiada-pilihan-kata-pengusaha-restoran/>

Shah, A. U. M., Safri, S. N. A., Thevadas, R., Noordin, N. K., Rahman, A. A., Sekawi, Z., Ideris, A., & Sultan, M. T. H. (2020). COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. In *International Journal of Infectious Diseases* (Vol. 97, pp. 108–116). Elsevier BV. <https://doi.org/10.1016/j.ijid.2020.05.093>

Singh, M., & Kaur, D. (2020). A study of customer perception towards online food delivery with respect to age and gender. *Asian Journal of Management*, 11(3), 334-338.

Suchánek, P., & Králová, M. (2019). Customer satisfaction, loyalty, knowledge and competitiveness in the food industry. *Economic research-Ekonomska istraživanja*, 32(1), 1237-1255.

Top 12 food delivery platforms for F&B merchants in Malaysia – Yellow bees. (2021, September 27). Yellow Bees. <https://www.yellowbees.com.my/top-food-delivery-platforms-malaysia/%0A>

Ueda, P., Tong, L., Viedma, C., Chandy, S. J., Marrone, G., Simon, A., & Stålsby Lundborg, C. (2012). Food marketing towards children: brand logo recognition, food-related behavior and BMI among 3–13-year-olds in a south Indian town.

Zahiid, S. J. (2021, April 29). Wondering why there is a shortage of food delivery riders in KL and Selangor? Maybe it's just because they are so lowly paid. *Malay Mail | Breaking News, Malaysia, World, Lifestyle News*.

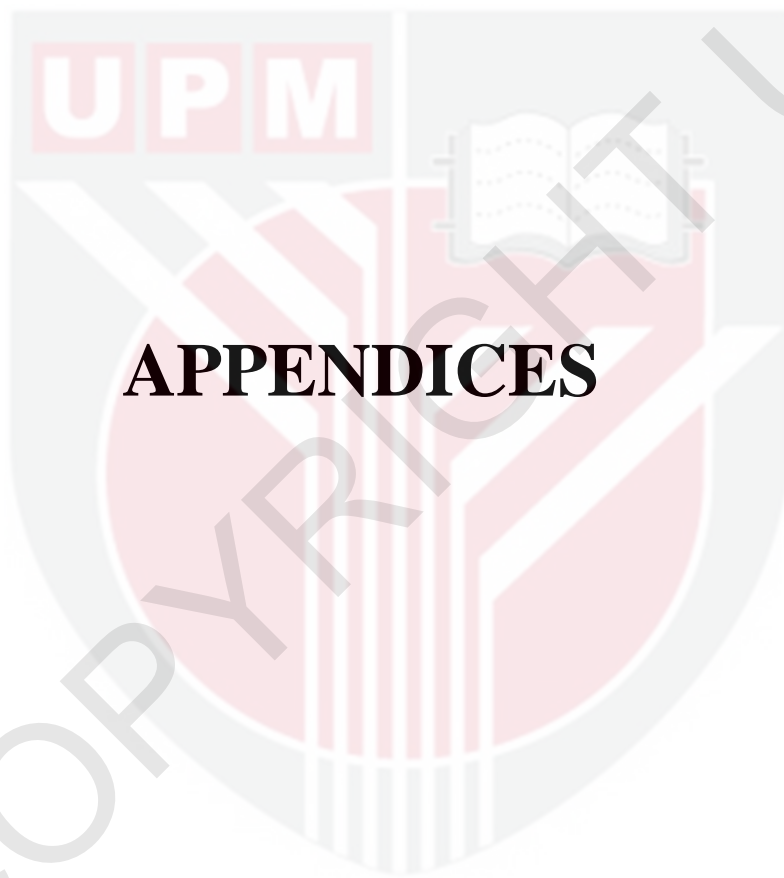
<https://www.malaymail.com/news/malaysia/2021/04/29/wondering-why-there-is-a-shortage-of-food-delivery-riders-in-kl-and-selangor/1970237>

Zainordin, N. H., Budiningsari, D., Jalambo, M., Wali, H., Sivaji, A., Choon, O. T., ... &

Omar, B. (2015). Knowledge Level of Calories and BMI of the Students of the National University of Malaysia. *Pakistan Journal of Nutrition*, 14(12), 931.

Zulkarnain, K., Ahasanul, H., & Selim, A. (2015). Key success factors of online food ordering services: An empirical study. *Malaysian Institute of Management*, 50(2), 19-36.





APPENDICES

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The image features a large, semi-transparent watermark of the Universiti Putra Malaysia (UPM) logo in the background. The logo is a shield-shaped emblem with a red and white color scheme. At the top left of the shield, the letters 'UPM' are written in white on a red rectangular background. The central part of the shield contains a stylized white book with a red spine, set against a red background with white vertical stripes. The bottom of the shield has a white base with red vertical stripes. The text 'APPENDIX A' and 'JKEUPM LETTER OF APPROVAL' is centered over the logo in a bold, black, serif font.

APPENDIX A
JKEUPM LETTER OF
APPROVAL

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM)

Date: 28 April 2022

Dear Prof./Dr./Mr./Ms.,

APPLICATION FOR JKEUPM ETHICAL CLEARANCE: APPROVED

With reference to the above, I am pleased to inform you that your application for ethical clearance for the research project entitled '**FACTORS INFLUENCING CUSTOMER SATISFACTION WITH ONLINE FOOD DELIVERY AMONG UNDERGRADUATE STUDENTS IN UPM**' has been approved.

The approval is **valid from 28 APRIL 2022 until 28 APRIL 2023**.

Please note that the official letter of approval will be issued as soon as possible. However, the ethical clearance is considered effective from the date of this email, and you may now proceed with your research.

Kindly remind the ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

Researchers should also complete a Study Final Report upon study completion. The form can be obtained from the Ethics Committee for Research Involving Human Subjects (JKEUPM) website (<http://www.tncpi.upm.edu.my/faildokumen>).

If you have any enquiries, please contact at number 03-97691244/1602.

Note: Please use this reference number for any transaction:- **JKEUPM-2022-215**

Thank you.

Yours faithfully,

Prof. Dr. Zamberi Sekawi
Chair
Ethics Committee for Research Involving Human Subjects
Universiti Putra Malaysia

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM)

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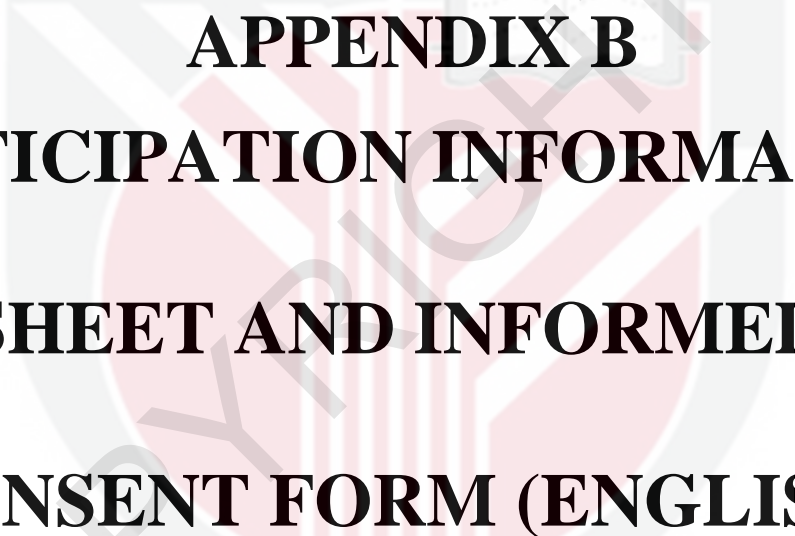
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Thank you.

Yours faithfully,

Prof. Dr. Zamberi Sekawi
Chair
Ethics Committee for Research Involving Human Subjects
Universiti Putra Malaysia



APPENDIX B
PARTICIPATION INFORMATION
SHEET AND INFORMED
CONSENT FORM (ENGLISH)



FORM 2.4: DESCRIPTION AND CONSENT OF RESPONDENT

Please read the following information carefully. If you have any questions, please forward them to the researcher.

1. TITLE OF STUDY

Customer satisfaction with online food delivery among undergraduate students in UPM

2. INTRODUCTION

Customer satisfaction is important in determining the improvements that need to be made in a company. This study aims to determine the factors that influence customer satisfaction in using online food delivery services. In addition, the study can add to the findings of previous studies and contribute to the body of knowledge. In turn, customer satisfaction can be enhanced by making the factors studied improved and enhanced by the online food delivery board. Data collection will be conducted through a questionnaire on GoogleForm. Only respondents who meet the criteria will be included in the study data.

3. WHAT DO YOU NEED TO DO?

If you agree to be the respondent of this study, you will need to fill in the eight sections of information and questions displayed on the link. The eight sections in the questionnaire ***include*** sociodemographics, weight status, customer satisfaction, information quality, price -saving information, time -saving information, effort expectation and nutritional knowledge. The questionnaire ***will only take*** 15 minutes. Your participation in this questionnaire is voluntary. You reserve the right to withdraw at any time without penalty or loss of eligible benefits to the participant.

4. WHO CANNOT PARTICIPATE IN THIS STUDY?

You may NOT participate in this study if you are (a) not a student of Universiti Putra Malaysia (UPM), (b) under the age of 19, and (c) not a user of online food delivery.

5. WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

a) TO YOU AS A PARTICIPANT?

If you participate in this study, you receive no rewards or benefits in the form of money. However, you can add knowledge related to nutrition and nutrition in daily life.

b) TO RESEARCHERS?

The data obtained from the study can be used in future writing and publication to help improve understanding in customer satisfaction with online food delivery in Malaysia. In addition, the data from this study can be used as a reference to the owners of food delivery companies in improving their quality and service.

6. IS IT RISKY?

There is no risk involved if you participate in this study.

7. WILL MY INFORMATION AND IDENTITY REMAIN CONFIDENTIAL?

Your information and identity are ***confidential***. Records identifying the participant will be kept confidential and will not be made publicly available, to the extent permitted by law; and that the identity of the participant will remain confidential in the event the study results are published; including limitations to the investigator's ability to guarantee confidentiality. The records obtained are likely to be reviewed by the Auditing Department of Universiti Putra Malaysia, and the Ethics Committee of Universiti Putra Malaysia (JKEUPM) for the purpose of ensuring that the investigation is conducted safely.

8. WHO SHOULD I CONTACT IF I HAVE ADDITIONAL QUESTIONS WHILE FOLLOWING THIS RESEARCH?

If you have any additional questions and inquiries while following this research and would like to know the results of this study, you can contact Muhammad Hilman Syamim bin Harun (student/researcher), Faculty of Medicine and Health Sciences, 200973@students.upm.edu.my; Dr Noraida Omar (senior lecturer/research supervisor), Faculty of Medicine and Health Sciences, 03-89472463, noraidaomar@upm.edu.my. Any information on rights including inquiries and complaints, please contact the Ethics Committee of Universiti Putra Malaysia (JKEUPM), 03-97691605, jkeupm@upm.edu.my

Please sign here if you have read and understood the contents of this page _____

9. CONSENT

I Identity Card No.
Address.....here
fore agree to participate voluntarily in the research mentioned above *(clinical study/drug trial/video recording/target group/interview/questionnaire) .

I have been given a thorough explanation of this research in terms of methodology, risks and complications (as written on the Respondent Information Sheet). I understand that I reserve the right to withdraw from this research at any time without assigning any reason.I also understand that any information relating to my identity will be kept confidential.

I am* interested / not interested in knowing the results of studies that involve me.

I agree/disagree for imei/photographs/video recordings/voice recordings to be used in any form of publication or presentation. (if applicable).

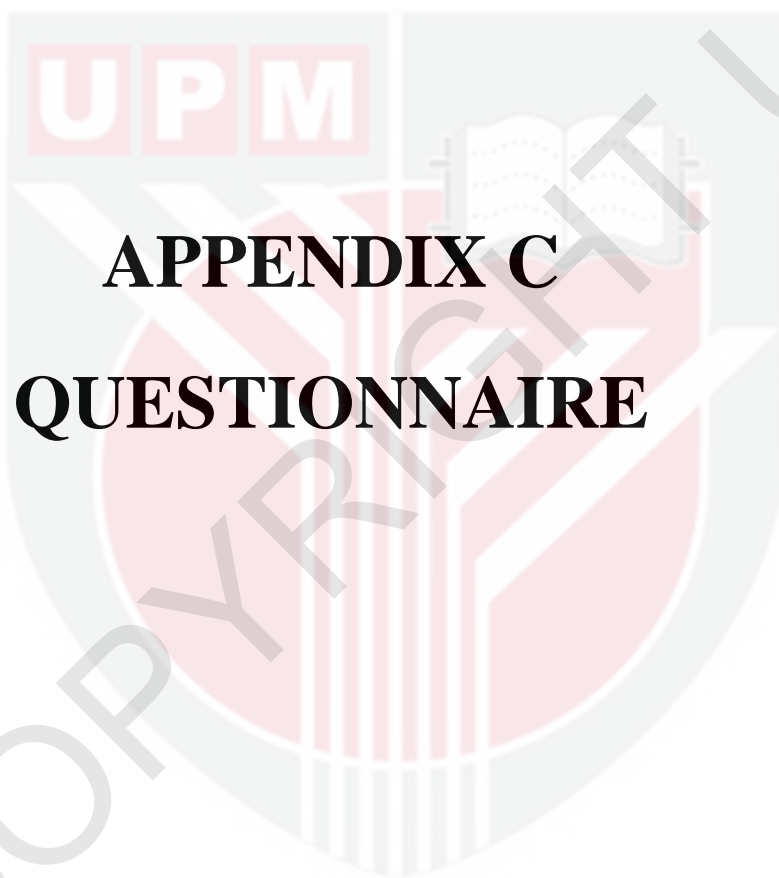
*delete where not applicable

Signature: Signature
(Respondent) (Witness)

Date : Name :
I/C Num.:

I confirm that I have explained to this respondent the nature and purpose of the research mentioned above.

Date Signature
(Researcher)



APPENDIX C
QUESTIONNAIRE

© COPYRIGHT UPM



1. I certify that I am 18 years old and above this year and voluntarily agree to participate in this research study. *

Mark only one oval.

- Yes
 No

Sociodemographic

This section has 4 items for assessing customer satisfaction. You are required to answer all.

2. Age *

3. Gender *

Mark only one oval.

- Male
 Female

4. Ethnicity *

Mark only one oval.

- Malay
 Chinese
 Indian
 Bumiputera Sabah/ Sarawak
 Other: _____

5. Marital status *

Mark only one oval.

- Single
- Married
- Divorced
- Widowed

6. Monthly household income group *

Mark only one oval.

- B40 (less than RM4,850)
- M40 (RM4,850 to RM10,959)
- T20 (more than RM10,959)

7. Faculty of study *

Mark only one oval.

- Fakulti Bahasa Moden & Komunikasi
- Fakulti Bioteknologi & Sains Biomolekul
- Fakulti Ekologi Manusia
- Fakulti Ekonomi dan Pengurusan
- Fakulti Kejuruteraan
- Fakulti Pengajian Pendidikan
- Fakulti Perhutanan dan Alam Sekitar
- Fakulti Pertanian
- Fakulti Perubatan & Sains Kesihatan
- Fakulti Perubatan Veterinar
- Fakulti Rekabentuk & Senibina
- Fakulti Sains
- Fakulti Sains dan Teknologi Makanan
- Fakulti Sains Komputer & Teknologi Maklumat
- Sekolah Perniagaan dan Ekonomi
- Other: _____

8. Year of study *

Mark only one oval.

- First Year
- Second Year
- Third Year
- Fourth Year
- Fifth Year

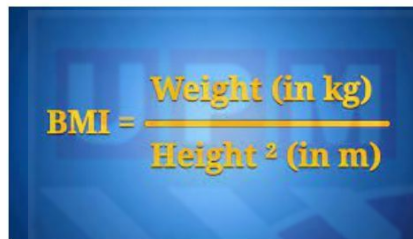
Body
Weight
Status

This section has 3 items for assessing body weight status. You are required to answer all.

9. Height (in m) *

10. Weight (in kg) *

11. Body Mass Index (BMI) by using the formula below. (BMI = weight/ (height x height) * *


$$\text{BMI} = \frac{\text{Weight (in kg)}}{\text{Height}^2 \text{ (in m)}}$$

Information
Quality

Online food delivery (OFD) is a type of service where order is made thru online and food being delivered to chosen location. OFDs that are available in Malaysia are GrabFood, Foodpanda, ShopeeFood and Tapau.

This section has 4 items for assessing information quality. You are required to answer all.

12. The online food delivery (OFD) provides me with relevant information to my needs. *

Mark only one oval.

1 2 3 4 5 6 7

strongly dissatisfied strongly satisfied

13. The OFD have accurate information. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

14. The OFD has reviews of customers. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

15. The OFD provides contact details of the restaurants. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

Price-saving
Orientation

This section has 3 items for assessing price-saving orientation.
You are required to answer all.

16. I enjoy offers in the form of vouchers, cashback and discounts from online food delivery (OFD) *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

17. I enjoy loyalty programmes launched by OFD *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

18. I refer the OFD to my friends to earn a referral bonus *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

Time-saving
Orientation

This section has 3 items for assessing time-saving orientation.
You are required to answer all.

19. Online food deliveries (OFDs) provide convenience by comparing prices from different restaurants *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

20. OFDs help me avoid traffic *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

21. OFDs help me avoid waiting at restaurants *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly satisfied

Effort
Expectancy

This section has 6 items for assessing effort expectancy. You are required to answer all.

22. Online food delivery (OFD) is easy to track the order *

Mark only one oval.

	1	2	3	4	
strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly agree

23. The stage of the order is clearly presented. *

Mark only one oval.

	1	2	3	4	
strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly agree

24. The are variety of restaurants in the online food delivery (OFD) applications *

Mark only one oval.

	1	2	3	4	
strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	strongly agree

25. Online food delivery (OFD) has good payment options *

Mark only one oval.

1 2 3 4

strongly disagree strongly agree

26. The online food delivery (OFD) must find my location without difficulty *

Mark only one oval.

1 2 3 4

strongly disagree strongly agree

27. Online food delivery (OFD) has easy app navigation to review options and selection of the food *

Mark only one oval.

1 2 3 4

strongly disagree strongly agree

Nutritional
Knowledge

This section has 25 items for assessing nutritional knowledge.
You are required to answer all.

28. 1. Calorie is a a measure of the energy in food *

Mark only one oval.

- Yes
 No
 Maybe

29. 2. The calorie required for the sedentary women is 1500 kcal *

Mark only one oval.

- Yes
 No
 Maybe

30. 3. The calorie required for active women is 2000 kcal *

Mark only one oval.

- Yes
 No
 Maybe

31. 4. The calorie required food active men is 2500 kcal *

Mark only one oval.

- Yes
 No
 Maybe

32. 5. Fat contributes the highest calorie of 9 kcal per 1 gram *

Mark only one oval.

- Yes
 No
 Maybe

33. 6. Protein provides 4 kcal per gram of food *

Mark only one oval.

- Yes
 No
 Maybe

34. 7. Carbohydrates contributes 4 kcal per gram of food *

Mark only one oval.

- Yes
 No
 Maybe

35. 8. One plate of fried rice contains higher calorie content than one plate of white *
rice

Mark only one oval.

- Yes
 No
 Maybe

36. 9. The recommended daily intake of sugar is 50 grams *

Mark only one oval.

- Yes
 No
 Maybe

37. 10. The higher the fat content in the food, the higher the calorie content *

Mark only one oval.

- Yes
 No
 Maybe

38. 11. The recommended servings for cereals and grains is 4-8 servings per day *

Mark only one oval.

- Yes
 No
 Maybe

39. 12. The recommended servings for fruits and vegetables is 2-3 servings per day *

Mark only one oval.

- Yes
 No
 Maybe

40. 13. The recommended serving protein is ½ to 1 servings per day *

Mark only one oval.

- Yes
 No
 Maybe

41. 14. The recommended servings for nuts and dairy products is $\frac{1}{2}$ - 2 servings *
per day

Mark only one oval.

- Yes
 No
 Maybe

42. 15. Teh peng contains higher calorie than teh O *

Mark only one oval.

- Yes
 No
 Maybe

43. 16. The calorie for one plate of white rice is about 240 kcal *

Mark only one oval.

- Yes
 No
 Maybe

44. 17. Roti bakar spread with jam contains higher calories than plain 'roti bakar' *

Mark only one oval.

- Yes
 No
 Maybe

45. 18. The recommended calorie intake for breakfast is approximately 400 kcal *

Mark only one oval.

- Yes
 No
 Maybe

46. 19. The recommended calorie intake for morning tea is approximately 250 kcal *

Mark only one oval.

- Yes
 No
 Maybe

47. 20. The recommended calorie intake for lunch is approximately 500 kcal *

Mark only one oval.

- Yes
 No
 Maybe

48. 21. The recommended calorie intake for teatime is approximately 250 kcal *

Mark only one oval.

- Yes
 No
 Maybe

49. 22. The recommended calorie intake for dinner is approximately 400 kcal *

Mark only one oval.

- Yes
 No
 Maybe

50. 23. Limau ais contains a lower calorie content that sirap limau *

Mark only one oval.

- Yes
 No
 Maybe

51. 24. Fried chicken contains higher calorie content than chicken curry *

Mark only one oval.

- Yes
 No
 Maybe

52. 25. Fried mee has lower calorie content than mee sup *

Mark only one oval.

- Yes
 No
 Maybe

Customer
Satisfaction

This section has 4 items for assessing customer satisfaction.
You are required to answer all.

53. I am very satisfied with the overall experience of using OFD *

Mark only one oval.

1 2 3 4 5 6 7

strongly disagree strongly agree

54. I believe I did the right thing to using OFD *

Mark only one oval.

1 2 3 4 5 6 7

strongly disagree strongly agree

55. I feel satisfied with the convenience provided by the online food delivery process *

Mark only one oval.

1 2 3 4 5 6 7

strongly disagree strongly agree

56. As a whole, I am happy with OFD *

Mark only one oval.

1 2 3 4 5 6 7

strongly disagree strongly agree

End of
Questionnaire

Thank you for answering the questionnaire. Your participation is greatly appreciated.

APPENDIX D
TURNITIN RESULT



FACTORS INFLUENCING CUSTOMER SATISFACTION WITH ONLINE FOOD DELIVERY AMONG UNDERGRADUATE STUDENTS IN UPM

ORIGINALITY REPORT

13% SIMILARITY INDEX	7% INTERNET SOURCES	7% PUBLICATIONS	8% STUDENT PAPERS
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PRIMARY SOURCES

1	Submitted to International Medical University Student Paper	5%
2	Pipatpong Fakfar. "Influence of service attributes of food delivery application on customers' satisfaction and their behavioural responses: The IPMA approach", International Journal of Gastronomy and Food Science, 2021 Publication	2%
3	Shweta Pandey, Deepak Chawla, Sandeep Puri. "Food delivery apps (FDAs) in Asia: an exploratory study across India and the Philippines", British Food Journal, 2021 Publication	1%
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