DETERMINANTS OF FOOD DELIVERY PLATFORMS THROUGH CUSTOMER LOYALTY TOWARD SUSTAINABILITY OF BUSINESS

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is 22232.

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DEDICATION

The final year project will sincerely present to our supervisor, Ms Kuah Yoke Chin who always give us help and encouragement throughout the process of doing this research. This research may not be completed smoothly without the guidance of our supervisor.

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
C	Convenience
CA	Cronbach's Alpha
CL	Customer Loyalty
CR	Composite Reliability
CV	Construct Validity
FinTech	Financial Technology
F-square	Effect Size
HTMT	Heterotrait-Monotrait Ratio of Correlation
IE	Indirect Effect
M	Sample Mean
O	Original Sample
ODP	Online Delivery Providers
OSP	Online Service Providers
PLS-SEM	Partial Least Squares Structural Equation Modelling
PV	Perceived Value
R-Square	Coefficient of Determination
S	Sustainability of Business
SME	Small and Medium Sized Enterprise
STDEV	Standard Deviation
T	Trust in Internet
TAM	Technology Acceptance Model
TE	Total Effect
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAR	Universiti Tunku Abdul Rahman
UTAUT	Unified Theory of Acceptance and Use of Technology
VAF	Variance Accounted For
VIF	Collinearity Statistic
WC	Website Content
WQ	Website Quality

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ABSTRACT

Food Delivery Service is one of on demand service where is provide convenience and profitability toward consumers, business owner and food delivery service platform. It also provides additional safety toward public in current COVID-19 pandemic. Customer can now obtain food & beverage in a much easier and convenience way with the help of food delivery platform. Food and Beverage business owner can also increase its customer base, popularity by joining various food delivery platform. As an on growing delivery service industry in Malaysia, it is beneficial toward food & beverage business and mass public to understand the reason behind its growth and drawbacks. This research is set to examine the relationship among Trust in Internet, Convenience, Website Quality, Website Content, Perceived Value and Customer Loyalty (mediator) towards Sustainability of Business. 392 respondents live in 3 targeted area with food delivery service experience were selected as target subject in this research. All variables were chosen to show a positive relationship through mediator towards sustainability of business. Convenience, Website Content, Perceived Value are proven to be statistic significant towards Sustainability of Business; while Trust in Internet, Website Quality are proven to be statistic insignificant towards Sustainability of Business. User friendly and sufficient information will lead to food delivery software increase its user bases; while sufficient and informative content, reasonable price will lead to food & beverage business have more reach to consumer.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

A research will be conducted about food delivery service through e-commerce by using a financial technology (FinTech) such as Food Panda, Grab Food, Dahmakan, Quicksent and more toward sustainability of business. The research background will be explained about the introduction of FinTech and discussed about the food and beverage e-system and the e-service in Malaysia. Next, the research problem will also be discussed to clarify about whether the trend of delivery system can help the business to sustain the profitability. The research objectives, research questions and research hypothesis are including so as to address the purpose of the research. Furthermore, research significance will be justified for the purpose of understanding the value and importance of this research. Last but not least, last section of Chapter 1consist of chapter layout and brief conclusion.

1.1 Research Background

1.1.1 Introduction of Financial Technology (FinTech)

In this global high-tech era, people or business use modern technologies to reinforce the standard of living and business. The definition of FinTech is a combination of Finance, Technology Management and Innovation Management (Leong & Sung, 2018). FinTech is one of the fastest growing artificial intelligence technologies uses to provide safer, efficient and effective financial services for the consumers and companies (Kagan, 2019). Moreover, part of the professionals was stated that a business can be more efficient and effective as the financial system can be enhanced through FinTech (Vlasov, Vovchenko & Setyawati, 2017). Most of the companies were already applied Fintech such as software technology, internet, mobile devices and others for the purpose to enhance the financial service (Sraders, 2019). This technology trend is already rapidly and widely evolving, most of the industry such as education, service, food and beverage and more were encouraged to apply this technology to manage the businesses operations, financial aspects and so on (Accenture, 2015).

The companies that using FinTech is forecast to be exceed more than 12, 000 around the world (Drummer, Jerenz, Siebelt & Thaten, 2016). FinTech is a very popular topic for the business industry in these few years, but the concept of the FinTech was developed in year 1866 (Arner, Barberis & Buckley, 2016). There are total three different time period of FinTech development. The time period from 1866 to 1967, FinTech 1.0 interlinked the technologies with financial service using Trans-Atlantic transmission cable such as Automated Teller Machine (ATM). In

addition, Fintech 2.0 which developed from 1967 to 2008 successfully increase the digital technology for people to communicate and transaction through online which can also be called as Internet. From 2008 onwards, the data technologies still improving until today. For example, most of the companies start to utilize the advanced technology to make payment before deliver their products and services such as online banking, electronic wallets, investment, food delivery and so on.

Puschmann (2017) was stated that most of the transaction can be done through online, therefore, businesses can transact globally without facing any customers. Besides, FinTech allows people to transfer money or make payment in a more security, convenience and efficient way (Klein, 2016). For example, electronic payment is one of the Fintech such as bank transfers, debit and credit cards and electronic wallets such as Touch and Go, WeChat Pay, Apple Pay, Google Wallet, Grab, Food Panda and so on. The market of mobile payment in year 2019 was already around $1 trillion (Statista, 2019). Nowadays, it is very popular for all the business and consumers because everything is purchasable without bringing any cash and the risk of losing money and being robbed will be decrease. Furthermore, another advantage of using FinTech to enhance the payment system can helps consumers to save a lot of waiting time (Klein, 2016). For example, consumers could shop through online they do not have to travel to shopping center and queue up for purchasing the goods and services.

1.1.2 E-System Towards Food and Beverage Industry

Food is an essential to every mankind, thus food and beverage industry is the basic and important to every nation. A food industry covers food supply, producing,

harvesting, processing, packing, transporting, distributing, consuming, and disposal. Food and beverage industry are one of the world most dynamic economic sectors and it change or growth rapidly (Sadiku, Musa & Ashaolu, 2019). The food and beverage market also segmented into class and geography. Classification of food and beverage market are meat, bakery & confectionery and seafood, alcoholic – beverages, frozen and fruit & veg, syrup, dairy, tobacco products, non-alcoholic – beverages, seasoning, oils, & general food, grain products, and pet food. Meat, poultry, seafood have largest share among all. Food and beverage industry also segmented by geography into North America, South America, Africa, Eastern Europe, Western Europe, Asia-Pacific, and Middle East. Asia Pacific which Malaysia is included, have the largest share in global market.

In recent years, artificial technology had transformed the way of human's life style and the way of companies operate the business. Online Service Providers (OSP) is a part of FinTech that uses to connect among the consumers or business through internet (Computer Business Research, 2019). The OSP was already became a necessary technology that is unavoidable for people in daily life. There are around 10, 000 OSP worldwide and United States occupied most of the OSP (Computer Business Research, 2019). Apart from that, most of the small and medium-sized enterprise (SME) start to apply the idea of OSP in order to compete with those larger companies. For example, China have the largest national markets due to they start invention and lead the OSP into their market.

There are a lot of OSP today, it provides different type of online services that brings a lot of benefits to consumers (Business Queensland, 2019). First for all, most of the online businesses are targeted globally and it operates all day. Secondly, doing online business can helps owners to minimize the costs. Thirdly, consumers do not have to travel across other countries to purchase goods and services,

consumers just have to access to websites and order it because online service offer a delivery service in order to make consumers more convenient and save time. For example, Lazada, Taobao, Zalora, Amazon and more provide the online shopping and e-business. In addition, AirAsia, Expedia, Grab, Uber and more provide online transportation booking.

1.1.3 Food Delivery Service

Rivera (2019) have studied that Online Delivery Providers (ODP) is a third party between the seller and buyer to deliver the products and services. ODP is a part of OSP, without OSP the online delivery service cannot be work due to OSP is a major technology that connect the business or consumers via internet. ODP can make human's life easier and mitigate the daily works such as order foods through delivery applications can save time spend and it is very convenience for the people that are busy for work or study. For instance, mobile applications such as DahMakan, QuickSent, GrabFood, Food Panda and more use to provide food delivery services.

Meanwhile, Rivera (2019) claimed that the delivery industry who apply ODP have increased to around 50 million users. Based on the statistic provided from Statista Research Department (2019), food delivery revenues had increased to US$152 billion across the world such as China, Germany, US, France, India and so on. ODP has become the most popular technology for food and beverage industry and the competitions are intense among the competitors due to it creates a chance for the delivery platforms to be a third party between consumers and restaurants (Muller, 2018). Now is the age of technology, the competitions are intense today because of the current demand of consumers and competitors seek the chances to

maximize the profit, minimize the cost and build a loyal relationship towards customers with an efficient delivery services (Kimes, 2011).

Food delivery applications allows consumers to order foods and beverage via website or mobile application and there are a lot of selection from different restaurants who have partnership with them. Therefore, consumers have more choices of food compare to the other platform. Food delivery platforms have a lot of riders to deliver the food so as to enhance the consistency as well as minimize the delivery time (Shona, 2016). Of course, a service of deliver the orders straight to consumers' doorstep will be provided. Food delivery service also offer an accurate food tracking and feedback form for their consumers (Shona, 2016). The purpose of food tracking is to inform the customers know where the current delivering location and the time left to reach the destination. Last but not least, the reviews from customers by filling the feedback form can help the company to be aware of weaknesses in order to improve themselves.

Foodpanda is the top delivery platform compare to the other platforms and consists of a lot of competitive advantages compare to the other competitors because their apps are easier to use, the quality of the apps is also preferable and the delivery service effective and efficient (Shona, 2016). Besides, the restaurants that have partnership with Foodpanda were exceed more than 115, 000 and it had increased over $310 million since 2012 (Chan, 2018). Press Team (2016) indicated that Foodpanda was acquired by Delivery Hero, and it is leading the food delivery industry worldwide and the statistic showed the number of orders of Foodpanda worldwide had reached 22.6 million in 2015 (Statista Research Department, 2017).

1.2 Research Problem

In worldwide aspect, food delivery market consists of €83 billion which shows that the industry has already matured in most countries across Americas, Europe, Asia, Europe and etc. with growth of 3.5 percent annually. The traditional ways of delivery which is placing order directly from customer to restaurant and delivery made directly from restaurant to doorway used to have huge market share. But like any other sector, the market is changing and evolving due to rising digital technology. Consumer are currently ordering through various website and apps and they are no longer have to deal technical difficulty as it is being handle by third party food delivery service. Based on the research, traditional delivery takes up a constant amount of 80% to 90% from year 2011 to 2014. Then, online delivery service started to take up rapidly from 20% to 60% in the following 6 years. This indicate that online market penetration has grown further and its market had becoming more mature around the globe. Various country in Europe such as Sweden had 56% and Australia had 43% of online food deliver market penetration, while Asia country such as Malaysia is only at its beginning of growth cycle (Hirschberg, Rajko, Schumacher & Wrulich, 2016).

According to Temasek and Google, Southeast Asia food delivery industry is stated at 2 billion USD in 2018 and expected to hit 8 billion USD in 2025. Indonesia had the biggest market share of 0.9 billion in 2015 to 3.7 billion in 2018 and expected to have 14 billion in 2025 among the countries. Then, Singapore come in second to have 0.8 billion in 2015 to 1.8 billion in 2018 and expected to have 4 billion in 2025 in the food delivery industry. Thailand also have similar result of 0.4 billion in 2015, 0.7 billion in 2018 and expected to have 4 billion in 2025. Malaysia stated to have generated only 0.3 billion in 2015; increase to 0.6 billion in 2018 and

expected by Temasek and Google to have 4 billion in 2025. Finally, Vietnam and Philippines shown the result of 0.3 billion in 2015, 0.5 billion in 2018 and expected 3 billion in 2025. Malaysia's result is fairly small compare to countries such as Indonesia, Singapore and Thailand while only surpass Philippines and Vietnam by 0.1 billion (The ASEAN Post Team, 2020). This result shown that Malaysia online food delivery industry is still small and have lower penetration compare to other SEA countries and in worldwide.

Malaysia also had a spike in food delivery service industry during 2017 with many foods delivery company starting up, but it quickly slows down resulting from death of those start-up and slowdown of investment. As an example, different comments regard of late delivery, order cancelation and bad experiences can still be seen on one of the food delivery service in Malaysia, Foodpanda. But balancing healthy company growth and maintaining excellent customer experience is not an easy task in Malaysia (Milo, 2018). Malaysia have unpredictable weather conditions; random rainy season can be bad for food delivery service. Heavy traffic and accidents can happen during down pour thus affect the efficiency of schedule delivery. There is also new challenge for food delivery service company when supply (restaurant, rider, coverage) is not equivalent to demand (customer, order). Food delivery service also have the tendency to only rise in urban cities such as Singapore, Berlin, New York and etc., same situation happen in Malaysia as the service is mostly active in Kuala Lumpur and Klang Valley. Expending geographical location coverage while maintaining high demand and supply delivery is always a challenge for online food delivery industry as well as problem to expand in Malaysia.

1.3 Research Questions

1. To examine the significant relationship between customer loyalty and sustainability of business.
2. To examine the significant relationship between trust in internet towards customer loyalty.
3. To examine the significant relationship between convenience towards customer loyalty.
4. To examine the significant relationship between website quality towards customer loyalty.
5. To examine the significant relationship between website content towards customer loyalty.
6. To examine the significant relationship between perceived value towards customer loyalty.
7. To examine the mediates relationship between independent variables (trust in internet, convenience, website quality, website content and perceived value) and customer loyalty towards sustainability of business.

1.4 Research Objectives

1.4.1 General Objectives

This purpose of this research project is to examine the determinants of food delivery through customer loyalty towards the sustainability of business in Kuala Lumpur, Selangor and Perak.

1.4.2 Specific Objectives

This study is to analyze whether the independent variables such as trust in internet, convenience, website quality, website content and perceived value can significantly affect the sustainability of business through customer loyalty.

1.5 Research Hypothesis

1. H_0: There is no significant relationship between customer loyalty and sustainability of business.

   H_1: There is significant relationship between customer loyalty and sustainability of business.

2. H_0: There is no significant relationship between trust in internet towards customer loyalty.

   H_2: There is significant relationship between trust in internet towards customer loyalty.

3. H_0: There is no significant relationship between convenience towards customer loyalty.

   H_3: There is significant relationship between convenience towards customer loyalty.

4. H_0: There is no significant relationship between website quality towards customer loyalty.

   H_4: There is significant relationship between website quality towards customer loyalty.

5. H_0: There is no significant relationship between website content towards customer loyalty.

   H_5: There is significant relationship between website content towards customer loyalty.

6. H_0: There is no significant relationship between perceived value towards customer loyalty.

   H_6: There is significant relationship between perceived value towards customer loyalty.

7. H_0: There is no significant mediates relationship between independent variables (trust in internet, convenience, website quality, website content and perceived value) and customer loyalty towards sustainability of business.

   H_7: There is significant mediates relationship between independent variables (trust in internet, convenience, website quality, website content and perceived value) and customer loyalty towards sustainability of business.

1.6 Research Significance

The advancement of technology has led to the development of food delivery platforms. In most recent years, it has growing in a fast pace due to most of the people ordering meals by using the food delivery service to save the waiting cost. The number of users who are using food delivery platforms have steadily increased and the order placed from the food delivery platforms have reached a fairly large amount at 22.9% (Yeo, Goh & Rezaei, 2017). The statistics of Lee, Sung & Jeon (2019) showed that the restaurants in Los Angeles have reached a revenue grow of 3-35% after partnering with food delivery platform as there is an increase of 200-250 orders per week for the restaurant. It is obviously that the food delivery platform has benefited the customer as the order placed is increasing and it is benefited restaurants as well. From the research project, the purpose is to examine the importance of partnering food delivery platform for the sustainability of business. through customer loyalty.

Firstly, the changes in the era nowadays have caused people relying on the technology and convenience (Goh, Ng, Wong & Chong, 2017). The number of Internet users are growing sharply and predicted to over more than 1.9 billion which is 30% of the population of the world in the year of 2012 (Lien, Wen & Wu, 2011). The innovation of food delivery platform has caused people depending on the technology and convenience by ordering food through food delivery platform by just one click. This is also the reason behind why almost all the restaurants nowadays choose to outsource the delivery services to third party platform like Foodpanda, Grab Food, DahMakan and others. For example, the traffic problem always exists when you want to dine in outside especially at the dinner and lunch hour in Malaysia. Food delivery platforms have significantly benefit to not only the

medium-large restaurants but also the start-up restaurant. The restaurants are able to increase exposure on the platform and hence increase businesses' sales and revenues. Other than that, users of the food delivery platform could give a feedback and rate about the taste of food delivered, timeliness of the estimated food preparation and package of the food. By this way, restaurants can make improvement on the weaknesses of the business in order to gain long-term advantage.

Furthermore, it is important to develop a user friendly, high quality and trustworthy application. Food delivery platforms is playing a significant role in food and beverage sector as if the information they uploaded on their application is not accurate and reliable, their application will be boycotted by users and this will indirectly cause the restaurants which outsourced their delivery services to the platform suffer a great loss as the users will feel that it is not worth trusted. Therefore, proposing a high quality application is a must for the food delivery platforms as this is not only benefited to restaurants but also themselves as this is a motivation for users to keep on using the services provided and also help to retain customer loyalty towards the restaurants (Suhartanto, Dean, Leo, & Triyuni, 2019). For example, users can also give feedback to the food delivery application if consumers found that the application is not that convenience or lack of choices and the food delivery platforms must take immediate action to solve the problem in order to motivate them to use the services provided by the platform.

Moreover, most of the customers choose to use food delivery application as it eases their lives. When the demand for food delivery services increases, the advantage that customers can get is also increasing. For example, every customer would rate and give feedback toward the foods of a restaurant after the food delivered to the consumer's doorstep. Customers can check the review of the

restaurants before make choices of various restaurants to order. Customers also can avoid choosing those restaurants which only rated lower than 3.0 which the highest rating is 5.0, so that they will not waste their money on the low rating restaurants. The improvements of restaurants and food delivery platforms will be definitely beneficial to customers due to customers are the one who will enjoy the services provided by the platforms. The customer will be loyal once ordered from the food delivery platforms and get exactly what had ordered through the information provided by the platforms so the possibility to repurchase and recommend the platform to other users would directly increase and hence increase the profit of the restaurants (Suhartanto, Helmi, Tan, Sjahroeddin & Kusdibyo, 2019).

The variables that had been studied through past journals such as trust in internet, convenience, website quality, website content and perceived value will positively affect the customers. The services provided by the food delivery platforms will directly influence the restaurants as customer loyalty can affect the sustainability of a business. Therefore, the food delivery platforms play a significant role between the restaurants and customers.

In short, this study could help food and beverage industries and food delivery platform to enhance the performance and indirectly bring positive effect to the society as a whole. This study also highlights the significance of the improvement and development of food delivery platforms.

1.7 Chapter Layout

Chapter 1: Overview of Study

Subject of study will be introduced and briefly discuss. Secondly, the main idea of the research background and research problems will be provided by studying the past journals. In addition, it includes the research questions, research objectives and research hypothesis to inspect the relationship between variables. The research significance will further clarify the validity of the study. An ending will be summarized as a final part of Chapter 1.

Chapter 2: Review of Literature

In Chapter 2, the previous reviews and analyses of the research issues will be discussed more specifically. Besides, the explanation of the theories applied in our research as the part of underlying theories. By studying past journals, the explanation review of reliable dependent variable, independent variables and mediator are inclusive. A conceptual diagram of the relationships among both the variables and mediator will be drawn in the part of conceptual framework. Last but not least, the hypotheses development will explain the relationships between the variables including the mediator and finally come to an ending of Chapter 2.

Chapter 3: Methodology of Study

The discussion of the methods used in the research will be carried out. The research design contains the exploratory, descriptive and causal research will also be explained. Other than that, the sampling design will be carried on to justify the sampling frame, technique and sample size collected in this research. The data collection methods is primary data, thus the detail explanations of research

instrument used and the preliminary works were being highlighted. Lastly, the proposed data analysis tool will be proposed about the analysis of data and statistical techniques applied in this research and the conclusion will be made as the last part of Chapter 3.

Chapter 4: Data Analysis

Chapter 4 discussed about interpretation of final outcomes regarding to the research questions and hypotheses that had been conducted. Moreover, the demographic characteristics of the respondents will be analyzed and applied in the part of descriptive analysis. Inferential analyses will be further examined about the relationship between variables to generate the conclusion with target populations' features from proposed data. Therefore, the Partial Least Squares Structural Equation Modeling (PLS-SEM) is uses to apply in this chapter.

Chapter 5: Discussions, Implications and Conclusion

The first part of this chapter will begin with the argument of main discovery to verify research objectives, hypotheses conducted in previous chapter. Apart from that, implication of the study will provide the theoretical implications for policy makers. The next part will be continued to describe the limitations and recommendations for the future studies. Lastly the overall conclusion will be summarized to bring this research to the end.

1.8 Conclusion

Overview of Research background, Research problem, Research question, Research objectives, Research hypothesis, Research significant, and Chapter layout had been discussed. Research background introduces Fintech, E-system towards food and beverage industry, and Food Delivery Service. Research problem stated about contradicting research between relation on online food delivery service and sustainability of business. Research question and objectives address purpose of investigation. Finally research significant stated value of this study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In this chapter, the reviews as well as the analyses with issues of the study that have been formed in Chapter 1 will be further discussed. First of all, a discussion of underlying theories which about the explanation of theories that we applied in our study will be introduced. Besides, a highly trusted journals have been fully reviewed and studies about the dependent variable and independent variables will be developed as the second part of Chapter 2. A conceptual framework was conducted for the purpose to make it more clarify about dependent and independent variables' correlations. Last but not least, the hypotheses development will justify every relationship between the variables and a conclusion will be made as the last part to summarize the Chapter 2.

2.1 Underlying Theories

2.1.1 Technology Acceptance Model (TAM)

The theory of Technology Acceptance Model (TAM) was proposed by Fred Davis in the year 1989 to explain or predict the reasons that influence the acceptance of an individual towards the new system. According to Vuković, Pivac & Kundid (2019), TAM is one of the models that are mostly utilized to study an individual's acceptance toward new technology system. There are two primary determinants in the model which are perceived usefulness and perceived ease of use. As defined by David, perceived of usefulness is the level which an individual trusted that by using a technology system will improve their performance. Besides, perceived ease of use is the level an individual will feel that using a new technology will be simple (Lai, 2017). Other than the two main determinants, TAM included other factors such as attitude, behavioral intention and the impact on purchasing decision also have a significant effect on food delivery services (Karulkar, Pahuja, Uppal & Sayed).

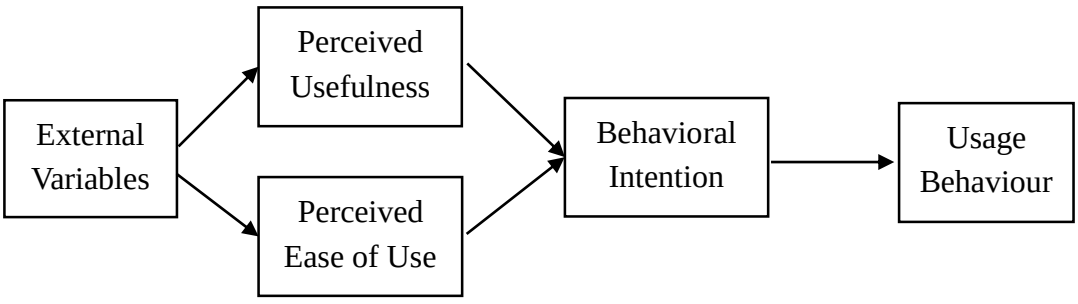


Figure 2.1: Final version of Technology Acceptance Model (TAM)

Source: (Vankatesh and Davis, 1996)

Venkatesh and Davis had introduced the evolved theory of TAM as shown in the Figure 1. It has concluded more details explanations about the reason behind that the system would be useful at three different timing which are before the system was implemented, one month after the system implemented and three months after the system implemented (Lai, 2017). The final version of TAM had included a new variable which is behavioral intention that considered as a factor that would directly affect the perceived usefulness of the system.

Davis (1986) mentioned that the behavioral intention was being mediated by attitude. The final version of TAM was excluded attitude but actually the TAM included attitude in it at the beginning as he assumed that attitude was the important factor that affect the users' acceptance toward new technology. However, due to the reason that attitude is not included in the final version as it did not fully mediate the other two determinants which are perceived usefulness and perceived ease of use (Lai, 2017).

Davis had conducted several studies which the perceived ease of use and perceived usefulness are important to assume the behavior of an individual. TAM explains that the perceived usefulness and perceived ease of use could explain how simple or difficult a person can accept to adopt new technology (Prabowo & Nugroho, 2019). Davis suggested that a person will have high tendency to adopt the system if the given system was perceived useful. Ajibade (2018) found that Technology Acceptance Model has assumed that appliers likely to apply a technology which is beneficial.

Website quality, website content and trust in internet are the factors that directly affect the perceived ease of use and perceived usefulness of a system as the online

food delivery services must be operated through apps or website. According to Lee, Lee & Jeon (2017), the website quality or the website content is the main concern for customers purchasing decision. The website content which provided by the restaurants have a good effect on the perceived usefulness as it is a must for food delivery apps to provide accurate and real information to consumers. If the content provided is not reliable, this will directly influence the customer purchasing decision. The website quality also influencing the perceived usefulness. For instance, the stability and safety of the system is important as the consumers make payments online and have provided their personal information, they are more exposed to risk so that a stable system would influence their purchasing decision (Lee et al., 2017). (Lee et al., 2017) shown that the perceived ease of use would have a positive influence on perceived usefulness and attitude toward the use of system. All of these factors will directly influence the behavioral intention as when customers found the information provided is not reliable, or the apps or payment system is not secured, they will lose intention to use the apps. In contrast, when they feel that the use of the apps has ease their lives, they will continue to use it.

2.1.2 Theory of Planned Behavior (TPB)

Theory of planned behavior (TPB) proposed by Ajzen (1991) is the model most widely used in explain, analyze human behavior. It is applied to various field as well as sustainability which is related to this research model. This theory is also a new theory inspired Theory of reasoned action (TRA). In TRA, if one evaluates positive (attitude) behavior, and if their significant other also want to perform (subjective norm), this is a result of high intention (motivation) which make them likely to do so. Many studies also confirm positive relation among attitude and

subjective norm with intention. However, counter argument against it also had been proposed due to limitation and intention does not always lead to actual action. Ajzen then introduce TPB by adding perceived behavioral control to cover non act of willing behavior for predicting intention and actual actions. This model has been adopted by many researchers to find continuation of using IT such as online banking, apps store and etc (Yeo, 2017). According to TPB, behavior intention and perceived behavioral control guided human behavior, while attitude towards behavior, subjective norm, perceived value together determine behavioral intention (Liao, 2007).

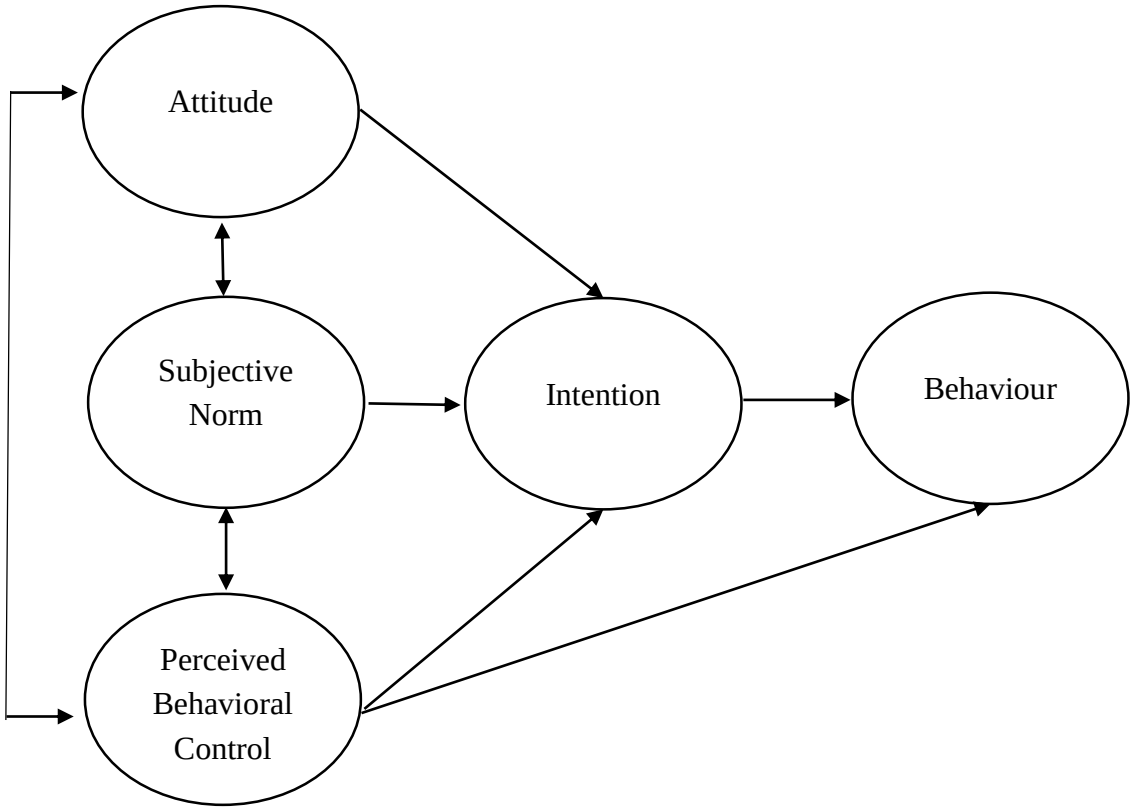


Figure 2.2: Theory of Planned Behaviour

Source: (Ajzen, 1991)

TPB suggest that a consumer's attitude towards certain behavior can be viewed

as predictive of the person intention to interact in that behavior. Attitude affects a person perceive a behavior as favorable or not. Increasing favorable of a person attitude can lead to increasing probability of engaging in that certain behavior (Hansen, 2008). In the research, convenience and perceive value can be categorized under attitude as one's evaluations or attitude to behavior are determined by its available belief regards behavior. Subjective norm or social norm suggest that individual perception about certain behavior can be influenced by others such as parent, spouse and friends. (Amjad, 2009).

2.1.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed by Venkatesh in 2003. Purpose of this theory is to study user behavior towards internet usage. It is a unification theory which had used the concepts from various theories and models regarding the technology acceptance such as the Technology Acceptance Model, Theory of Reasoned Action, the motivational model, Theory of Planned Behaviour, combined TAM-TPB, the model of Personal Computer utilization, innovation diffusion theory and social cognitive theory (Alomary & Woollard, 2015).

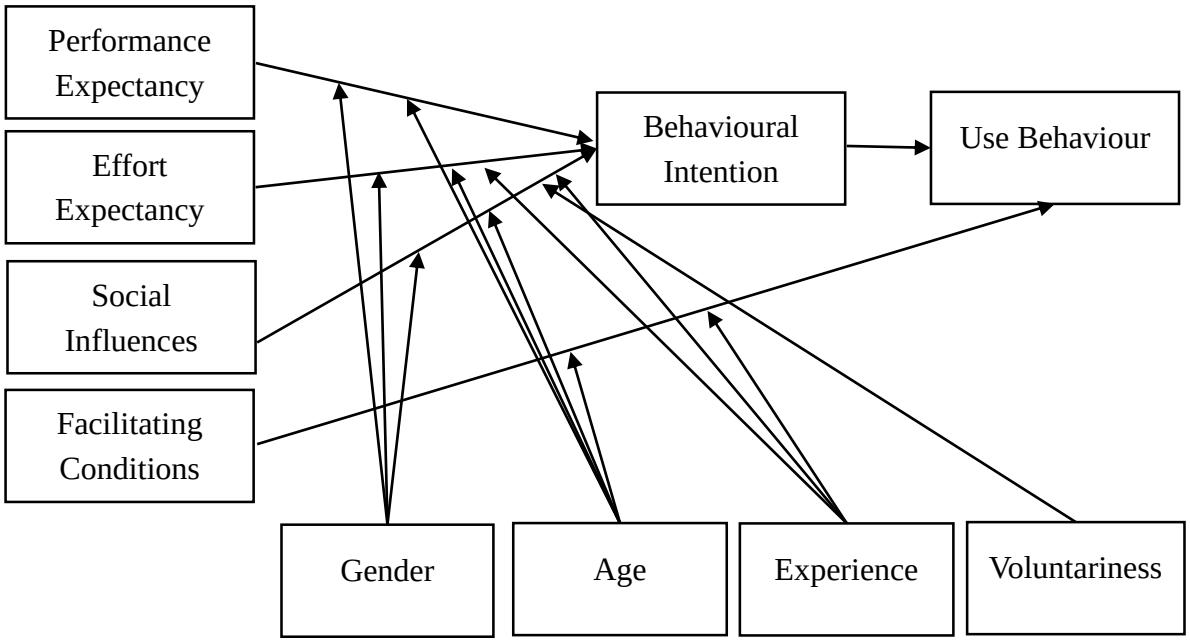


Figure 2.3: Unified Theory of Acceptance and Use of Technology (UTAUT)

Source: (Venkatesh, 2003).

The primary factors of usage and intention of UTAUT are performance expectancy, effort expectancy, social influence and facilitating conditions. It also has gender, age, experience and voluntariness of use included as their four moderators (Alomary & Woollard, 2015). In addition, Venkatesh, Thong, & Xu (2012) found that age and gender are associated with the consumer technology innovativeness. As when there is new technology, the younger have the strong tendency to use the new technology.

Karulkar et al., found that UTAUT model can be used to study the online food delivery services. Venkatesh (2003) stated performance expectancy reach level of users expect about adopting such system bring advantage to them. Williams, Rana & Dwivedi (2015), had examined the relationship among performance expectancy and behavioral intention by conducting 116 studies, and resulted that 93 studies which is 80% of the studies had confirm that there is a significant relationship

between them.

Effort expectancy is stated as the ease to use in relation with adoption of online food delivery services. It also constructed from variables of the TAM theory (Karulkar et al.). The studies from Williams et al., (2015) had shown that 58% of the studies shown that there is a significant relationship between effort expectancy and behavioral intention.

According to Karulkkar et al., social influence is the level to which a user is influenced by other individual in their social circle which change him or her to use the online food delivery services. 86 out of 115 studies from Williams et al., (2015) had shown the significant relationship between the social influence and behavioral intention. Facilitating conditions is defined as the level to which an individual believes that there is technical support available when in need in the use of online food delivery services. Karulkar et al. mentioned that from the research of Williams et al., (2015), 33 out of 48 studies had shown that the relationship between facilitating condition and behavioral intention is found to be significant.

In conclusion, effort expectancy is the most significant variables among the other four variables. From the finding from Williams et al., (2015), we can assure that the users prefer online food delivery services at times given ease of use so that online food service must be simple for the users and keep it less time consuming. The second significant variables which is facilitating conditions. The online food delivery services provider must ensure that there is low possibility of the apps break down (Karulkar et al.). While the third dominant variable which is performance expectancy. When the user believes that using online food delivery services will benefit them. Otherwise, they will not adopt it.

2.2 Review of Variables

2.2.1 Trust in Internet

Giovanis & Athanasopoulou (2014) found that a lot of consumers still prefer using the traditional style of purchasing pattern. Therefore, the e-commerce services, especially in food industry would facing challenges in order to expand the customer base. Consumer would get the better service by conducting e-commerce than using traditional one, such as involve in a cheaper transaction costs and time consuming in term of searching product, comparing price and transportation fees. E-commerce service would also offer the business an opportunity to "upload" their businesses by using online platform in order to sell 24/7 to global customer, reducing operating cost, increasing the product turnover and saving their time.

Trust acts as an essential role in exchanges that are characterized by great performance ambiguity, significant consequentiality and great interdependence. The positive significant relationship between trust in internet and customer loyalty point that they believed the higher the trust in internet may lead to higher repurchase intention (Giovanis & Athanasopoulou, 2014). The researcher, Mustafa (2011) said the quality of information is provided by website can effectively affected the purchasing intention. If the information provided is reliable and accurate, it does enhance the customer's trust towards the restaurant and it will lead to customer loyalty positively. This is because when customers gain trust towards the service, the feeling of being treated fairly will enhance their confidence towards the restaurant.

However, Eid (2011) proposed a weak relationship between trust in internet and customer loyalty. The appropriate response of the customers probably reduce uncertainty and increase trust towards the online provider (Liang & Chen, 2009) while Kim et a.l., (2009) failed to show a relationship between trust in internet towards customer loyalty. Kassim & Asiah (2010) also said that the relationship between trust in internet and customer loyalty cannot be confirmed since there is a different type of loyalty which are behavioral loyalty and attitudinal loyalty. In oppose, Ivanauskiene & Volungenaite (2014) studied that it is an insignificant relationship between the reliability of internet and customer loyalty. Cry (2008) found that trust in internet is strongly related to the loyalty in United States, Germany and China. In contrast, there showed a weakly relationship in Canada. Lastly, Kranias & Bourlessa (2013) had proved that reliability have no any relationship towards the customer loyalty.

2.2.2 Convenience

People mostly having their meal at their preferred restaurant before the mobile devices were introduced (Daud & Ho, 2019). Nowadays with the furtherance of internet, the reason most of the consumers prefer to purchase food via internet is because of the convenience. As observed by Goh, Ng, Wong & Chong (2017), most of the young and modern consumers labeled as “lazy” because of the convenience and technology. The consumer just makes few simply steps to click on the mobile devices, after that the consumer order will been placed. Moreover, when the consumer does not have any plans on where to it, online food delivery is the best choice to choose it.

Result show that transaction, access, decision, post-benefit and benefit convenience is positively impact to customer satisfaction and customer loyalty. The convenience of the service would lead to a repeating purchase behavior intention. The online business providers have to know that the positive implications of convenience to customer loyalty (Kaura, Prasad & Sharma 2015).

Based on the research of Hossain and Suchy (2013), the relationship between convenience and customer loyalty, the result of the study shows that it has weak but positive correlation with customer loyalty. This study shows that convenience experienced by the customer could influence the customer loyalty.

However, the result supported by Christodoulides & Michealidou (2010) stated that the result is indirect and have unclear relationship between convenience and customer loyalty. Consumers are more motivated to use the service which provided more convenient experience, but even they satisfied with the online provider, it may not necessarily for them to be loyal.

2.2.3 Website quality

E-commerce service has grown rapidly worldwide, especially the food industry is also showing a steady growth (Serhat Murat Alagoz & HalukHekimoglu, 2012). Although the e-commerce food delivery service has become popular in new era, but the nature of market is still difficult to understand (Yusra & Agus, 2018). However, the website quality is one of the essential criteria to compete with others food delivery website to having advantage compete with competitors (Caro & Garcia,

2007). The website quality is crucial to compete with others not only because it is the primary assets that customer will looking for but also giving the first impression to the customers regarding the website value and the determinants to show that the status of the food delivery service app (Godwin, Kallol & Peeter, 2010). The website provider must be fully understood the consumers' requirement in term of the website quality to achieve the customer loyalty to survive in this competitive market.

The studied of Chang et a.l. (2009), Cronin et a.l., (2000) & Oliver (1997), there is a positive impact between website quality and customer loyalty. Their research stated that there is a moderating impact if customer would satisfy with the website quality and they would increase their purchasing power by using the food delivery service app. The quality of the website has become key indicator towards the performance of food delivery services app and how well the app is likely to satisfied the customer in order to gain the customer loyalty (King & Liou, 2014). Other than that, Wolfinbarger & Gilly (2001) stated that the website quality and customer loyalty are positively influenced and the statement supported by Goh, Ng, Wong & Chong (2017) as they stated that website quality is the most important variable to affect the customer's preferences. Maintain that a high-quality website is very crucial for retaining customer, motivating customer to visit the website frequently and maintaining their continued loyalty (Jeon & Jeong, 2017)

However, the research result of Che, Miin & Chung (2010) is contrary to Chang et a.l. (2009), Cronin et a.l., (2000) & Oliver (1997). The data collected through internet questionnaire in Taiwan, argued that the customer loyalty to the food delivery service app is showing a negative impact. Even the satisfied customers are unlikely to patronize the delivery service, due to the quality of website not the most important criteria to them and they feel not getting the best

value for their expense.

2.2.4 Website Content

Since there is an increase usage and incorporate of internet in most of the businesses, e-commerce service could be a medium to conduct a business even in food industry. Innovative and creativity of the website can be resulted in the increase of food ordering and leaded to a growth in the internet business. Most of the restaurants are creating their own websites, mobiles app or order using text message in order to ease their customer (Goh, Ng, Wong & Chong, 2017). Website content is the layout and the presentation of the business information and functions that shows the business existence and the public image and is to assume how the customer perceives the website quality. The website content should be included the dimensions of information quality, appropriateness of the amount of information, type of media, presentation mode, size of image and overall appearance of the website (Godwin, Kallol & Peeter, 2010).

Godwin, Kallol & Peeter (2010), they argue that the content of website is positively influence customer attitudes towards the quality of website content hence lead to the continuous usage of the website. An effective content of the website would make the web-based service more realistic and attractive to their customer. Other than that, the style and the size of the graphics that show in the website can be used to affect the perceptions of the online users because it can attract and retains their online customer based. They refer to website content as “system quality”. The ease of use of the website would meet the customers’ preference therefore it shows a significant relationship between website content and customer loyalty (Jiang, Jun

& Yang, 2015). The determinants such as selection of foods, interactivity, interface design and the ease of use of website also having a significant relationship towards customer loyalty as well (Toufaily, Ricard & Perrien, 2013).

Arghya, Amandeep, Pradip & Puneet (2019) found that the social online platforms could help for advertising purpose and increasing the business visibility. The information content, functionality and usability of the website must be valued appropriately while designing the website. See-Kwong et a.l., (2017) stated that most of the businesses are willing to expose their business online because it could bring the positive impact such as increase of revenue, broaden customer reach and willingness to create a better customer base.

However, Hsu, Wang & Chih (2013) said that website quality is having an indirect relationship with customer loyalty even though website characteristics are a good indicator to customer loyalty when the relationship is mediate by satisfaction, commitment and trust. Last but not least, Christodoulides & Michaelidou (2010) proposed that information seeking is part of e-service content and it do not have any relationship on customer loyalty.

2.2.5 Perceived value

The definition of perceived value is value-for-money trade-off between price and quality. The term of perceived value defines the overall evaluation of customers on the usefulness product and services based on consumers' comment on what is given and received (Raji & Zainal, 2016). The key of success for all companies is using

the concept of perceived value which is regarded as necessary features for a business sustainability (Aulia, Sukati, & Sulaiman 2016).

Besides that, perceived value has affected on customer loyalty since it is one of the crucial concepts. This research elucidates that the crucial of customer value as a effective predictor of customer loyalty. There is a mediated relationship of perceived value and customer loyalty which also shown to be significant. The result show that perceived value is the prior path to customer loyalty which the perceived value has a strong impact on customer loyalty (Chen & Hu 2010).

Moreover, customer- perceived value is a forerunner of customer loyalty. Based on the empirical study of online customer services, the customer value shows up a positive effect on customer loyalty. Customer-perceived value not necessary to relate to price. Consumer will perceive the value of the service as major to competitor's offerings (Jiang, Jun, Yang 2015). Besides that, Chinomona, Masinge & Sandada (2014) show that there is a high levels of customer perceived value positively influence customer loyalty.

2.2.6 Customer loyalty

Customer loyalty is known as long-term asset and a key of business outcome for numerous companies. Having the loyal customer is essential to a business in order to create a positive competitive advantage as the customer would recommend their preferred to others in the market place. In addition, customer loyalty defined as "a deeply held committed to re-purchase and re-patronize a desired product and service

in the future, besides causing repetitive same brand-set purchasing, regardless the situational influences and marketing effort buying the potential to cause swapping intentions (Alhajia, Nerina, Hashim, & Jaharuddin 2018).

Other than that, they found that there is a strong and significant relationship between the customer loyalty and profit which may affect the sustainability of business. The high sustainability of the business resulted in a higher level of customer perceived value and thus lead to the higher level of customer loyalty. Customer loyalty is an action that defined the customer are willing to maintain the relationship with the business. This action would lead to a profitable behavior by customer to business (McMurrian & Matulich 2016).

Besides that, Ghane, Fathian & Gholamian (2011) mentioned that customer loyalty through e-commerce could lead to a long-term profitability and sustainability of a business due to customers have repurchase intention. The customer loyalty of a business would be retaining their customer base and reducing the cost as they do not need to recruit for new customer in order to remain the profitability of their business.

This determinant is also supported by Fazlzadeh, Faryabi, Darabi & Zahedi (2012), where it is found a positive relationship between the customer loyalty and brokerage performance which related to sustainability of business. The experienced customers who be more familiar with an organization's service delivery system which could caused a greater productivity for the service providers. Loyalty can make consumers more attractive and having an intention to repurchase so it may cause a sustainable profit by a business.

2.3 Conceptual Framework

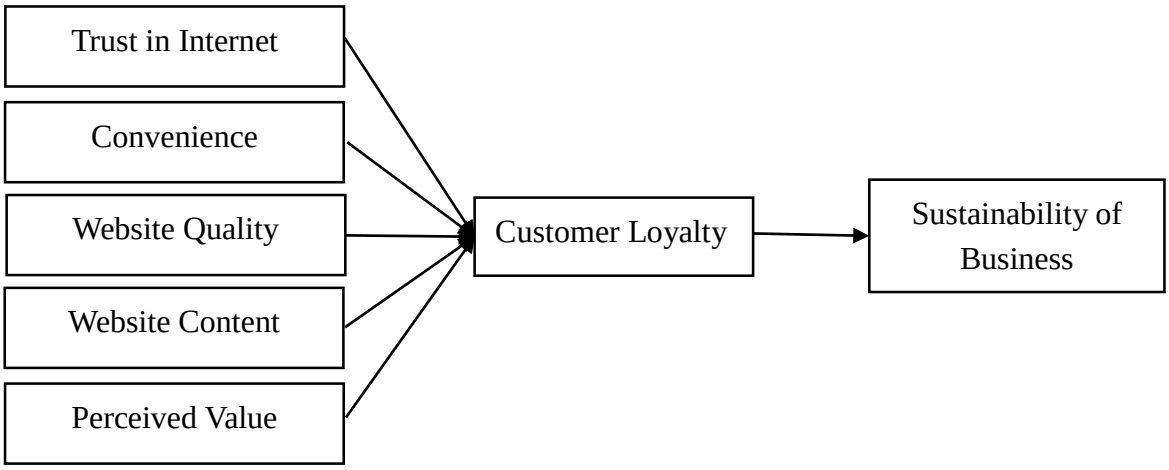


Figure 2.4: Determinants Affecting Sustainability of Business

Note: Customer Loyalty is a mediator variable

Source: Developed for the research

2.4 Hypotheses Development

Relationship between Trust in Internet and Customer Loyalty

H_0: There is no significant relationship between trust in internet and sustainability of business through customer loyalty.

H_1: There is significant relationship between trust in internet and sustainability of business through customer loyalty.

There is a positive significant relationship between trust in internet and customer loyalty (Giovanis & Athanasopoulou, 2014).

Relationship between Convenience and Customer Loyalty

H_0: There is no significant relationship between convenience and sustainability of business through customer loyalty.

H_2: There is significant relationship between convenience and sustainability of business through customer loyalty.

There is a positive significant relationship between convenience and customer loyalty (Kaura, Prasad & Sharma, 2015).

Relationship between Website Quality and Customer Loyalty

H_0: There is no significant relationship between website quality and sustainability of business through customer loyalty.

H_3: There is significant relationship between website quality and sustainability of business through customer loyalty.

There is a positive significant relationship between website quality and customer loyalty (Jiang, Jun & Yang, 2015).

Relationship between Website Content and Customer Loyalty

H_0: There is no significant relationship between website content and sustainability of business through customer loyalty.

H_4: There is significant relationship between website content and sustainability of business through customer loyalty.

There is a positive significant relationship between website content and customer loyalty (Jiang, Jun & Yang, 2015).

Relationship between Perceived Value and Customer Loyalty

H_0: There is no significant relationship between perceived value and sustainability of business through customer loyalty.

H_5: There is significant relationship between perceived value and sustainability of business through customer loyalty.

There is a positive significant relationship between perceived value and customer loyalty (Koo, Chung & Nam, 2015).

Relationship between Customer Loyalty and Sustainability of Business

H_0: There is no significant relationship between customer loyalty and sustainability of business.

H_6: There is significant relationship between customer loyalty and sustainability of business.

There is a positive significant relationship between the customer loyalty and profit which may affect the sustainability of business (McMurrian & Matulich, 2016).

2.5 Conclusion

Finally, the applications and explanations of the underlying theories such as Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB) and Unified Theory of Acceptance and Use of Technology (UTAUT). Besides, the past studied journals and variables such as trust in internet, convenience, website quality, website content, perceived value, customer loyalty and sustainability of business that related to this topic also have been identified and discussed after refer the literature review of the journals that done by previous authors. The conceptual framework and hypotheses development were also discussed thus further explain. The chapter will be served as reference and guide to develop the methodology in Chapter 3.

CHAPTER 3: METHODOLOGY

3.0 Introduction

Methods chosen to be conducted in this research will be further discussed in this chapter. Exploratory and descriptive included in research design, as well as causal research will be explained. Besides, the justification of the sampling frame, technique and sample size will be carried out as a sampling design. The data collection methods differentiate into primary data and secondary data, the data used in this research is primary data. Other than this, the research instrument used and the preliminary works will be explained. Finally, the proposed data analysis tool will be described about the data analysis and statistical techniques used in this study and the conclusion will summarize the Chapter 3.

3.1 Research Design

Research design is the conceptual blueprint of the research methods. It is one of the methods for choosing the research sites, subjects and the data collection procedures to response the research questions and enactment the research strategy (Akhtar, 2016). There are few variances of research design including exploratory, descriptive, explanatory and experimental. The design can be classification into quantitative

research methodology, qualitative research methodology and mixed methods research methodology. In order to investigate the food delivery service through e-commerce by using a financial technology (FinTech) such as Food Panda, Grab Food, Dahmakan, Quicksent and more toward sustainability of business, this study have apply the descriptive research which is quantitative research due to the study is conducted the numeric and quantity data.

Besides that, this research is conducted by using the quantitative research methodology. Quantitative research is a scientific method and it is aimed to testing the theories, establishing the relationship between the variables and explain the changes. One of the crucial aspects in quantitative research is data collection. The data collections of the quantitative research are from the random selection of the research participant from the larger population. Predetermined hypotheses regarding the relationship between specific variables can be tested by the standardized questionnaire, the data which have collected will be transformed into the PLS-SEM software (Silva, 2017).

In the case where research design has no bias and less mistake, it can be resulted as a good design. The tools that used to generate the result in research design included quantitative research methodology and qualitative research methodology. The PLS-SEM software mentioned above, will then collect the data from the questionnaire which are distributed to the random selected recipients and convert into the empirical result.

3.2 Data Collection Method

Data collection is the fundamental process to bring out a research. The researchers gather the information from targeted audiences to response the research questions. Basically, there are two types of data collection method such as primary data and secondary data. Primary data initiates to collect the data from researchers themselves to carry out analysis process meanwhile secondary method is responsible for historical data collection (Wahyuni, 2012)

Primary data is the first studies that the data need to be analysed, interpreted and explained subsequently as it is a part for prospective research purpose. Primary data obtain a specific set if objectives outlined before conduct the research. The researcher has full authorization to control over the accuracy of the data and has sufficient knowledge about the data accuracy in order to discuss towards the limitations (Windle, 2010). Other than that, the data could be collected through worldwide as it can be collected through numerous of method like surveys, phone calls and interviews (Research Methods and Process, n.d.).

Secondary data that use for research purpose is to further analysis the historical data in order to conduct for a new research topic (Windle,2010). The data had been collected by someone else is disclose to the research to use, and the relevant sources for research contain the existing data which is publicly disclose even if not published (Clark, 2013). The secondary sources contain the research studies and record that proposed by the descriptions, interpretations and explanations from the primary sources (Windle, 2010).

In this research, primary data will be used for conducting into this research. By using primary data, the degree of accuracy is very high since the data collected through distribution of questionnaire thus able to get the latest information of respondent. Through primary data, researcher could observe the large portion of respondents thus they could achieve the more realistic view for the research purpose. (Research Methods and Process, n.d.)

3.3 Sampling Design

Besides, sampling design is a method used to collect and obtain the information among the population (Kabir, 2016). The process of sampling design contained five steps which are the target community, sample chosen, target area, sample elements, techniques and sizing used (Francis, 2015).

3.3.1 Target Population

Target population is the whole population who needs information and draws conclusions (Kabir, 2016). The purpose of research is to investigate the current adoption trend of food delivery platforms in Malaysia. Thus, the target population are students and workers that often order foods using delivery applications in Malaysia.

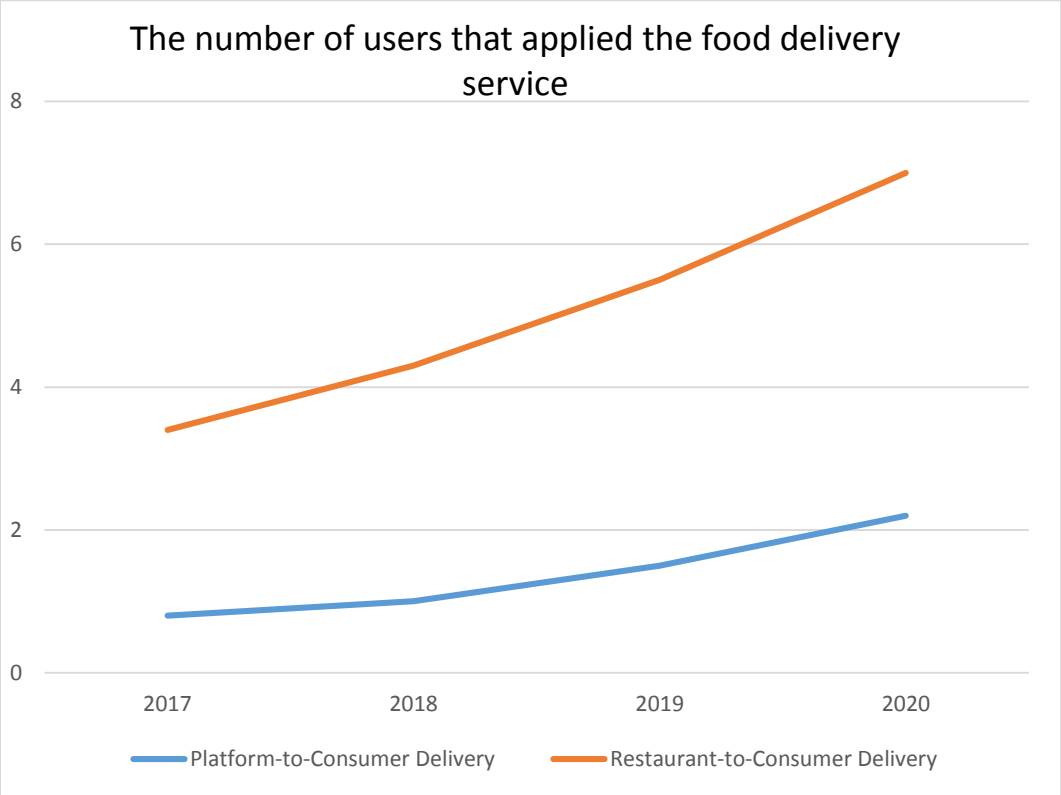


Figure 3.1: The number of users that applied the food delivery service

Source: Statista Market Forecast (Malaysia)

3.3.2 Sampling Frame and Sampling Location

The study applies sampling method and investigate about determinants that affect towards the sustainability of the business. It needs bunch of time and cost to study this research if used the large population in this research. Therefore, the sampling frame and sampling location will be used to minimize the cost and time.

3.3.2.1 Sampling Frame

Sampling frame consists of a list of sampling units and it also contains a list of items that drawn from the sample (Kabir, 2016). From this research, there are total 400 targeted respondents which included students and employees that often order foods through delivery applications would be the sampling frame. Since the components of the population is not specific, therefore, the sample will be collected using non-probability sampling.

3.3.2.2 Sampling Location

The targeted place for research was focused in Malaysia and the respondents will be the Malaysian for those students and employees who often order food through delivery applications. The questionnaires survey will be stochastic distributed to the respondents in the urban areas and university areas which located at Kampar, Kuala Lumpur and Selangor. These states were chosen because the populations among these states have higher population which contain a lot of employed people and students. Kuala Lumpur have the highest population which around 1,453,975 people, Selangor consists around 55,887 people and Kampar have the lowest population among these 3 states which around 19,056 people (World Population Review, 2020).

3.3.3 Sampling Elements

The population will be sampled and categories through sampling unit which consists of an individual element or a collective of elements (Kabir, 2016). The elements of the target population will accurately list via sampling unit. For example, the consumers who often order foods through delivery applications or the consumers who does not order foods through delivery applications can participate in answering the questionnaires. As the objective of this research is to identify the determinants that influence the sustainability of delivery platforms. Different type of consumers has different view towards the food delivery service; therefore, this research can be more accurately to analyze the result and to meet the objective of this study.

3.3.4 Sampling Techniques

The sampling techniques will be mentioned about the methods used to select the sampling units. There are several factors will be affected by the sampling method that applied into this study such as the aims of the study, time constraints, natural problems and the availability resources. The sampling techniques have a lot of methods and it categorized into different variance of basic approaches which are probability sample and non-probability sample (Kabir, 2016). Therefore, this research will use convenience sampling method in the category of non-probability sampling and target the consumers in Kampar, Kuala Lumpur and Selangor. This method is the most suitable and convenient due to it is costless and lesser time consuming.

3.3.4.1 Probability Sampling

Probability sampling is a sample data that use to select the sample randomly among all the population. The chance of being selected for every unit of the population if very fair by using this sampling method to ensure the sample is reliable and minimize the systematic error to represent the overall data. A total of 4 major random probability sampling methods available which are simple random sample, systematic random sample, stratified random sample and cluster sample. Firstly, simple random sample is like a lottery because every people have the same probability, therefore, the sample will be free from bias. Secondly, systematic random sample can choose the sample from the sampling frame, therefore, it can help ti eliminate the bias problem. Thirdly, the stratified random sample is choosing the sample randomly after divide the population into several groups that have same characteristic, therefore, it can cause a more accurate results than the simple random sample. Lastly, the cluster sample is select randomly from a large area of sample that had already divide into a smaller part, therefore, this method can save more cost from this method because some of the sample can be excluded directly (Kabir, 2016).

3.3.4.2 Non-probability Sampling

Non-probability sampling is a sampling technique which have no any chances to select the sample from the population so the sample is not reliable. Besides, this method should not have any estimation of sampling errors because there is no selection to drawn the sample. There are several major non-probability sampling methods included convenience, quota, judgement and snowball sampling. First of

all, convenience sampling is very convenience and can consume lesser time and cost because the researchers can face to face ask the respondents to fill up the questionnaires and receive it back immediately and cause the response rate is high. Secondly, quota sampling is just like stratified sampling because the population will be divided into several groups based on the characteristics of respondents and choose among them. Thirdly, judgement sampling is a method used to choose the sample depends on the judgement of the researchers. Finally, snowball sampling is the researcher will identify one of the samples from the population and ask the respondents to recommend the next respondents among the population (Kabir, 2016).

3.3.5 Sampling Size

Calculation of the sampling sizing will be based on the type of sampling technique that used in the study. The purpose of generate the sample size is to prevent the biases and errors problems. To make sure the estimated result will be accurate and reliable, the desired level of certainty and level of precision must be included in the calculation. For example, the common levels of precision must be 5% and 10%. Therefore, a sample size of 400 respondents among the students and employees will be proceeded with the questionnaires to get an accurate and reliable result.

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302

25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381

200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Table 3.1: Table for Determining Sample Size from a Given Population

Note:

N is population size.

S is sample size.

Source: Krejcie & Morgan (1970)

3.4 Research Instrument

Research instrument refer to researchers gain or obtain needed data from respondents for their research work through various type of methods. There are many types of measurement instrument used by researchers such as questionnaire, interview, observation, focus group discussion, experiment and etc. Research instruments chosen to use based on nature of research, type of data needed and use alongside with suitable studies.

3.4.1 Questionnaire Survey

This survey is one of research instrument consisting different type and format of questions. Collection of related data from random or targeted respondents is the main intention of this survey. Questionnaire survey is often designed for statistical analysis. It is popular, and widely used for its cheap, quick, efficient, standardize of collecting and analyzing data (Hewitt et al., 2017).

In research, the term "questionnaire" is often referring to self-completed questionnaire by respondent or survey instrument administrated by interviewer (face to face, phone or etc.). In event of self- completion survey or "questionnaire" is commonly referred as "interview schedule". A structured interview is in which respondent fill up a series of presentenced, fixed and close ended questions. There will few to none open ended question depend on the researchers.

It is researcher responsibility to design, construct, and use the questionnaires in helping respondents provide best information. As normal, the respondents may have various factor that affect their information accuracy such as location of interview, primary focus of interviewee, ability to recall past information, accuracy of information recalled, feeling and emotion during interview, motivation of conducting interview. Questions must able to project only an idea, a direction in each question to guide respondent, beside it must be as standardized, precise, detailed, clear and relevant (Bruce, 2018).

Physical distributions and online distribution questionnaire will be main ways to collect data in this research. Physical distribution refers to giving out hard copy survey questions to persons in a physical area. Online distribution refers to transfer questionnaire into soft copy in "Google Form" and send in website link format to

anywhere targeting relevant respondent without physical present (Hoonakker & Carayon, 2009).

3.4.2 Questionnaire Design

The survey questionnaire will be presented as per sections. UTAR logo, name, research project title, objective, members' personal information, contact number will be present. Questionnaire will also attach UTAR acceptance letter and private data protection statement. These two sections will be used to ensure legitimacy of this study and protect privacy of respondents and Acknowledgement of respondents on purpose of this research questionnaire is ensure with signature of every respondent before section A.

Section A consist the demographic of participants. Gender, race, age, occupation, monthly income, and educational level will be included in this section. Besides, questions on online food delivery services' usage, brand, usage frequency and preferable will be ask in this section as well to ensure acknowledgement of respondents. This will also determent the suitability of the respondents. This section contains a total of 13 questions. Respondent will answer in form of choosing one relevant answer or writing short answers.

Section B consists of 5 sub-sections for independent variable (trust in internet, perceived value, convenience, website content and website quality), 1 sub-section for mediator (Customer loyalty) and dependent variable (Sustainability of business) each. Each sub-section consists of 4 to 7 questions to a total of 39 questions.

Respondent will be answering in the form of 5-point scale starting from 1: strongly disagree to 5: strongly agree.

Section C consists only one question on letting respondent describe their experience of online food delivery service in the past. This question will be answered in open ended form, respondent can answer in few sentences form.

3.4.3 Pilot Test

A pilot test is a minor scale study/ survey conducted in order to evaluate and improve the study before performing full scale research project. Pilot test is an essential prerequisite and the best way to assess feasibility of a large, costly full-scale study. Conducting it will increase the likelihood of success and avoid invalid main study (Thabane et al., 2010). Pilot test is also popular test based on its advantage of convenience, ease to use, cost saving, and time saving.

Pilot study sample size will need to depend based on each study cases. There is no fixed number on the required sizing. 24 to 36 participants is accepted in the testing. But 30 unique participants from related population is recommended as reasonable minimum for a preliminary survey or scale development purpose study (Johanson & Brooks, 2010). Thus, based on similarity of research type, 30 unique participants will be issued with questionnaire surveys to students in UTAR to further conduct pilot test. Software PLS-SEM will run the data collected for pilot test to test reliability and validity of questions.

3.5 Constructs Measurement

In this questionnaire, the proportion of collection data applied to measure the level. Therefore, participants of questionnaires are asked to choose the answers that explained their opinions. Nominal, ordinal and interval scale will be used in the study.

3.5.1 Origin of Constructs

Dimension	Author	Scale of Measurement
Sustainability of business (Dependent variable)	Suhartanto, Dean, Leo & Triyuni, 2019	Interval
Trust on internet (Independent variable)	Azizul, Albattat, Ahmad Shahriman, & Irfan, 2019	Interval
Website quality (Independent variable)	Udo, Bagchi & Kirs, 2010 Che-Hui, Wen & Chung-Cheng, 2011	Interval
Website content (Independent variable)	Azizul, Albattat, Ahmad Shahriman, & Irfan, 2019 Udo, Bagchi & Kirs, 2010	Interval

Convenience (Independent variable)	Azizul, Albattat, Ahmad Shahriman, & Irfan, 2019	Interval
Perceived value (Independent variable)	Suhartanto, Dean, Leo & Triyuni, 2019 Che-Hui, Wen & Chung-Cheng, 2011	Interval
Customer loyalty (Independent variable)	Suhartanto, Dean, Leo & Triyuni, 2019	Interval

Table 3.2: Origin of Constructs

Source: Developed for the research

3.5.2 Nominal Scale

As defined, the numbers of nominal scale are used for identification of an item (Steven,1946), it could also be classified as categorical variables. This scale normally deals with the quantitative variables (Cicchetti, 2014) which do not include any numerical value such as gender and occupation. For instance, the Male or Female and the Yes or No in the demographic section in the questionnaire is classified as nominal scale. The examples of nominal scale are shown below:

What is your gender?

A) Male
B) Female

What is your occupation?

A) Student
B) Self-employment
C) Employment

	D) Others: _____
Have you try before ordering food through delivery apps (eg:Food Panda, Grab food, Dahmakan)? A) Yes B) No	**How did you know about the electronically ordering process?** A) Flyer/ Catalogue B) Friends & Family C) Internet D) Newspaper

Table 3.3: Demographic section in the questionnaire

Source: Developed for the research

3.5.3 Interval Scale

Interval scale known as the quantitative measurement level as the difference between the variables are significant. 5-point Likert Scale is most used in the interval scale questions where every emotion is denoted with a number and the variables range from extremely disagreed to extremely agreed. Likert scale is to study the feelings of the participants (Joshi, Kale, Chandel & Pal, 2015). Examples of interval scale are shown below:

I trust the food delivery app would not expose my card detail.				
Strongly disagree				Strongly agree
1	2	3	4	5
I satisfied with the purchase experience.				
Strongly disagree				Strongly agree
1	2	3	4	5
My order was delivered by the time promised.				
Strongly disagree				Strongly agree
1	2	3	4	5

Table 3.4: Interval scale in the questionnaire

Source: Developed for the research

3.5.4 Scaling Technique

Likert Scale is the measurement that used to measure the respondents' reactions or opinions. The format is comprised of a series of statement which the respondents are required to choose a degree of agreement or disagreement that best describe them from range of extreme agreement to extreme disagreement. In the study, Likert Scale will be selected to create the questionnaire.

3.6 Data Processing

Data processing defines as the illustration process for data preparing. A total of 4 procedures are consisted of process to check, edit, coding, and transcribe data into partial least squares structural equation modelling (PLS-SEM) software.

3.6.1 Data Checking

Data checking verified correctness condition of data as well as the interview's quantity. In order to discover the error or problems that occur in questionnaire, the researcher has used the seven C's as a checklist. The seven C's comprised of completeness, consideration, correctness, comparison, conciseness, concreteness, and clarity (Sureka, Garg, Khera, 2018). Determination of the reliability and validity in pilot study is depends on this crucial process.

3.6.2 Data Editing

Data editing defines as step for evaluate bias in the questionnaire which the respondents had filled up. It is a process which the data is reviewed for detect errors and allow the researcher to improve validity of the data that collected from the questionnaire. The researcher should clarify responses, make omissions, avoid

biased editing, make adjustment, and check handwriting in order to distribute the quality and improvement questionnaire to numerous respondents.

3.6.3 Data Coding

Data coding is a procedure that the researcher identifies and replace the answer in number or special symbol for ease of use in PLS-SEM. For the questionnaire in Section A, there are the coded '1' and '2' conducted to answer the demographic questions such as gender. '1' is coded as male whereas '2' is coded as female. In Section B, every questions' answer is labeled as '1' to '5' which represented as 'strongly disagreed' to 'strongly agree'.

Q1	Gender	"Male" is coded as 1 "Female" is coded as 2
Q2	Race	"Chinese" is coded as 1 "Malay" is coded as 2 "India" is coded as 3 "Others" is coded as 4
Q3	Age	"18 – 24" is coded as 1 "25 – 39" is coded as 2 "40 – 60" is coded as 3 "60 above" is coded as 4
Q4	I trust food delivery app would not expose my card details.	"Strongly Disagree" is coded as 1 "Disagree" is coded as 2 "Neutral" is coded as 3 "Agree" is coded as 4

		"Strongly Agree" is coded as 5
Q5	I trust food delivery app would not expose my current location.	"Strongly Disagree" is coded as 1 "Disagree" is coded as 2 "Neutral" is coded as 3 "Agree" is coded as 4 "Strongly Agree" is coded as 5

Table 3.5: Data coding

Source: Developed for the research

3.6.4 Data Transcribing

Data transcribing is a procedure that deliver the data into the statistical data. PLS-SEM is using in this step to assess the reliability and validity of the output reckoned by few approaches. The approaches are comprising Cronbach's alpha (CA), composite reliability (CR), construct validity (CV), average variance extracted (AVE) and discriminant validity (Samani, 2016). After transcribing data to PLS-SEM software, it can evaluate the significant of variables.

3.7 Data Analysis

3.7.1 Descriptive Analysis

In order to further conduct the research, descriptive analysis plays fundamental role. It gives an idea of distribution of data, detect any outliers and typos and identity among the variables. In other words, it can also define as a process transformation of raw data collected into a more understandable way. Usually, researcher will conduct descriptive analysis for research projects that using primary data to identify the pattern and variations in population. Nevertheless, it is unable to clearly state that the data, charts, graphics, text and summary tables in the research with a small sample size thus descriptive analysis can converted data collection in the survey. Section A contains demographics information of the respondents and it could define as the statistical data for the characteristic of the targeted sample.

3.7.2 Review of Data Analysis

A significant reliability coefficient is not capable to provide an exact measurement thus the valuation of the validity needs to follow through to conduct the research. This study will construct the validity of test for a precise quality measurement (Henseler, Dijkstra, Sarstedt, Ringle, Diamantopoulous & Straub, 2014). To test the correlation among exogenous & endogenous variable, and increase level of responsiveness in validity and reliability, the SMART PLS established by Ringle in year 2005 is the most suitable and convenient computer software to conduct this

research. Smart PLS could test whether the significant of outer model by generating T-statistic, this procedure called bootstrapping. Bootstrapping would take the sub-samples form original sample size with replacement to give bootstrap standard errors (Wong, 2013).

3.7.3 Reflective Outer Model

The main variable in the model is reflective and the validity and reliability supposed to be observed intensively. The reflective measurement is to observe the validity and reliability of the tested model. However, Dijkstra & Henseler (2015) stated that the PLS-SEM could administer a bias correction in the reflective measurement. Reliability is indicating the consistency of a research or stability of a result. It is unlikely to obtain the exactly same results every time but as long as there is a strong correlation between the variables could be defined as reliability.

3.7.4 Internal Consistency

Internal consistency is one of majorly used form of reliability coefficients due to it readily calculation in a single administration of tests. Internal consistency homogeneity of items, or degree of items jointly measure the same section (Henson, 2001). It is usually measure based on correlations of various items in a test. It determines similar score is produce on items measure same construct. As an example, if a respondent expresses agree on ‘I like to use food delivery apps’ and ‘I

used food delivery apps in past'; thus 'I like food delivery app' should also have similar rating for a good interval consistency in this test.

3.7.4.1 Cronbach's Alpha (CA)

Cronbach's Alpha is one of the widely used objective measure of reliability and internal consistency. Single test administration makes it easy to use. High quality test is important to evaluate the data reliability. Alpha is affected by the test dimensionality and length. 0.70 to 0.95 is an acceptable value of alpha. A low value of alpha (near zero) mean poor correlation between items thus should be revised or deleted. A high value alpha (>0.90) suggest the test is too long and redundancies (Tavakol & Dennick, 2011). But the assumption of tau-equivalence is an equipment for alpha to be equivalent to reliability coefficient. True reliability amount may vary/ underestimated if the tau-equivalence is violated (Green & Yang, 2009). But proper use of Cronbach's alpha will come with uncorrelated error term.

3.7.4.2 Composite Reliability (CR)

Composite reliability is also internal consistency measurement in scale which is similar with Cronbach's alpha (Netemeyer, 2003). It is widely use in various statistical software such as PLS-SEM. But different from CA, CR don't assume every item are equally reliable, thus make it appropriate for PLS-SEM that prioritize item's reliability (Hair, Ringle & Sarstedt, 2011). Threshold of CR is over a debate as Cronbach's alpha, but an acceptable threshold can be from 0.60 or higher. It is

stated that small scale items tent to show lower reliability level result while high scale item tent to show the opposite. It should also be note that composite reliability values were typically larger than Cronbach's Alpha (Peterson & Kim, 2013). Other researcher also stated that CA values of 0.60 to 0.70 for normal research and 0.70 to 0.90 for advanced research is acceptable. Value below 0.60 indicate lack of reliability while item with loading between 0.40 to 0.70 only can be delete if lead to an increase in CA above suggested threshold.

3.7.5 Convergent Validity (CV)

Convergent validity refers to a parameter used in various behaviour sciences field such as sociology and psychology. It is also referring to degree of two measure of construct is in fact related (should related in theory). Convergent validity is established only when two measure of construct related to each other (related in theory) while measure of discriminant discriminate easily (differentiated in theory). Correlation coefficients can be used to estimate convergent validity. As an example, result of related section in theory should result in high correlation to show convergent validity. The convergent validity of measurement model can assess using Average Variance Extracted (AVE) and Composite Reliability (CR) (Fornell & Larcker, 1981).

3.7.5.1 Average variance extracted (AVE)

AVE is the average of variation that a latent construct to explain in observed variable is theoretical related. This correlation is usually called as factor loading. Squaring individual correlation gives the amount of variation in each observed variable that the latent construct accounts for (Farrell, 2010). Convergent validity is acceptable/significant only if all AVE are above 0.50 (Semejin, Van Riel, Van Birgelen & Streukens, 2005). The value of 0.50 is equivalent to latent variables capture the minimum 50% of variance form manifest variable with calculation in PLS-SEM software. Otherwise, model is insignificant if AVE is lower than 0.50 indicate less validity captured, thus may contain more errors. Most researcher suggest a minimum threshold of 0.50, while some also accept Ave lower than 0.50 (Fornell & Larcker, 1981).

3.7.6 Discriminant Validity Test

Researchers can utilize a lot of reliability and validity tests to assess the importance and generality assessments which they can expect the approaches used to prove the reliability and effectiveness to be fairly consistent. Thus, consistency will be the criterion for evaluation of the construct reliability and convergent validity. The characteristics of discriminant validity evaluation between structures are characterized by uncertainty and misuse (Farrell 2010).

The aim of this study is to enhance the comprehension of the general techniques for examining discriminant validity and to provide functional policies on choosing

the most suitable approach. Establishing on this commentary task, the introduction of a Monte Carlo simulation that evaluate the cognate usefulness of the three most general discriminant validity testing approach and it is a recommended technique, Heterotrait-monotrait ratio of correlations (HTMT) (Henseler et al. 2015). Outcome of the simulation recommend that the AVE-SV and HTMT have a 0.85 critical value, therefore, these techniques are proposed for investigate the contravention of discriminant validity (Ahmad, Zulkurnain & Khairushalimi, 2016).

Structuring a validity assessment are the extent to measure the instruments which it plans to measure and it are jointly separate into argument of convergent validity and discriminant validity. Besides, it only needs an approach and a variable measurement. Therefore, the mostly commonly used approach of discriminant validity is nested in confirmatory factor analysis and does not evaluate convergence and discriminant validity (Voorhees et al. 2015).

The purpose to apply discriminant validity tests is to determine the details and substance of the construction. The researchers are claimed to provide the proof to certify that models and studies are unique and not a study based on previous experience done by other researchers (Hair, Ringle & Sarstedt, 2013). The research of modeling structures with the relationship between independent variables and dependent variables that lack of discriminant validity will caused the data problems such as either the data does support with statistically significant parameters or the data does not support with statistically significant parameters (Voorhees et al. 2015).

The forecast relate to the influence of the independent variable on mediator and the underlying structure of dependent variable will be made based on the previous studies and experienced researchers. The result showed that lacking of discriminant

validity is the access of mediator-dependent variable is merely the empirical product of measuring the same variable twice.While using the multi-item scales to operate the structure, a discriminant validity test can be performed at the structure and item levels (Voorhees et al. 2015).

Last but not least, the researchers believed that HTMT is the most essential testing approach to measure the discriminant validity. By assessing the HTMT, the insufficient sensitivity of the cross loading between the structure can be overcome (Ab Hamid, Sami & Sidek, 2017). A theory proved by previous researchers indicated that the higher sensitivity in HTMT will caused a better and accurate result of the model which lead to the measurement tool that developed in questionnaire have higher quality (Ab Hamid et al, 2017). In short, if the ratio is below 1.0 which mean it is a valid model (Garson, 2016).

3.8 Assessment of Structural Model

The result of reliability and validity will be shown once the testing mentioned above have done. The structural model shows the causal and correlation among the variables would be used to examine after the results has been computed. The degree of multi-collinearity and relationship among variables will be presumed in the research model.

3.8.1 Collinearity Statistic (VIF)

Variance inflation factor is used to test whether the variables are correlated to each other (Miles, 2014). The general rule is that the value of VIF should not exceed 5 (Garson, 2012).

3.8.2 Explanation of Target Endogenous Variable Variance

3.8.2.1 Coefficient of Determination (R-square)

R-square is to measure the scale of variation that explicated based of independent variables. As an example, exogenous variables (trust on internet, website quality, website content and perceived value) to the changes in its endogenous variable (sustainability of business) are explained by R-square. R-square is a key statistic indicating how well a model after including a set of variables (Zhang, 2016). The mediator which is the customer loyalty is explained to the changes in its endogenous variable which is sustainability of business.

3.8.3 Effect Size (F-Square)

Effect size measures provide information regarding the relationship between variables (Berben, Sereika & Engberg, 2012). The smaller the effect size indicating

the weaker the relationship between the two variables. The effect size which less than 0.02 indicating small effect size.

3.8.4 Significant of Variable

3.8.4.1 Inner Model Path Coefficient by Using Bootstrapping

The direct effect of an independent variable on the dependent variable will be shown by the path coefficient. Negative value has negative effect on underlying variables. There will be a strong statistical value when the value is close to 1. Bootstrapping is frequently used to estimate the standard error in PLS-SEM (Kock, 2018). Based on the confidence interval, bootstrap standard error is used to test the structural parameter. For example, the effect might be considered significant if the 95% confidence interval of a parameter exclude zero (Jung & Park, 2018).

3.8.5 Mediation Effect

Variance accounted for (VAF) is to examine that whether the inclusion of mediator which is customer loyalty is meaningful. The formula of VAF is shown below:

$$VAF = \frac{\text{Indirect Effect}}{\text{Total Effect}} = \frac{\text{Path A x Path B}}{\text{(Path A x Path B) + Path D}}$$

There is a full mediation between independent variables and dependent variable if the VAF value is larger than 80%. The VAF value between 20% to 80% indicating a partial mediation while the value that less than 20% meaning no mediation.

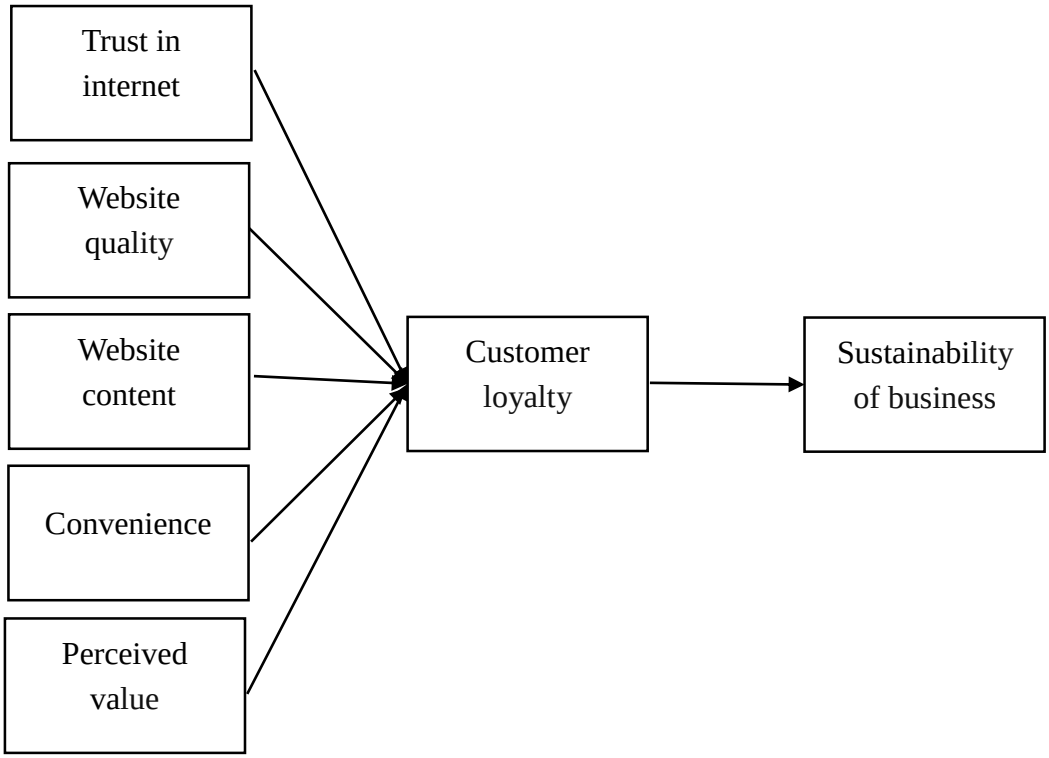


Figure 3.2: Hypothesized research model

Note: Customer loyalty is mediator variable.

Source: Developed for the research

3.9 Conclusion

In conclusion, the research methodology had been included in this study. This research had studied the research instruments, the sample approach, data analysis, questionnaires and more. These relevant and useful information will be provided for the future researchers for further discussion. In Chapter 4, the interpretation of the analysis of data outcome is the ending.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Based on the study, there are 392 out of 468 questionnaires that are valid, and the remaining of 76 are invalid. Part of invalid respondents did not have experience with food delivery system while other are not in the targeted area such as Perak, Kuala Lumpur and Selangor. The questionnaires that were collected are used to study the result by using Partial Least Squares Structural Equation Modeling (PLS-SEM). After the questionnaires' data enter into the PLS-SEM software, the result can be test to analyze and explain the relationship of the variables are significant or insignificant.

4.1 Descriptive Analysis

Descriptive analysis has been used in this study to ensure the demographic data of the respondents can be clearly shown as well as the final results can be accurately presented. The following analysis will be depicted by using table and histogram.

4.1.1 Respondents Filtering Questions

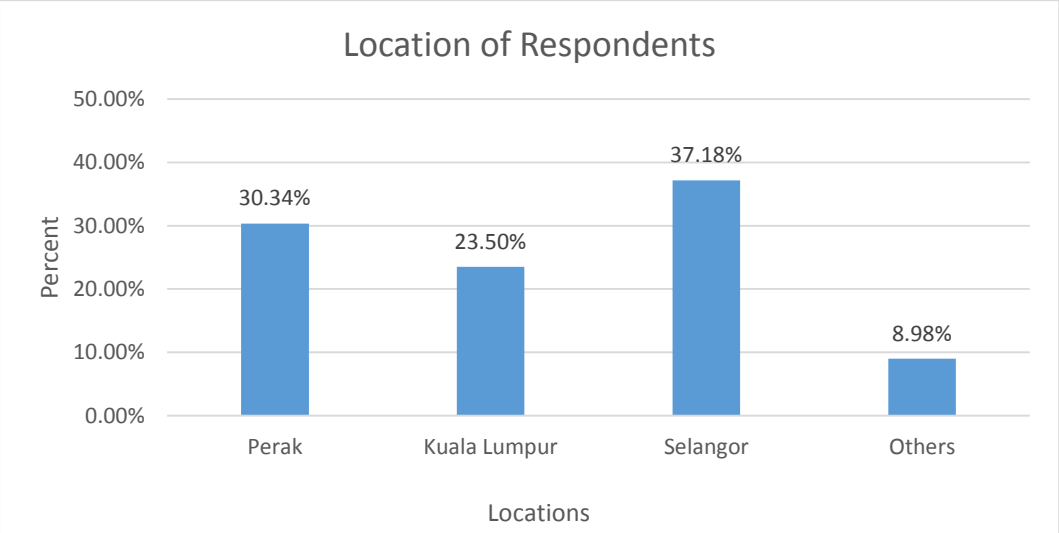
4.1.1.1 Location of Respondents

Table 4.1: Location of Respondents

Location	Frequency	Percent
Perak	142	30.34%
Kuala Lumpur	110	23.50%
Selangor	174	37.18%
Others	42	8.98%
Total	468	100%

Source: Developed for the research

Figure 4.1: Location of Respondents



Source: Developed for the research

Table 4.1 and Figure 4.1 show location of respondents who filled the questionnaires. Most respondents are from **Selangor which have 174 respondents (37.18%)**, followed by the respondents from **Perak with 142 respondents (30.34%)** and respondents from **Kuala Lumpur have only 110 respondents (23.50%)**. The respondents from **other states have 42 respondents (8.98%)**. The research only targets the respondents from Perak, Kuala Lumpur and Selangor, therefore, there are only 426 surveys are valid while the remaining surveys are invalid to be used in this research.

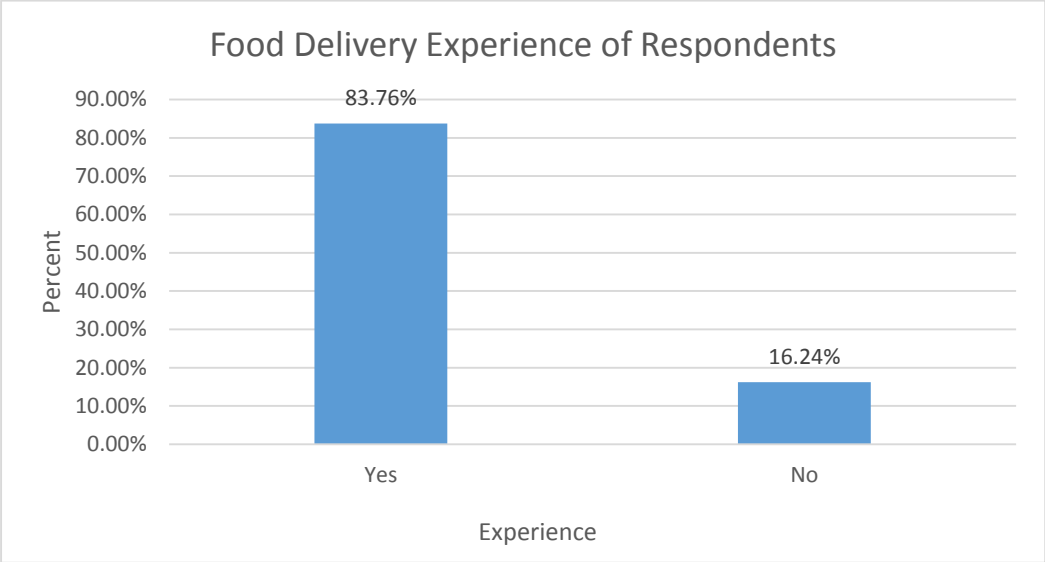
4.1.1.2 Have you tried before ordering food through delivery apps (eg: FoodPanda, Grab food, Dahmakan)?

Table 4.2: Have you tried before ordering food through delivery apps (eg: FoodPanda, GrabFood, Dahmakan)?

Experience	Frequency	Percent
Yes	392	83.76%
No	76	16.24%
Total	468	100%

Source: Developed for the research

Figure 4.2: Have you tried before ordering food through delivery apps (eg: FoodPanda, GrabFood, Dahmakan)?



Source: Developed for the research

From **Figure 4.2and Table 4.2**, it shown clearly that there are **392 respondents (83.76%) have order foods using food delivery apps**. However, there are **76 respondents (16.24%) who never use food delivery apps** to order foods. The research only targets sample who are using the food delivery apps, hence, the respondents who never use food delivery apps will be filtered out. In short, 392 out of 468 surveys are valid to use for the research.

4.1.2 Respondents Demographic Profile

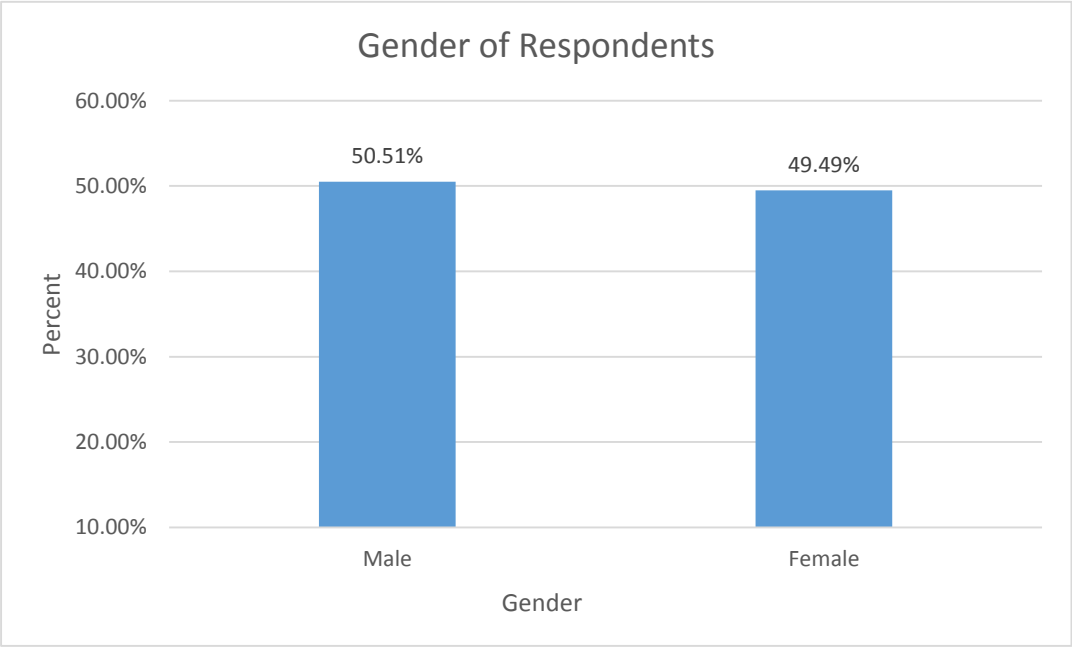
4.1.2.1 Gender of Respondents

Table 4.3: Gender of Respondent

Gender	Frequency	Percent	Valid Percent
Male	198	50.51%	50.51%
Female	194	49.49%	49.49%
Total	392	100%	100%

Source: Developed for the research

Figure 4.3: Gender of Respondents



Source: Developed for the research

From **Table 4.3 and Figure 4.3**, number for respondents' gender who conducted questionnaires were illustrated. The data shown that the number of **male** respondents is **198 respondents (50.51%)** which is slightly higher, while the number of **female** respondents is **194 respondents (49.49%)**.

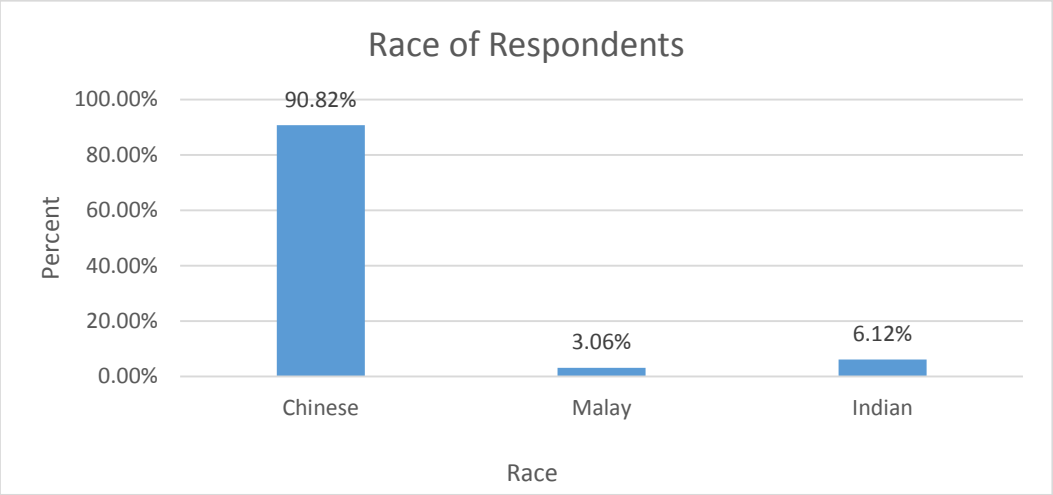
4.1.2.2 Race of Respondents

Table 4.4: Race of Respondents

Race	Frequency	Percent	Valid Percent
Chinese	356	90.82%	90.82%
Malay	12	3.06%	3.06%
Indian	24	6.12%	6.12%
Total	392	100%	100%

Source: Developed for the research

Figure 4.4: Race of Respondents



Source: Developed for the research

Table 4.4 and Figure 4.4 had displayed ethnicity participating in the questionnaires. The statistics shown that major respondents are **Chinese with 356 respondents (90.82%)**, second are **Indian with 24 respondents (6.12%)**, followed by **Malay with 12 respondents (3.06%)**.

4.1.2.3 Age of Respondents

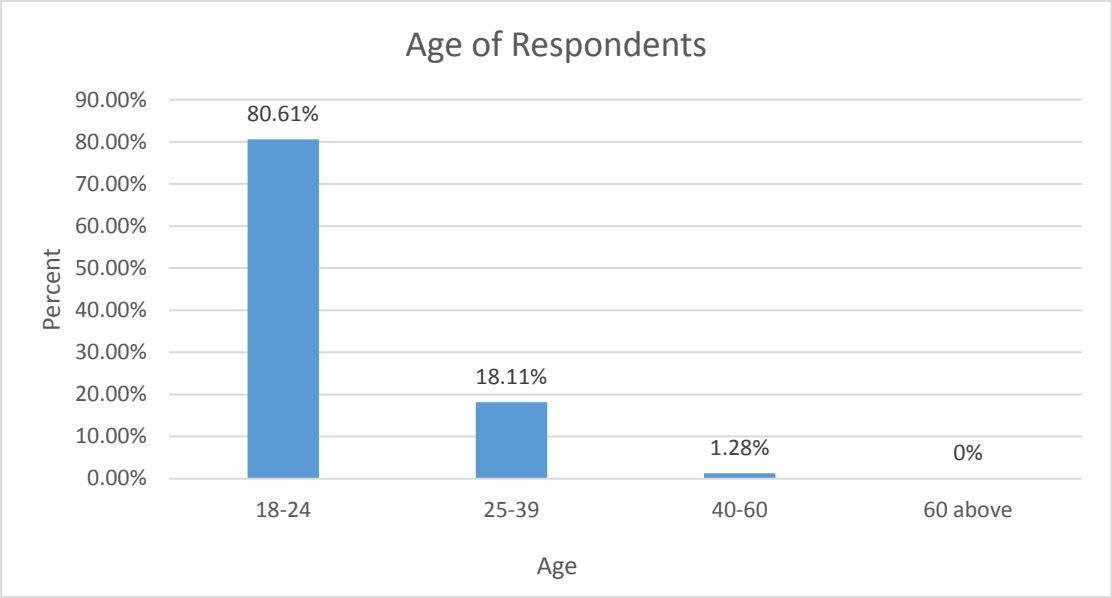
Table 4.5: Age of Respondents

Age	Frequency	Percent	Valid Percent
18-24	316	80.61%	80.61%
25-39	71	18.11%	18.11%
40-60	5	1.28%	1.28%

60 above	0	0%	0%
Total	392	100%	100%

Source: Developed for the research

Figure 4.5: Age of Respondent



Source: Developed for the research.

Table 4.5 and Figure 4.5 show the statistic of the age of respondents in the research. The ages of respondents are mostly **between 18 to 24** which have total **316 respondents (80.61%)**. The ages of respondents **between 25 to 39** have **71 respondents (18.11%)** which is ranked second while the third ranked is the respondents who are aged **between 40 to 60** with only **5 respondents (1.28%)**. Lastly, there is **no respondents (0%)** who falls under the ages of **60 and above**.

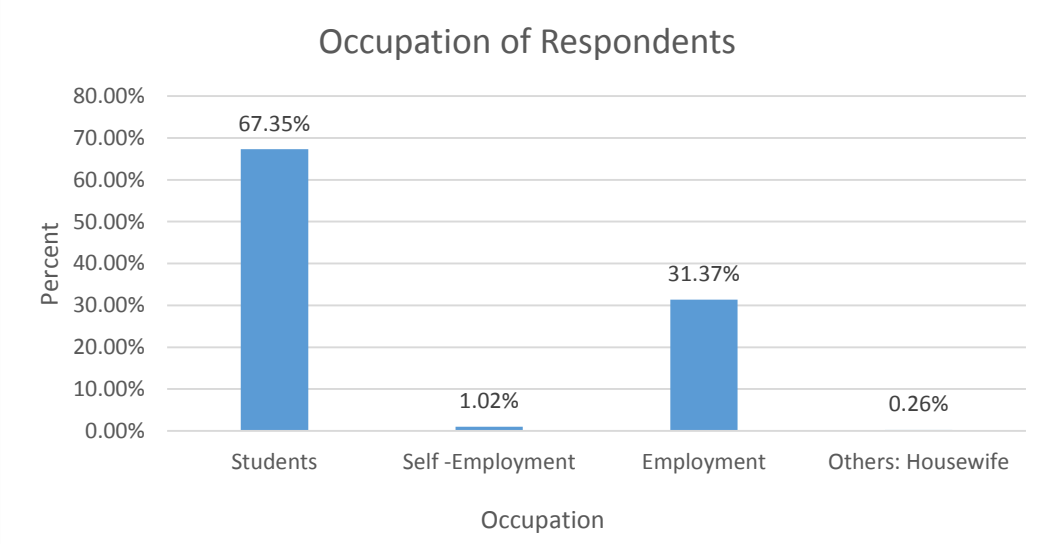
4.1.2.4 Occupation of Respondents

Table 4.6: Occupation of Respondents

Occupation	Frequency	Percent	Valid Percent
Students	264	67.35%	67.35%
Self -Employment	4	1.02%	1.02%
Employment	123	31.37%	31.37%
Others: Housewife	1	0.26%	0.26%
Total	392	100%	100%

Source: Developed for the research

Figure 4.6: Occupation of Respondents



Source: Developed for the research

Table 4.6 and Figure 4.6 justify the occupation of the participants in this research. Participants of the questionnaires are mostly **students** with 2**64 respondents (67.35%)**. In addition, there are **123 respondents (31.37%)** who are **employment workers**. There are **4 respondents (1.02%)** are **self-employment workers** while there is only **1 housewife (0.26%)** participate in the questionnaires.

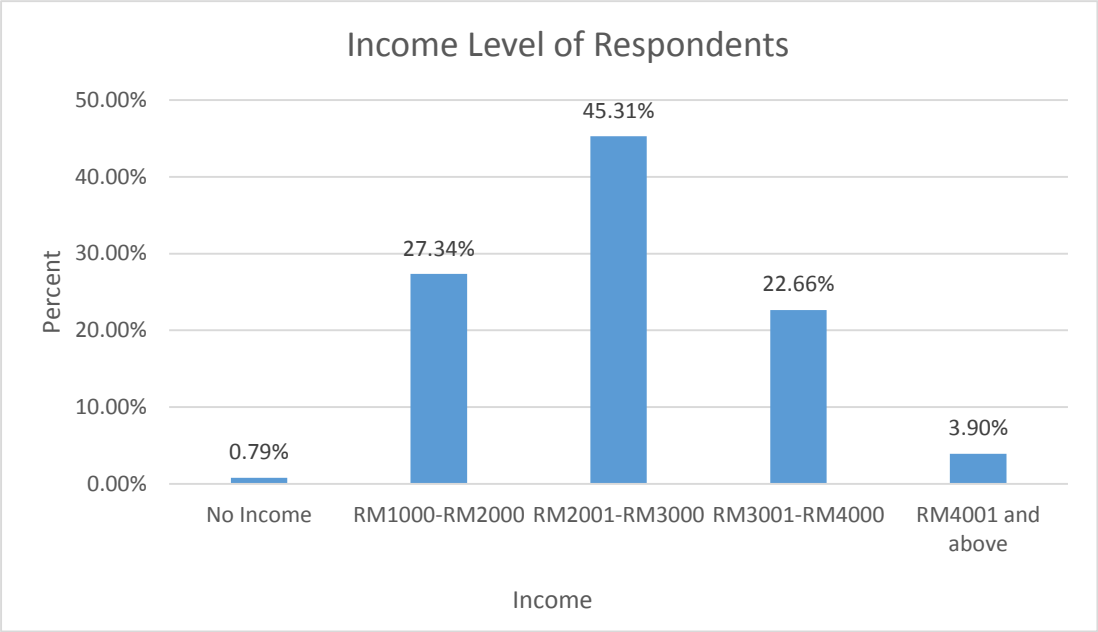
4.1.2.4.1 Income level of Respondents

Table 4.7: Income Level of Respondents

Income	Frequency	Percent	Valid Percent
No Income	1	0.79%	0.79%
RM1000-RM2000	35	27.34%	27.34%
RM2001-RM3000	58	45.31%	45.31%
RM3001-RM4000	29	22.66%	22.66%
RM4001 and above	5	3.90%	3.90%
Total	128	100%	100%

Source: Developed for the research

Figure 4.7: Income Level of Respondents



Source: Developed for the research

Figure 4.7 and Table 4.7 are the data to show the income level of the self-employment, employment and other such as housewife. Most of the respondents' income level are **between RM2001 to RM3000** which are **58 out of 128 respondents (45.31%)**. The second highest income level of respondents are **between RM1000 to RM2000**, there are total of **35 respondents (27.34%)**. The third ranked income level of respondents are **between RM3001 to RM4000** with **29 respondents (22.66%)**. Minority of respondents' income level are **between RM4001 and above**, there are only **5 respondents (3.90%)**. Lastly, there is **1 respondent (0.79%) have no income**.

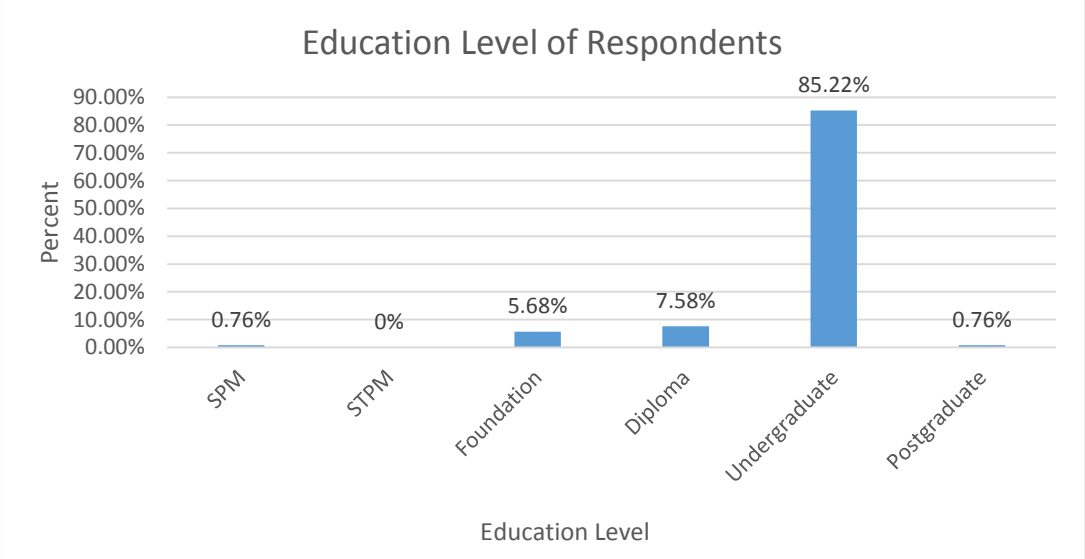
4.1.2.4.2 Education level of Respondents

Table 4.8: Education Level of Respondents

Education Level	Frequency	Percent	Valid Percent
SPM	2	0.76%	0.76%
STPM	0	0%	0%
Foundation	15	5.68%	5.68%
Diploma	20	7.58%	7.58%
Undergraduate	225	85.22%	85.22%
Postgraduate	2	0.76%	0.76%
Total	264	100%	100%

Source: Developed for the research

Figure 4.8: Education Level of Respondents



Source: Developed for the research

Table 4.8 and Figure 4.8 are data to illustrate the education level of the students that take part in the questionnaires. Majority of the respondents are **Undergraduate** students with a total **225 respondents (85.22%)**. Followed by **Diploma** students with **20 respondents (7.58%)** and **Foundation** students with **15 respondents (5.68%)**. **SPM and Postgraduate** students have equal number of respondents, both of them have **2 respondents (0.76%)** each. Lastly, there is **0 respondent (0%)** of **STPM** students contribute in this research.

4.1.3 Respondents' General Information

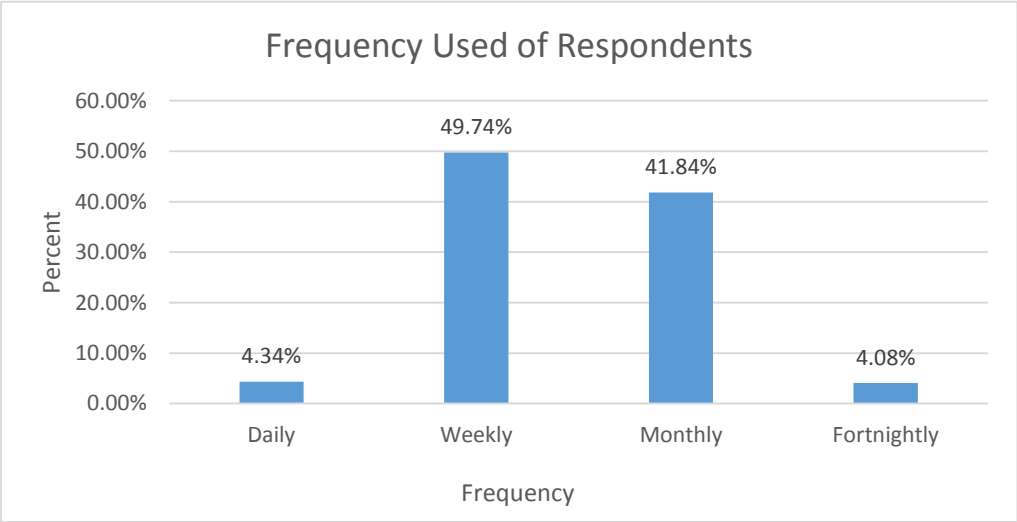
4.1.3.1 How often you will order food online?

Table 4.9 How often you will order food online?

Frequency	Frequency	Percent	Valid Percent
Daily	17	4.34%	4.34%
Weekly	195	49.74%	49.74%
Monthly	164	41.84%	41.84%
Fortnightly	16	4.08%	4.08%
Total	392	100%	100%

Source: Developed for the research

Figure 4.9 How often you will order food online?



Source: Developed for the research

From **Table 4.9 and Figure 4.9**, data clearly shows that **195 respondents (49.74%)** ordered foods through food delivery platforms **weekly** while **164 respondents (41.84%)** used food delivery apps to order food **once a month**. Besides, there are **17 respondents (4.34%)** always use food delivery apps to order food **daily** while only **16 respondents (4.08%)** ordered foods **fortnightly** using the food delivery apps.

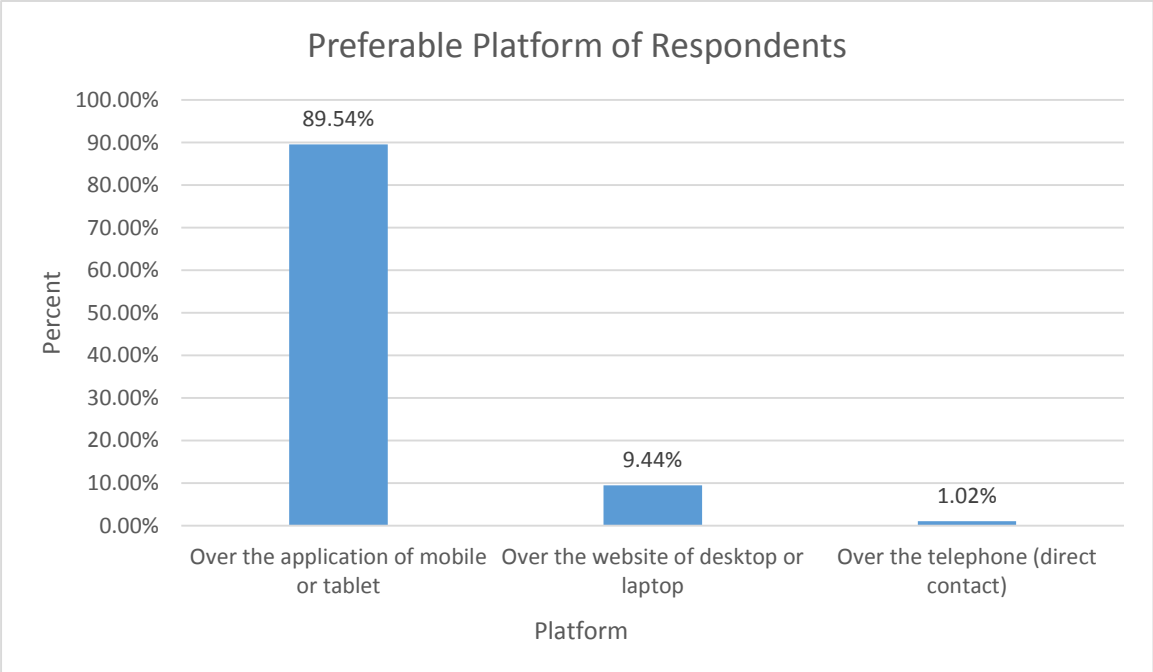
4.1.3.2 In general, how do you prefer to order food?

Table 4.10 In general, how do you prefer to order food?

Platform	Frequency	Percent	Valid Percent
Over the application of mobile or tablet	351	89.54%	89.54%
Over the website of desktop or laptop	37	9.44%	9.44%
Over the telephone (direct contact)	4	1.02%	1.02%
Total	392	100%	100%

Source: Developed for the research

Figure 4.10 In general, how do you prefer to order food?



Source: Developed for the research

Table 4.10 and Figure 4.10 show an overwhelming data, there are a total **351 (89.54%) out of 392 respondents** prefer to order foods through the applications by using the **mobile or tablet**. Secondly, only **37 respondents (9.44%)** prefer to use **website** to order foods via desktop or laptop. There are minority respondents prefer to **direct contact** the restaurant to order foods which are only **4 respondents (1.02%)**.

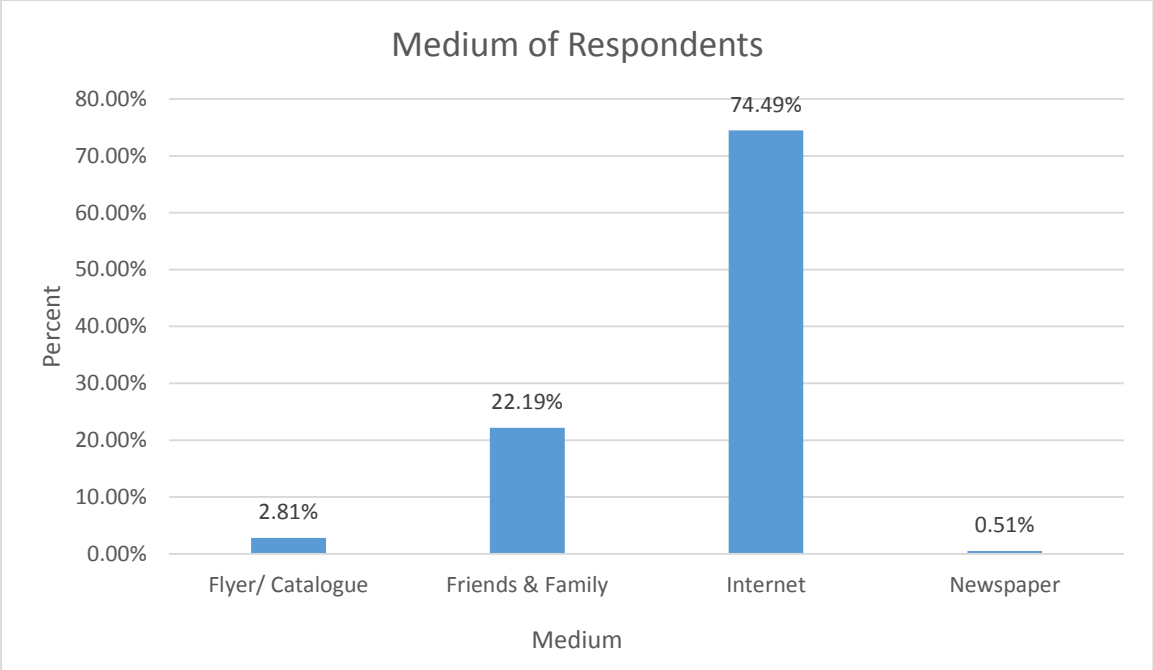
4.1.3.3 How did you know about the electronically ordering process?

Table 4.11: How did you know about the electronically ordering process?

Medium	Frequency	Percent	Valid Percent
Flyer/ Catalogue	11	2.81%	2.81%
Friends & Family	87	22.19%	22.19%
Internet	292	74.49%	74.49%
Newspaper	2	0.51%	0.51%
Total	392	100%	100%

Source: Developed for the research

Figure 4.11: How did you know about the electronically ordering process?



Source: Developed for the research

Table 4.11 and Figure 4.11 illustrated how the respondents recognize food delivery system. A total of 2**92 respondents (74.49%)** recognize the food delivery system via **internet** such as advertisements. Besides, there are **87 respondents (22.19%)** know the food delivery system through introduction of **friends and family**. The participants of the questionnaires who know the food delivery system via **flyer or catalogue** has only **11 respondents (2.81%)**. Lastly, there are only **2 respondents (0.51%)** recognize the food delivery system through reading the **newspaper**.

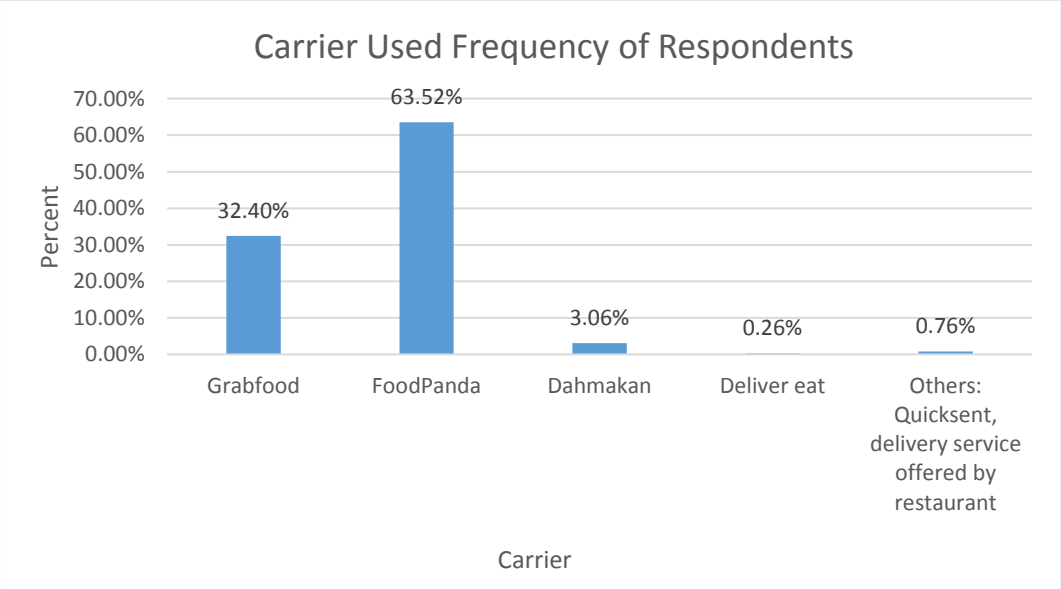
4.1.3.4 Which carrier do you use the most?

Table 4.12: Which carrier do you use the most?

Carrier	Frequency	Percent	Valid Percent
Grabfood	127	32.40%	32.40%
FoodPanda	249	63.52%	63.52%
Dahmakan	12	3.06%	3.06%
Deliver eat	1	0.26%	0.26%
Others: Quicksent, delivery service offered by restaurant	3	0.76%	0.76%
Total	392	100%	100%

Source: Developed for the research

Figure 4.12: Which carrier do you use the most?



Source: Developed for the research

According to **Table 4.12 and Figure 4.12**, the extreme used food delivery platform is FoodPanda, there are total **249 respondents (63.52%)** use **FoodPanda** to order the foods. There are **127 respondents (32.40%)** use **Grabfood** the order foods while **Dahmakan** only have **12 respondents (3.06%)** used to order foods. There are minor respondents using **Quicksent or delivery service offered by restaurant** to order foods which are only **3 respondents (0.76%)**. Lastly, only **1 respondent (0.26%)** used **Deliver eat** to order foods through this platform.

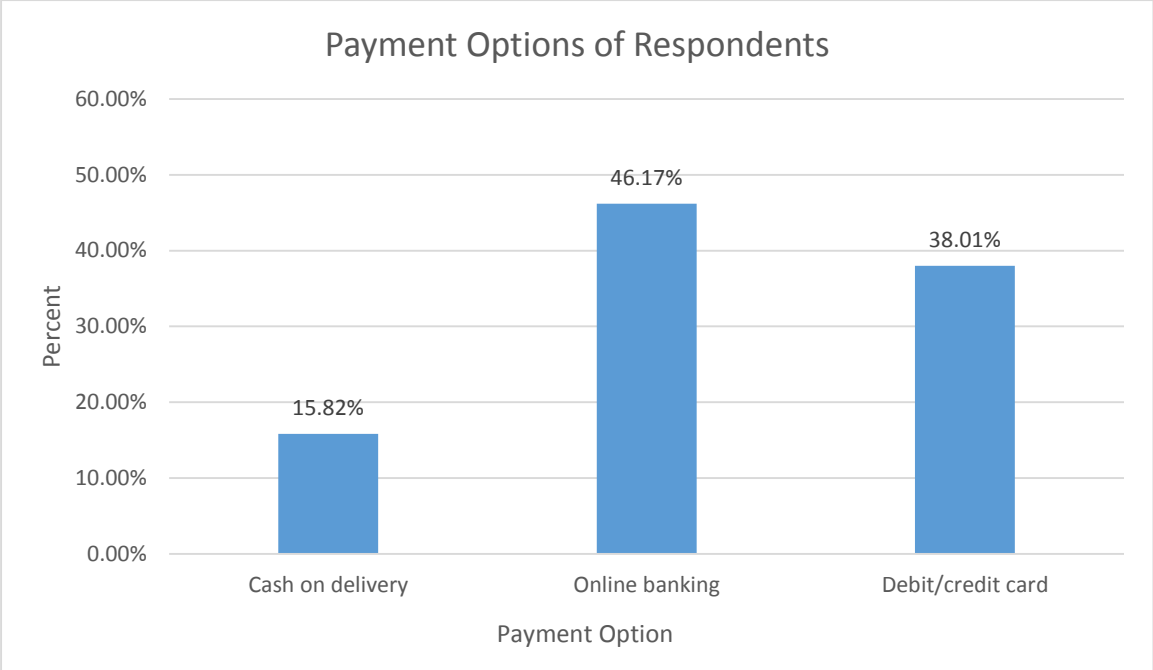
4.1.3.5 Which payment options do you use the most?

Table 4.13 Which payment options do you use the most?

Payment Options	Frequency	Percent	Valid Percent
Cash on delivery	62	15.82%	15.82%
Online banking	181	46.17%	46.17%
Debit/credit card	149	38.01%	38.01%
Total	392	100%	100%

Source: Developed for the research

Figure 4.13 Which payment options do you use the most?



Source: Developed for the research

Table 4.13 and Figure 4.13 are the statistics of payment options the respondents used. Majority of the respondents prefer to use **online banking** to make payment after ordered foods, there are total **181 respondents (46.17%)**. There are **149 respondents (38.01%)** prefer to use **debit or credit card** to make payment after ordered foods. Lastly, there are only **62 respondents (15.82%)** choose to pay **cash** after the food delivered to them.

4.1.4 Central Tendencies Measurement of Constructs

The Central Tendencies Measurement are to examine the average and standard deviation of every variable that collected via questionnaires. The data can be computed by using PLS-SEM software.

4.1.4.1 Sustainability of Business – Trust in Internet

Table 4.14: Descriptive Statistics of Sustainability of Business - Trust in Internet

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	I trust the food delivery app would not expose my card details.	3.617	3	0.890	5
2	I trust the food delivery app would not expose my current location.	3.587	5	0.925	3
3	I feel secure in ordering food through the food delivery app.	3.612	4	0.935	2
4	I can rely on the service offered by the food delivery app	3.686	2	0.918	4
5	The food delivery app can know my preference.	3.459	6	1.022	1

6	**The food delivery apps fulfil my expectations.**	3.755	1	0.884	6

Source: Developed for the research

Table 4.14 has shown data of central tendencies measurement of an independent variable, trust in internet based on the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.755** which relate to the statement "**The food delivery apps fulfil my expectations**". While the least value of mean ranking is **3.459** relate to the statement "**The food delivery app can know my preference**.". For the ranking of standard deviation, the highest ranking has a value of **1.022** relate to the statement "**The food delivery app can know my preference**.". While the lowest value of standard deviation ranking is **0.884** which relate to the statement "**The food delivery apps fulfil my expectation**".

4.1.4.2 Sustainability of Business – Perceived Value

Table 4.15: Descriptive Statistics of Sustainability of Business - Perceived Value

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	**I feel I am getting a good food product at a reasonable price when I use the food delivery app.**	3.628	6	0.974	2
2	**Using the food delivery**	3.704	4	0.987	1

	app is worth it for me to devote my time and efforts.				
3	**Compared with conventional food purchasing ways, it is wise to use the food delivery app.**	3.747	2	0.939	4
4	**I received excellent service from the online retailer.**	3.755	1	0.924	6
5	**This online retailer offers a wide selection of product which meets my needs.**	3.745	3	0.940	3
6	**I enjoy giving other users of this online retailer advice.**	3.673	5	0.929	5

Source: Developed for the research

Table 4.15 has shown data of central tendencies measurement of an independent variable, perceived value based on the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.755** which relate to the statement "**I received excellent service from the online retailer**.". While the value of lowest mean ranking which is **3.628** relate to the statement "**I feel I am getting a good food product at a reasonable price when I use the food delivery app**.". For the ranking of standard deviation, the highest ranking has a value of **0.987** relate to the statement "**Using the food delivery app is worth it for me to devote my time and efforts**.". While the value of lowest standard deviation ranking is **0.924** which relate to the statement "**I received excellent service from the online retailer**.".

4.1.4.3 Sustainability of Business – Convenience

Table 4.16: Descriptive Statistics of Sustainability of Business - Convenience

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	Using the food delivery app would be convenient for me.	3.995	1	0.939	1
2	The food delivery app offers a variety of restaurant choices.	3.870	4	0.893	3
3	The food delivery app offers a variety of food choices.	3.880	3	0.883	4
4	I can order food with a wide range of prices through the food delivery app.	3.798	5	0.841	5
5	Heavy traffic on the roads is one of the reasons to use food delivery apps.	3.962	2	0.932	2

Source: Developed for the research

Table 4.16 justify the data of central tendencies measurement of an independent variable, convenience regarding to the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.995** which relate to the statement "**Using the food delivery app would be convenient for me**.". While the value of lowest mean ranking which is **3.798** relate to the statement "**I can order food with a wide**

range of prices through the food delivery app.". For the ranking of standard deviation, the highest ranking has a value of **0.939** relate to the statement "**Using the food delivery app would be convenient for me**.". While the value of lowest standard deviation ranking is **0.841** which relate to the statement "**I can order food with a wide range of prices through the food delivery app**.".

4.1.4.4 Sustainability of Business – Website Content

Table 4.17: Descriptive Statistics of Sustainability of Business - Website Content

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	The food delivery app structure is easy to follow.	3.885	1	0.830	7
2	The design of the food delivery app is easy to see.	3.832	2	0.891	4
3	All the terms and conditions (e.g., payment, warranty) of the delivery app are easy to understand.	3.689	6	0.929	2
4	The information about the products for your interest is sufficient for you to make a purchase decision.	3.730	4	0.862	6
5	The website has an ideal amount of images.	3.597	7	0.948	1

6	**The images on the website are appealing.**	3.704	5	0.923	3
7	**The contents of this website are useful for my using purpose.**	3.742	3	0.876	5

Source: Developed for the research

Table 4.17 justify the data of central tendencies measurement of an independent variable, website content regarding the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.885** which relate to the statement "**The food delivery app structure is easy to follow**.". While the least value of mean ranking is **3.597** relate to the statement "**The website has an ideal amount of images**.". For the ranking of standard deviation, the highest ranking has a value of **0.948** relate to the statement "**The website has an ideal amount of images**.". While the value of lowest standard deviation ranking is **0.830** which relate to the statement "**The food delivery app structure is easy to follow**.".

4.1.4.5 Sustainability of Business – Website Quality

Table 4.18: Descriptive Statistics of Sustainability of Business - Website Quality

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	**I get what I ordered from the online retailer.**	3.870	1	0.907	4

2	**My order was delivered by the time promised.**	3.579	6	1.032	1
3	**Transactions with the online retailer are error-free.**	3.648	5	0.936	2
4	**This online retailer has adequate security features.**	3.709	3	0.858	6
5	**The online retailer gives prompt service to customers.**	3.722	2	0.899	5
6	**The website provides high-quality information.**	3.673	4	0.923	3

Source: Developed for the research

Table 4.18 has shown the data of central tendencies measurement of an independent variable, website quality based on the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.870** which relate to the statement "**I get what I ordered from the online retailer**.". While the value of lowest mean ranking which is **3.579** relate to the statement "**My order was delivered by the time promised**.". For the ranking of standard deviation, the highest ranking has a value of **1.032** relate to the statement "**My order was delivered by the time promised**.". While the value of lowest standard deviation ranking is **0.858** which relate to the statement "**This online retailer has adequate security features**.".

4.1.4.6 Sustainability of Business – Customer Loyalty

Table 4.19: Descriptive Statistics of Sustainability of Business - Customer Loyalty

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	I intend to continue using the mobile food delivery app in the future.	3.890	1	0.827	4
2	I satisfied with the purchase experience.	3.839	2	0.873	3
3	I always use the same food delivery app.	3.765	3	0.951	2
4	The use of a food delivery app has become a habit for me.	3.602	4	0.992	1

Source: Developed for the research

Table 4.19 justify the data of central tendencies measurement of the mediator, customer loyalty based on the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **3.890** which relate to the statement "**I intend to continue using the mobile food delivery app in the future**.". While the least value of mean ranking which is **3.602** relate to the statement "**The use of a food delivery app has become a habit for me**.". For the ranking of standard deviation, the highest ranking has a value of **0.992** relate to the statement "**The use of a food delivery app has become a habit for me**.". While the value of lowest standard deviation ranking is **0.827** which relate to the statement "**I intend to continue using the mobile food delivery app in the future**.".

4.1.4.7 Sustainability of Business – Sustainability of Restaurant

Table 4.20: Descriptive Statistics of Sustainability of Business - Sustainability of Restaurant

No	Statement	Mean	Mean Ranking	Standard Deviation	Standard Deviation ranking
1	I would prefer to visit the restaurant which provides delivery service more often.	3.832	5	0.896	2
2	I would like to choose the restaurant with a good rating.	4.092	1	0.867	3
3	I think people in urban areas more likely to use the food delivery app.	3.911	3	0.842	5
4	The usage of food delivery apps would be higher in the high population area.	4.010	2	0.848	4
5	I would like to choose a restaurant which offers more variety of choices in the delivery app.	3.893	4	0.908	1

Source: Developed for the research

Table 4.20 has shown the data of central tendencies measurement of the dependent variable, sustainability of restaurant based on the mean and standard deviation which arranged with a ranking sequence.

The highest mean ranking has a value of **4.092** which relate to the statement "**I**

would like to choose the restaurant with a good rating.". While the value of lowest mean ranking which is **3.832** relate to the statement "**I would prefer to visit the restaurant which provides delivery service more often**.". For the ranking of standard deviation, the highest ranking has a value of **0.908** relate to the statement "**I would like to choose a restaurant which offers more variety of choices in the delivery app**.". While the value of lowest standard deviation ranking is **0.842** which relate to the statement "**I think people in urban areas more likely to use the food delivery app**.".

4.2 Result of PLS SEM

This section is to illustrate the data result and test accuracy and reliability of the result. The validity of result will also be tested.

4.2.1 Internal Consistency

4.2.1.1 Cronbach's Alpha (CA)

Table 4.21: Cronbach's Alpha Results from PLS Algorithm

Variables	Number of items/indicators	Cronbach's Alpha	Result
Convenience	5	**0.819**	**Reliable**
Customer Loyalty	4	**0.771**	**Reliable**
Perceived Value	6	**0.860**	**Reliable**
Sustainability of Restaurant	5	**0.829**	**Reliable**
Trust in Internet	6	**0.875**	**Reliable**
Website Content	7	**0.867**	**Reliable**
Website Quality	6	**0.877**	**Reliable**

Source: Questionnaires result

The rule of Cronbach's Alpha (CA) is the result must be equal or higher than 0.7 to secure that coefficients are reliable. Higher CA means the result of the variable is more consistent. As **Table 4.21** shown all variables are reliable as their CA are higher than 0.7. **Website Quality** have the highest CA result which is **0.877**, followed by **Trust in Internet** which is **0.875**, **Website Content** is **0.867**, **Perceived Value** is **0.86**, **Sustainability of Restaurant** is **0.829**, **Convenience** is **0.819** and the lowest CA is **Customer Loyalty** which is **0.771**.

4.2.1.2 Composite Reliability (CR)

Table 4.22: Composite Reliability Results from PLS Algorithm

Variables	Number of items/indicators	Composite reliability	Result
Convenience	5	**0.873**	**Reliable**
Customer Loyalty	4	**0.853**	**Reliable**
Perceived Value	6	**0.896**	**Reliable**
Sustainability of Restaurant	5	**0.880**	**Reliable**
Trust in Internet	6	**0.906**	**Reliable**
Website Content	7	**0.898**	**Reliable**
Website Quality	6	**0.907**	**Reliable**

Source: Questionnaires result

The condition to ensure the result of the variables can be reliable in Composite

Reliability (CR), the result must be equal to or above 0.6. **Table 4.22** shows all the variables' result are having more than 0.6, therefore, all the results are reliable. The highest CR is **0.907** which is **Website Quality**, followed by **Trust in Internet** which is **0.906**, **Website Content** is **0.898**, **Perceived Value** is **0.896**, **Sustainability of Restaurant** is **0.880**, **Convenience** is **0.873** and the lowest CR is **0.853** which is **Customer Loyalty**.

4.2.2 Convergent Validity Test

4.2.2.1 Average Variance Extracted (AVE)

Table 4.23: Average Variance Extracted (AVE) Result from PLS Algorithm

Variables	Number of items/ indicators	AVE	Result
Convenience	5	**0.580**	**Fulfilled**
Customer Loyalty	4	**0.593**	**Fulfilled**
Perceived Value	6	**0.588**	**Fulfilled**
Sustainability of Restaurant	5	**0.595**	**Fulfilled**
Trust in Internet	6	**0.616**	**Fulfilled**
Website Content	7	**0.557**	**Fulfilled**
Website Quality	6	**0.619**	**Fulfilled**

Source: Questionnaires result

The Average Variance Extracted (AVE) shall equal to or exceed 0.5 to ensure the validity of the result. In this research, **Website Quality** has the highest validity which is **0.619** compare to the other variables, the second highest validity is **0.616** by **Trust in Internet**, followed by the **Sustainability of Restaurant** is **0.595**, **Customer Loyalty** is **0.593**, **Perceived Value** is **0.588**, **Convenience** is **0.580** and **Website Content** is **0.557** which having lowest validity. From **Table 4.23**, the AVE results have shown that all the variables fulfilled the requirement of AVE.

4.2.2.2 Factor Loadings

Table 4.24: Outer Loading Results from PLS Algorithm

	C	L	PV	S	T	WC	WQ
C1	0.807						
C2	0.76						
C3	0.757						
C4	0.768						
C5	0.714						
L1		0.809					
L2		0.825					
L3		0.711					
L4		0.729					
PV1			0.768				
PV2			0.763				
PV3			0.772				
PV4			0.775				
PV5			0.758				
PV6			0.766				
S1				0.725			
S2				0.793			
S3				0.777			
S4				0.807			
S5				0.753			
T1					0.768		
T2					0.794		

T3	0.836		
T4	0.806		
T5	0.757		
T6	0.745		
WC1		0.744	
WC2		0.752	
WC3		0.784	
WC4		0.727	
WC5		0.705	
WC6		0.771	
WC7		0.736	
WQ1			0.759
WQ2			0.779
WQ3			0.804
WQ4			0.790
WQ5			0.799
WQ6			0.788

Source: Questionnaires result

Table 4.24 is the result of factor loadings based on the questions in the survey. Each question's factor loading result must be equal to or higher than 0.7 to ensure the results are valid. The table shown all the questions' result fulfilled the valid condition as **all the results are higher than 0.7**.

4.2.3 Discriminant Validity Test

4.2.3.1 Fornell-Larcker

Table 4.25: Fornell-Larcker Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
Convenience	**0.762**						
Customer Loyalty	0.741	**0.770**					
Perceived Value	0.751	0.805	**0.767**				
Sustainability of Restaurant	0.759	0.735	0.739	**0.771**			
Trust in Internet	0.714	0.691	0.774	**0.633**	**0.785**		
Website Content	0.755	0.758	0.797	0.701	0.752	**0.746**	
Website Quality	0.675	0.693	0.763	0.675	0.706	0.738	**0.787**

Source: Questionnaires result

Based on the **Table 4.25**, the discriminant validity evaluate by using the fornell-larcker. The square root of each AVE was higher than the correlation coefficients except for the perceived value and website content. Based on this result, the **discriminant validity can be accepted**.

4.2.3.2 Cross Loadings

Table 4.26: Cross Loadings Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
C1	**0.807**	0.621	0.635	0.702	0.557	0.622	0.547
C2	**0.760**	0.581	0.577	0.607	0.569	0.570	0.574
C3	**0.757**	0.495	0.512	0.491	0.528	0.572	0.465
C4	**0.768**	0.578	0.594	0.497	0.560	0.555	0.536
C5	**0.714**	0.532	0.529	0.576	0.501	0.556	0.434
L1	0.619	**0.809**	0.644	0.620	0.505	0.607	0.482
L2	0.655	**0.825**	0.719	0.643	0.612	0.664	0.636
L3	0.472	**0.711**	0.487	0.505	0.467	0.491	0.463
L4	0.512	**0.729**	0.608	0.475	0.537	0.554	0.544
PV1	0.601	0.640	**0.768**	0.574	0.595	0.606	0.643
PV2	0.582	0.620	**0.763**	0.584	0.589	0.587	0.564
PV3	0.591	0.626	**0.772**	0.582	0.593	0.602	0.579
PV4	0.516	0.616	**0.775**	0.541	0.576	0.625	0.570
PV5	0.544	0.578	**0.758**	0.544	0.613	0.624	0.560
PV6	0.619	0.624	**0.766**	0.573	0.599	0.626	0.592
S1	0.541	0.589	0.556	**0.725**	0.491	0.532	0.571
S2	0.641	0.574	0.560	**0.793**	0.486	0.548	0.502
S3	0.548	0.543	0.554	**0.777**	0.453	0.489	0.509
S4	0.580	0.541	0.566	**0.807**	0.469	0.546	0.469
S5	0.613	0.578	0.606	**0.753**	0.533	0.583	0.544
T1	0.557	0.541	0.591	0.479	**0.768**	0.592	0.560
T2	0.557	0.518	0.585	0.475	**0.794**	0.580	0.574
T3	0.578	0.556	0.642	0.515	**0.836**	0.628	0.559

T4	0.587	0.557	0.611	0.519	**0.806**	0.574	0.533
T5	0.471	0.492	0.559	0.399	**0.757**	0.551	0.531
T6	0.599	0.581	0.649	0.575	**0.745**	0.612	0.567
WC1	0.587	0.611	0.585	0.584	0.554	**0.744**	0.538
WC2	0.550	0.567	0.577	0.519	0.565	**0.752**	0.541
WC3	0.563	0.581	0.621	0.505	0.549	**0.784**	0.572
WC4	0.547	0.535	0.575	0.493	0.558	**0.727**	0.525
WC5	0.464	0.485	0.546	0.424	0.550	**0.705**	0.516
WC6	0.607	0.602	0.620	0.545	0.582	**0.771**	0.585
WC7	0.612	0.563	0.635	0.575	0.573	**0.736**	0.573
WQ1	0.563	0.539	0.585	0.590	0.489	0.540	**0.759**
WQ2	0.425	0.472	0.559	0.437	0.509	0.509	**0.779**
WQ3	0.489	0.517	0.568	0.515	0.560	0.543	**0.804**
WQ4	0.528	0.541	0.635	0.516	0.598	0.607	**0.790**
WQ5	0.550	0.574	0.621	0.534	0.557	0.625	**0.799**
WQ6	0.604	0.609	0.623	0.577	0.607	0.636	**0.788**

Source: Questionnaires result

The bold figure means that the value of Customer Loyalty with the relative questions is larger than the Sustainability of Restaurant, Convenience, Perceived Value, Trust in Internet, Website Content and Website Quality. The **result of cross loading was fulfilled** in **Table 4.26**.

4.2.3.3 Heterotrait-Monotrait Ratio (HTMT)

Table 4.27: Hetetotrait-Monotrait Ratio (HTMT) Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
Convenience							
Customer Loyalty	**0.919**						
Perceived Value	**0.890**	**0.979**					
Sustainability of Restaurant	**0.914**	**0.908**	**0.873**				
Trust in Internet	**0.839**	**0.836**	**0.891**	**0.737**			
Website Content	**0.893**	**0.917**	**0.923**	**0.821**	**0.863**		
Website Quality	**0.786**	**0.834**	**0.875**	**0.785**	**0.803**	**0.840**	

Source: Questionnaires result

The above values of the heterotrait-monotrait is **less than 1.0** which mean that the discriminant validity exist among the reflective construct as there was no relation between the measurements. The purpose of heterotrait-monotrait is to detect collinearity problem among the constructs. In **Table 4.27**, the C**ustomer Loyalty and Perceived Value is 0.979 got the highest correlation**, followed by P**erceived Value and Website Content with 0.923, Convenience and Customer Loyalty with 0.919, Customer Loyalty and Website Content with 0.917, Convenience and Sustainability of Restaurant which is 0.914, and Customer Loyalty and Sustainability of Restaurant with 0.908**. The values stated above were **closely to multicollinearity problem**.

4.2.4 Assessment of Structural Model

4.2.4.1 Collinearity Statistic (VIF)

Table 4.28: VIF Results

	Customer loyalty	Sustainability of Restaurant
Convenience	2.856	
Customer Loyalty		1.000
Perceived Value	4.027	
Sustainability of Restaurant		
Trust in Internet	3.066	
Website Content	3.663	
Website Quality	2.810	

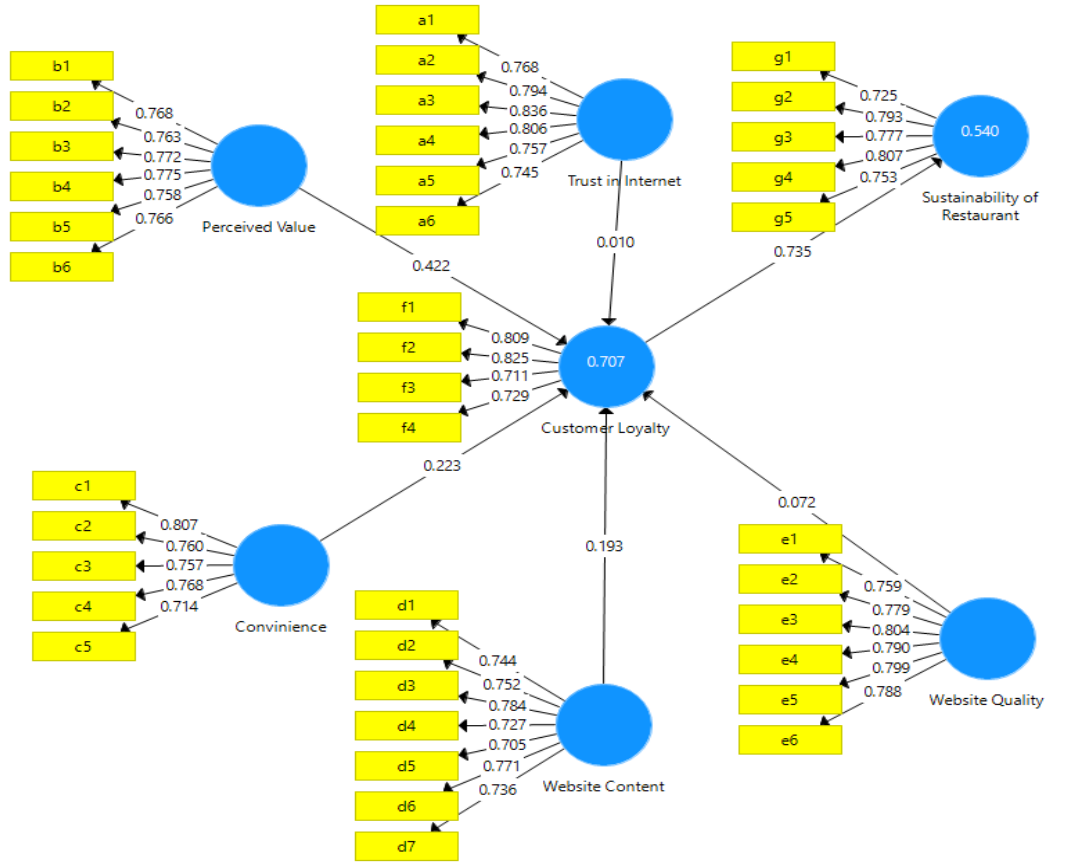
Source: Questionnaires result

From the **Table 4.28**, **all the variables satisfy since all the value were lower than 5**, which mean that has **no multicollinearity problem** between the independent variables and Customer Loyalty. It shows **1.000 for Sustainability of Restaurant**, followed by **2.856 for Customer Loyalty and Convenience, 4.027 for Customer Loyalty and Perceived Value, 3.066 for Customer Loyalty and Trust in Internet, 3.663 for Customer Loyalty and Website Content, 2.810 for Customer Loyalty and Website Quality.**

4.2.4.2 Explanation of Target Endogenous Variable Variance

4.2.4.2.1 Coefficient of Determination (R-Square)

Figure 4.14: PLS SEM Results from PLS Algorithm



Source: Smart PLS 3

Figure 4.14 shows the result of R-square of the research. Customer Loyalty as the mediator indicate the R-square result of 0.707. The figure indicated it is **70.7% of the variance in Customer Loyalty** can be explained by the exogenous variables of **Convenience, Perceived Value, Trust in Internet, Website Content and Website Quality**. While the Sustainability of Restaurant shown result of R-square of 0.540 indicates the C**ustomer Loyalty** can be explained about **54% of the variance in the Sustainability of Restaurant**.

4.2.4.3 Effect size (F-square)

Table 4.29: Effect size (F-square) Results

Latent variables	Customer loyalty	Sustainability of Restaurant
Convenience	0.059	
Customer Loyalty		1.172
Perceived Value	0.151	
Sustainability of Restaurant		
Trust in Internet	**0.000**	
Website Content	0.035	
Website Quality	**0.006**	

Source: Smart PLS 3

Table 4.29 shown result of F-square in this study. The result of F-square between C**ustomer Loyalty and Sustainability of Restaurant is 1.172**. The **Customer Loyalty is the highest effect towards the Sustainability of Restaurant**, followed by P**erceived Value with 0.151, Convenience with 0.059 and Website Content with 0.035 are affected on Customer Loyalty**. However, **Website Content with0.006 did not explained much towards the Customer Loyalty** and **Trust in Internet with 0.000** had **no effected-on Customer Loyalty**.

4.2.4.4 Significant of Variable

4.2.4.4.1 Inner Model Path Coefficient by Using Bootstrapping

Table 4.30: Path Coefficient Result from Bootstrapping

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
Loyalty - Sustainability	0.735	0.736	0.036	20.399	0.000	**Supported**
Convenience - Loyalty	0.223	0.226	0.058	3.829	0.000	**Supported**
Perceived Value - Loyalty	0.422	0.421	0.063	6.703	0.000	**Supported**
Trust in Internet - Loyalty	0.010	0.006	0.051	0.189	0.850	**Not Supported**
Website Content - Loyalty	0.193	0.191	0.071	2.703	0.007	**Supported**
Website Quality - Loyalty	0.072	0.076	0.058	1.258	0.209	**Not Supported**

Note: ***Significantly level at 5% (two- tailed).

Source: Smart PLS

The result of bootstrapping defines the significant of each variable. The mediator of the research is Customer Loyalty. The result of T statistic must be larger than 1.96 at the significant level of 5%, and p-values must be less than 0.05. From the **Table 4.30**, the T statistic result defines the relationship between **Customer Loyalty and Sustainability of Restaurant which is 20.399**, followed by

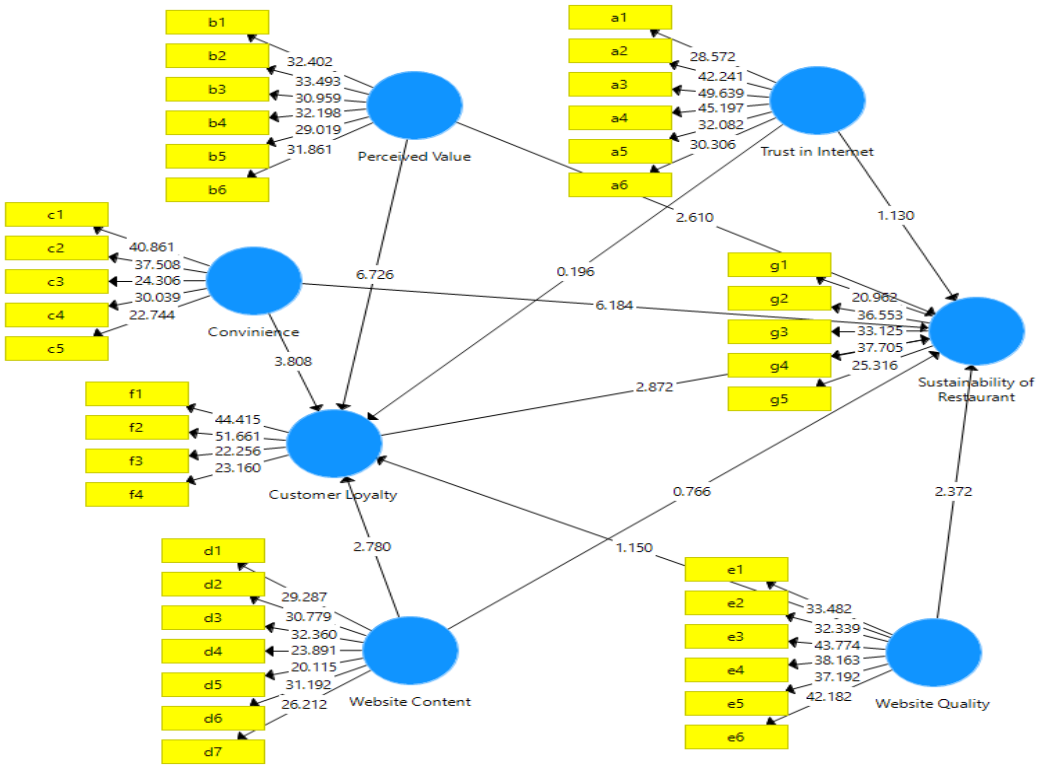
P**erceived Value and Customer Loyalty with 6.703, Convenience and Customer Loyalty with 3.829, Website Content and Customer Loyalty with 2.703**. Where else the **Website Quality and Customer Loyalty is 1.258 and Trust in Internet and Customer Loyalty is 0.189 are not statistically significant** since the t value lower than 1.96.

4.2.4.5 Mediating Effect

Variance accounted for (VAF) is to indicate the mediator (customer loyalty) is it influential in this research. The formula is:

$$VAF = \frac{\text{Indirect effect}}{\text{Total effect}} = \frac{\text{Path A x Path B}}{\text{Path A x Path B) + Path D}}$$

Figure 4.15: Mediating Effect from Bootstrapping



Sources: Smart PLS

Table 4.31 Mediating Effect

Independent Variables	Indirect Effect (IE)	Total Effect (TE)	VAF (%)	Mediating Effect
Convenience	$Path\ A: 3.808 \times Path\ B: 2.872 = 10.937$	$Path\ AB: 10.937 + Path\ D: 6.184 = 17.121$	$\frac{IE: 10.937}{TE: 17.121} = 63.88$	**Partial Mediation**
Perceived Value	$Path\ A: 6.726 \times Path\ B: 2.872 = 19.317$	$Path\ AB: 19.317 + Path\ D: 2.610 = 21.927$	$\frac{IE: 19.317}{TE: 21.927} = 88.10$	**Full Mediation**
Trust in Internet	$Path\ A: 0.196 \times Path\ B: 2.872 = 0.563$	$Path\ AB: 0.563 + Path\ D: 1.130 = 1.693$	$\frac{IE: 0.563}{TE: 1.693} = 33.25$	**Partial Mediation**
Website Content	$Path\ A: 2.780 \times Path\ B: 2.872 = 7.984$	$Path\ AB: 7.984 + Path\ D: 0.766 = 8.750$	$\frac{IE: 7.984}{TE: 8.750} = 91.25$	**Full Mediation**
Website Quality	$Path\ A: 1.150 \times Path\ B: 2.872 = 3.303$	$Path\ AB: 3.303 + Path\ D: 2.372 = 5.675$	$\frac{IE: 3.303}{TE: 5.675} = 58.20$	**Partial Mediation**

Source: Developed for the research

Mediation effect of every independent variable towards the sustainability of restaurant which mediated by customer loyalty were showed based on **Table 4.31**. Two independent variables have full mediation effect which are **Website Content with 91.25%** and **Perceived Value with 88.10%**. While there are three independent variables having partial mediation effect which are **Convenience with 63.88%**, **Website Quality with 58.20%** and **Trust in Internet with 33.25%**.

4.3 Summary of Results

4.3.1 Result Summary for Reflective Measurement Models

Table 4.32: Result Summary for Reflective Measurement Models

Latent Variables	Indicators	Internal Consistency Reliability		Convergent validity		Discriminant validity
		Cronbach's Alpha	Composite Reliability	AVE	Factor Loading	HTMT
Convenience	C1	0.819	0.873	0.580	0.807	**Valid**
	C2				0.76	**Valid**
	C3				0.757	**Valid**
	C4				0.768	**Valid**
	C5				0.714	**Valid**
Customer Loyalty	L1	0.771	0.853	0.593	0.809	**Valid**
	L2				0.825	**Valid**
	L3				0.711	**Valid**
	L4				0.729	**Valid**
Perceived	PV1	0.860	0.896	0.588	0.768	**Valid**

Value	PV2				0.763	**Valid**
	PV3				0.772	**Valid**
	PV4				0.775	**Valid**
	PV5				0.758	**Valid**
	PV6				0.766	**Valid**
Sustainability of Restaurant	S1	0.829	0.880	0.595	0.725	**Valid**
	S2				0.793	**Valid**
	S3				0.777	**Valid**
	S4				0.807	**Valid**
	S5				0.753	**Valid**
Trust in Internet	T1	0.875	0.906	0.616	0.798	**Valid**
	T2				0.794	**Valid**
	T3				0.836	**Valid**
	T4				0.806	**Valid**
	T5				0.757	**Valid**
	T6				0.745	**Valid**
Website Content	WC1	0.867	0.898	0.557	0.744	**Valid**
	WC2				0.752	**Valid**
	WC3				0.784	**Valid**
	WC4				0.727	**Valid**
	WC5				0.705	**Valid**
	WC6				0.771	**Valid**

	WC7				0.736	**Valid**
Website Quality	WQ1	0.877	0.907	0.619	0.759	**Valid**
	WQ2				0.779	**Valid**
	WQ3				0.804	**Valid**
	WQ4				0.790	**Valid**
	WQ5				0.799	**Valid**
	WQ6				0.788	**Valid**

Source: Developed for the research

4.3.2: Result Summary for Mediating Effect

Table 4.33: Result Summary for Mediating Effect

Effect	Path	Path Coefficient	Indirect Effect	Total Effect	VAF (%)	T value	P value	Decision
Convenience								
Direct without mediator	**C - S**	6.184	Not applicable (N/A)			5.859	0.000	**Accepted**
Indirect with	**C - S**	6.184	N/A	17.121	63.88	3.875	0.000	**Accepted**
	C - L	3.808	10.937					

mediator	**L - S**	2.872						
				Perceived Value				
Direct without mediator	**PV - S**	2.610	Not applicable (N/A)			2.869	0.004	**Accepted**
Indirect with mediator	**PV - S**	2.610	N/A	21.927	88.10	6.406	0.000	**Accepted**
	PV - L	6.726	19.317					
	L - S	2.872						
				Trust in Internet				
Direct without mediator	**T - S**	1.130	Not applicable (N/A)			1.163	0.245	**Rejected**
Indirect with mediator	**T - S**	1.130	N/A	1.693	33.25	0.192	0.847	**Rejected**
	T - L	0.196	0.563					
	L - S	2.872						
				Website Content				
Direct without mediator	**WC - S**	0.766	Not applicable (N/A)			0.789	0.431	**Rejected**
Indirect with mediator	**WC - S**	0.766	N/A	8.750	91.25	2.806	0.005	**Accepted**
	WC - L	2.780	7.984					
	L - S	2.872						
				Website Quality				

Direct without mediator	**WQ - S**	2.372	Not applicable (N/A)			2.310	0.021	**Accepted**
Indirect with mediator	**WQ - S**	2.372	N/A					
	WQ - L	1.150	3.303	5.675	58.20	1.118	0.264	**Rejected**
	L - S	2.872						

Note: Significant level at 0.05 (two-tailed)

Source: Developed for the research

4.4 Conclusion

In short, PLS SEM is a software that utilize to analyze the relationships between the variables and mediator. The data collected from questionnaires were analyzed via descriptive analysis during chapter 4. The data of the survey is in tabular or chart form to ensure the information show in a simple and clear way. In addition, the result of the reliability and validity of variables were computed. In next chapter, the outcome of the analysis will be further explained clearly.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

Chapter 5 discuss about discovery to justify all objectives, tested hypotheses in this study. Next, the implication of the study will be provided for policy practitioners and researchers as references. Last but not least, the limitation faced in this research will be described in detail with recommendations attached.

5.1 Discussion of Major Findings

Table 5.1: Summary of Statistical Analysis

Dependent Variable	Independent Variable	T- Statistics	Result
Sustainability of Restaurant	Trust in Internet	0.189	Negative Significant Value
Sustainability of Restaurant	Convenience	***3.829	Positive Significant Value
Sustainability of Restaurant	Website Quality	1.258	Negative Significant Value
Sustainability of	Website Content	***2.703	Positive Significant

Restaurant			Value
Sustainability of Restaurant	Perceived value	***6.703	Positive Significant Value
Sustainability of Restaurant	Customer Loyalty	***20.399	Positive Significant Value

The table above indicates that the value of T-statistic exceeds 1.96 have the positive significant relationship between the variables meanwhile lower than 1.96 have negative significant relationship between the variables.

5.1.1 Trust in Internet

From the result of Table 5.1, the variable of Trust in Internet from consumer shows that a negative significant relationship with the customer loyalty to the restaurant. The statement supported by Ivanauskiene & Volungenaite (2014) as consumer's trust to internet is not a necessary qualification for them to conduct their purchase decision. Instead of the attribution of Trust in Internet, consumer would be more concern on the reputation and quality of the restaurant (Xin, 2015). Furthermore, Eid (2011) stated that there is only a weak relationship between Trust in Internet and Customer Loyalty, which can emphasize the reliability of the result above as other variables could be more effective towards the customer loyalty to the restaurant.

5.1.2 Convenience

The existence of food delivery service has brought a lot of benefits to the consumer especially for these few years. The simplicity of functioning food delivery app is the most significant reason for consumers to conduct the payment via online (Goh, 2017). Kaura (2015) defined that the significant relationship between Convenience and Customer Loyalty based on the repeating attitude of the consumer, consumers tend to order from the restaurant they used to. The consumer's satisfaction level towards the food delivery apps could affect the consumer's intention whether to repurchase with the restaurant, this statement supported by Hossain (2013), as the researcher pointed that the satisfaction is the key to retain and attract customer.

5.1.3 Website Quality

The relationship of Website Quality and Customer Loyalty towards the restaurant is less crucial as the result shown above that is negative significant relationship between these two variables. Che (2010) declared that consumer decides their food order based on the Website Quality, they are more likely to concern about the food quality of the restaurant instead. Therefore, it shows that the Website Quality is unable to affect their order decision through food delivery apps. Furthermore, website quality is less related to consumer's loyalty, the website quality is considered as the structural capital of the restaurant, and yet, structural capital is not an essential term to affect loyalty of customer towards the restaurant. The statement supported by Chen, Huang & Davison (2017).

5.1.4 Website Content

Website Content also showed a significant variable. From the Table 5.1, website content exhibited a relationship with Customer Loyalty which are significant. Supported by Godwin, Kallol & Peter (2010), the researches stated that there is a significant relationship between website content and customer loyalty because most of the customers will be tempted to order from food delivery apps when there is a high quality website content which included a useful contents and a good user experience. Besides that, the website content which included the variety of food selection, attractive design and ease of use of website also having a significant relationship between customer loyalty (Toufaily, Ricard & Perrien, 2013).

5.1.5 Perceived Value

From the Table 5.1, it presented that the Perceived Value have the positive significant relationship with Customer Loyalty. (Jiang, Jun, Yang 2015), this study clarifies that there is a significant relationship between Customer Loyalty. The customer Perceived Value not necessarily need to associate with the price, whereas is based on the service that given and this will conduct a positive impact on Customer Loyalty. Moreover, (Chen & Hu 2010) stated that the powerful customer Perceived Value influence on Customer Loyalty.

5.1.6 Customer Loyalty

Lastly, the Customer Loyalty also manifest as a significant variable. As the Table 5.1 proved that the Customer Loyalty has a positive significant relationship with Sustainability of Restaurant. The result supported by Ghane, Fathian & Gholamian (2011) pointed that there is a significant relationship between Customer Loyalty and Sustainability of Restaurant. The power of Customer Loyalty of a restaurant conduct a stable profitability and sustainability of a restaurant and help to maintain the customer base.

Furthermore, the customers which have the experienced that ordering food delivery will be acquainted with the organization's delivery service and it would lead a sustainable profit for a restaurant. Others than that, the Customers Loyalty will make customers more interested and repurchase at the restaurants, it may lead a Sustainability of a Restaurant (Fazlzadeh, Faryabi, Darabi & Zahedi).

5.2 Research Implication

From the result on this chapter, the five independent variables except trust in internet and website quality have positive significant relationship towards the customer loyalty (mediator) and hence shown a significant relationship towards sustainability of business. This means that the independent variables such as perceived value, convenience and website content will positively affect the restaurant from outsourcing their food delivery service to the food delivery platform.

Firstly, the research project would be useful for the food delivery platforms that wish to increase customer usage of their applications. When the food delivery platform is user friendly and able to provide sufficient information of a restaurant on their applications, users will tend to continue using it as they get sufficient information when making decision. Besides, restaurants would also be benefited from the food delivery applications. Website content is important for the restaurants especially new start up restaurant. As people who do not physically visit the restaurant would have their first impression depends on the information or content shown by the food delivery applications. In order to increase consumer usage, increase exposure and customer base for food delivery platform and restaurants, food delivery platform must develop a user friendly and reliable application that provide sufficient information in order to gain the long-term advantage for themselves and restaurants.

In addition, customer would also be benefited from the food delivery services as they are able to purchase with reasonable price. Customer can place order based on their preference as the food delivery platform offers a wide range of selection of product which includes western foods, desserts, fast foods and so on. Other than that, food delivery platform offers various restaurant choices with wide range of

price, consumers can purchase based on their budget as well. By using food delivery services, they are able to avoid the heavy traffic, waiting cost and even cost saving as some of the food delivery platforms and restaurant would offers a discount or vouchers every month to encourage the usage.

Last but not least, the rate and feedback function of the food delivery platform would benefit the food delivery platforms, restaurants and customers. In order to encourage user to continue using their applications, food delivery platforms should take all the feedbacks from customers into account and make improvement such as the user friendliness and sufficiency of information on the applications as one of the independent variables which is website content have significant relationship between sustainability of business. Once improvements have been made, customers' satisfaction level will be increase and hence having positive relationship towards the sustainability of business.

5.3 Limitation

While doing the research, there are several limitations that should be identified as the limitations might decrease the accuracy and validity of the results. The first limitation is about the time constraints, the Movement Control Order (MCO) in COVID-19 pandemic was affected the progression in collecting data. It is very difficult to get more sample as google form is the only way we could get the data collection, therefore, google form was created to continue collecting the data. The prohibition of face-to-face collection of questionnaires has caused spending more time in doing the google form as well as the filtering questions on the questionnaires

due to there is no way to target our respondents accurately without filtering questions. Apart from difficulty in collecting data, the time used to spend time in studying how to operate the PLS-SEM software due to unfamiliar with the PLS-SEM software.

In addition, there are total 392 respondents who participated in this study. Another limitation that faced in this research is about the sample and demographic. Great majority are Chinese, there are 356 Chinese respondents (90.82%). According to Department of Statistics Malaysia (2020), the percentage of citizens population by ethnic group are Malay (69.6%), Chinese (22.6%), Indian (6.8%) and others (1%). Therefore, the questionnaires and results of this research are inaccurate enough to represent the consumers who used food delivery apps in Perak, Kuala Lumpur and Selangor. According to Krejcie & Morgan (1970), the sample size is 384 if the population exceed more than 1 million. As the population in Malaysia is far higher than 1 million, the sample size in the research is only 392 which might not sufficient and accurate enough. To get a more accurate result for the research, larger sample size is needed.

Lastly, the language used in developing the survey is also a limitation in this study. Non-probability sampling might generate deviation in the results. For example, the survey only used English to develop the questions. This could lead the target respondents to be decreased because some of the respondents may only understand other languages instead of English. Thus, the outcome of study may inaccurate enough to represent the whole target respondents of this research which are people who used food delivery apps in Perak, Kuala Lumpur and Selangor because the respondents who cannot read English were excluded.

5.4 Recommendation

To have greater understanding and research of future related study, some recommendations are provided to future researchers. First, researcher could choose a relatively better timing to start their research. As an example, COVID-19 pandemic is currently affecting the world and Movement Control Order (MCO) is being applied in Malaysia. Public are unable to go out as often and gather in crowded area. Researcher that have the intention/ planning to start a research could consider postpone their research. Starting a research in difficult timing such as COVID-19 pandemic is going to heavily reduce the type of data collecting methods as well as increase difficulty level of the collection. While ongoing research can consider pausing their research, extend research period or find alternative ways to collect data. Ongoing researchers can distribute questionnaire through online or plan out online interviews.

Besides, researcher can research about software that will be used in research. Different software such as PLS-SEM, SPSS and etc. have different user interface. Choosing a suitable software could smoothen the research process. Researcher should also familiarize the chosen software before the research. Watch videos and articles on ways to operate and run test are good ways to understand the software. Then, more details such as four languages survey (English, Malay, Indian and Chinese) can be added into the questionnaire distributed. This could increase target respondents who only capable of understanding one of the languages.

Finally, future researcher can expand the sample size and distribute the questions through various ways such as physical distribution in public and crowded area, sharing of link in larger Facebook group and encourage other respondents to

share it to reach even more people. Ensure ease of use for the public in physical questionnaire distribution to encourage higher participants of public. Ensure the online questionnaire is suitable for all type of devices since more people are using phone and tablets rather than desktops. Face-to-face interview could also be incorporated to further understand preference of different group types. Researcher could also pick different location with different major ethnic group located; this action will ensure balance diversification of different demographic group which better represent Malaysia.

5.5 Conclusion

Overall, the study is to investigate the determinants that affect the sustainability of business that applied food delivery system. The results of the hypotheses were computed via PLS-SEM by using 392 questionnaires that collected from the targeted respondents. Most of the independent variables were significant in the study, however, there are two independent variables insignificant such as website quality and trust in internet. The mediator, customer loyalty was also significant in this research. In short, this study can be act as a reference for future researchers and policy makers in the area of restaurants who applied food delivery system in order to having understanding and improvement.

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APPENDIX

Appendix 3.3.1 The number of users that applied the food delivery service

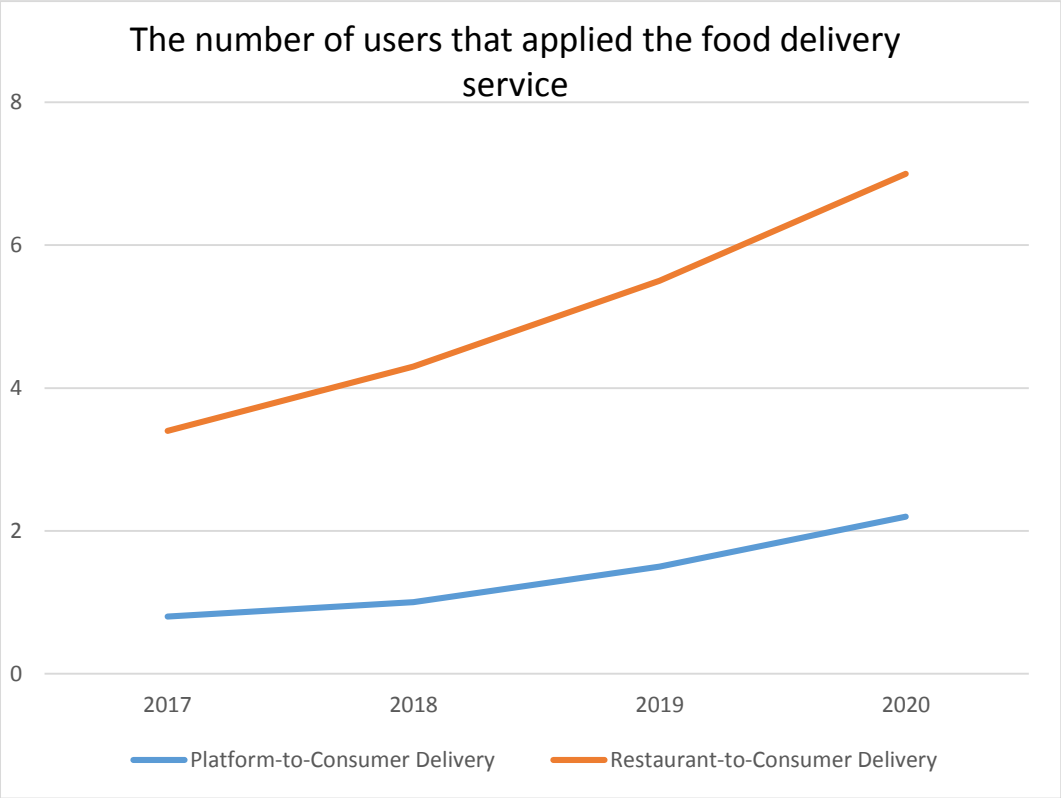


Figure 3.1: The number of users that applied the food delivery service

Source: Statista Market Forecast (Malaysia)

Appendix 4.2.1.1 Cronbach's Alpha (CA)

Table 4.21: Cronbach's Alpha Results from PLS Algorithm

Variables	Number of items/indicators	Cronbach's Alpha	Result
Convenience	5	**0.819**	**Reliable**
Customer Loyalty	4	**0.771**	**Reliable**
Perceived Value	6	**0.860**	**Reliable**
Sustainability of Restaurant	5	**0.829**	**Reliable**
Trust in Internet	6	**0.875**	**Reliable**
Website Content	7	**0.867**	**Reliable**
Website Quality	6	**0.877**	**Reliable**

Source: Questionnaires result

Appendix 4.2.1.2 Composite Reliability (CR)

Table 4.22: Composite Reliability Results from PLS Algorithm

Variables	Number of items/indicators	Composite reliability	Result
Convenience	5	**0.873**	**Reliable**
Customer Loyalty	4	**0.853**	**Reliable**
Perceived Value	6	**0.896**	**Reliable**
Sustainability of Restaurant	5	**0.880**	**Reliable**
Trust in Internet	6	**0.906**	**Reliable**
Website Content	7	**0.898**	**Reliable**
Website Quality	6	**0.907**	**Reliable**

Source: Questionnaires result

Appendix 4.2.2.1 Average Variance Extracted (AVE)

Table 4.23: Average Variance Extracted (AVE) Result from PLS Algorithm

Variables	Number of items/ indicators	AVE	Result
Convenience	5	**0.580**	**Fulfilled**
Customer Loyalty	4	**0.593**	**Fulfilled**
Perceived Value	6	**0.588**	**Fulfilled**
Sustainability of Restaurant	5	**0.595**	**Fulfilled**
Trust in Internet	6	**0.616**	**Fulfilled**
Website Content	7	**0.557**	**Fulfilled**
Website Quality	6	**0.619**	**Fulfilled**

Source: Questionnaires result

Appendix 4.2.2.2 Factor Loadings

Table 4.24: Outer Loading Results from PLS Algorithm

	C	L	PV	S	T	WC	WQ
C1	0.807						
C2	0.76						
C3	0.757						
C4	0.768						
C5	0.714						
L1		0.809					
L2		0.825					
L3		0.711					
L4		0.729					
PV1			0.768				
PV2			0.763				
PV3			0.772				
PV4			0.775				
PV5			0.758				
PV6			0.766				
S1				0.725			
S2				0.793			
S3				0.777			
S4				0.807			
S5				0.753			
T1					0.768		
T2					0.794		
T3					0.836		
T4					0.806		
T5					0.757		
T6					0.745		
WC1						0.744	
WC2						0.752	
WC3						0.784	
WC4						0.727	
WC5						0.705	
WC6						0.771	
WC7						0.736	
WQ1							0.759
WQ2							0.779
WQ3							0.804
WQ4							0.790
WQ5							0.799

WQ6	0.788

Source: Questionnaires result

Appendix 4.2.3.1 Fornell-Larcker

Table 4.25: Fornell-Larcker Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
Convenience	**0.762**						
Customer Loyalty	0.741	**0.770**					
Perceived Value	0.751	0.805	**0.767**				
Sustainability of Restaurant	0.759	0.735	0.739	**0.771**			
Trust in Internet	0.714	0.691	0.774	**0.633**	**0.785**		
Website Content	0.755	0.758	0.797	0.701	0.752	**0.746**	
Website Quality	0.675	0.693	0.763	0.675	0.706	0.738	**0.787**

Source: Questionnaires result

4.2.3.2 Cross Loadings

Table 4.26: Cross Loadings Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
C1	**0.807**	0.621	0.635	0.702	0.557	0.622	0.547
C2	**0.760**	0.581	0.577	0.607	0.569	0.570	0.574
C3	**0.757**	0.495	0.512	0.491	0.528	0.572	0.465
C4	**0.768**	0.578	0.594	0.497	0.560	0.555	0.536
C5	**0.714**	0.532	0.529	0.576	0.501	0.556	0.434
L1	0.619	**0.809**	0.644	0.620	0.505	0.607	0.482
L2	0.655	**0.825**	0.719	0.643	0.612	0.664	0.636
L3	0.472	**0.711**	0.487	0.505	0.467	0.491	0.463
L4	0.512	**0.729**	0.608	0.475	0.537	0.554	0.544
PV1	0.601	0.640	**0.768**	0.574	0.595	0.606	0.643
PV2	0.582	0.620	**0.763**	0.584	0.589	0.587	0.564
PV3	0.591	0.626	**0.772**	0.582	0.593	0.602	0.579
PV4	0.516	0.616	**0.775**	0.541	0.576	0.625	0.570
PV5	0.544	0.578	**0.758**	0.544	0.613	0.624	0.560
PV6	0.619	0.624	**0.766**	0.573	0.599	0.626	0.592
S1	0.541	0.589	0.556	**0.725**	0.491	0.532	0.571
S2	0.641	0.574	0.560	**0.793**	0.486	0.548	0.502
S3	0.548	0.543	0.554	**0.777**	0.453	0.489	0.509
S4	0.580	0.541	0.566	**0.807**	0.469	0.546	0.469
S5	0.613	0.578	0.606	**0.753**	0.533	0.583	0.544
T1	0.557	0.541	0.591	0.479	**0.768**	0.592	0.560
T2	0.557	0.518	0.585	0.475	**0.794**	0.580	0.574
T3	0.578	0.556	0.642	0.515	**0.836**	0.628	0.559

T4	0.587	0.557	0.611	0.519	**0.806**	0.574	0.533
T5	0.471	0.492	0.559	0.399	**0.757**	0.551	0.531
T6	0.599	0.581	0.649	0.575	**0.745**	0.612	0.567
WC1	0.587	0.611	0.585	0.584	0.554	**0.744**	0.538
WC2	0.550	0.567	0.577	0.519	0.565	**0.752**	0.541
WC3	0.563	0.581	0.621	0.505	0.549	**0.784**	0.572
WC4	0.547	0.535	0.575	0.493	0.558	**0.727**	0.525
WC5	0.464	0.485	0.546	0.424	0.550	**0.705**	0.516
WC6	0.607	0.602	0.620	0.545	0.582	**0.771**	0.585
WC7	0.612	0.563	0.635	0.575	0.573	**0.736**	0.573
WQ1	0.563	0.539	0.585	0.590	0.489	0.540	**0.759**
WQ2	0.425	0.472	0.559	0.437	0.509	0.509	**0.779**
WQ3	0.489	0.517	0.568	0.515	0.560	0.543	**0.804**
WQ4	0.528	0.541	0.635	0.516	0.598	0.607	**0.790**
WQ5	0.550	0.574	0.621	0.534	0.557	0.625	**0.799**
WQ6	0.604	0.609	0.623	0.577	0.607	0.636	**0.788**

Source: Questionnaires result

Appendix 4.2.3.3 Heterotrait-Monotrait Ratio (HTMT)

Table 4.27: Hetetotrait-Monotrait Ratio (HTMT) Result from PLS Algorithm

	C	L	PV	S	T	WC	WQ
Convenience							
Customer Loyalty	**0.919**						
Perceived Value	**0.890**	**0.979**					
Sustainability of Restaurant	**0.914**	**0.908**	**0.873**				
Trust in Internet	**0.839**	**0.836**	**0.891**	**0.737**			
Website Content	**0.893**	**0.917**	**0.923**	**0.821**	**0.863**		
Website Quality	**0.786**	**0.834**	**0.875**	**0.785**	**0.803**	**0.840**	

Source: Questionnaires result

Appendix 4.2.4.1 Collinearity Statistic (VIF)

Table 4.28: VIF Results

	Customer loyalty	Sustainability of Restaurant
Convenience	2.856	
Customer Loyalty		1.000
Perceived Value	4.027	
Sustainability of Restaurant		
Trust in Internet	3.066	
Website Content	3.663	
Website Quality	2.810	

Source: Questionnaires result

Appendix 4.2.4.3 Effect size (F-square)

Table 4.29: Effect size (F-square) Results

Latent variables	Customer loyalty	Sustainability of Restaurant
Convenience	0.059	
Customer Loyalty		1.172
Perceived Value	0.151	
Sustainability of Restaurant		
Trust in Internet	**0.000**	
Website Content	0.035	
Website Quality	**0.006**	

Source: Smart PLS 3

Appendix 4.2.4.4 Path Coefficient Result from Bootstrapping

Table 4.30: Path Coefficient Result from Bootstrapping

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
Loyalty - Sustainability	0.735	0.736	0.036	20.399	0.000	**Supported**
Convenience - Loyalty	0.223	0.226	0.058	3.829	0.000	**Supported**
Perceived Value - Loyalty	0.422	0.421	0.063	6.703	0.000	**Supported**
Trust in Internet - Loyalty	0.010	0.006	0.051	0.189	0.850	**Not Supported**
Website Content - Loyalty	0.193	0.191	0.071	2.703	0.007	**Supported**
Website Quality - Loyalty	0.072	0.076	0.058	1.258	0.209	**Not Supported**

Note: ***Significantly level at 5% (two- tailed).

Source: Smart PLS

Appendix 4.2.4.5 Mediating Effect Result

Table 4.31 Mediating Effect

Independent Variables	Indirect Effect (IE)	Total Effect (TE)	VAF (%)	Mediating Effect
Convenience	$Path\ A: 3.808 \times Path\ B: 2.872 = 10.937$	$Path\ AB: 10.937 + Path\ D: 6.184 = 17.121$	$\frac{IE: 10.937}{TE: 17.121} = 63.88$	Partial Mediation
Perceived Value	$Path\ A: 6.726 \times Path\ B: 2.872 = 19.317$	$Path\ AB: 19.317 + Path\ D: 2.610 = 21.927$	$\frac{IE: 19.317}{TE: 21.927} = 88.10$	Full Mediation
Trust in Internet	$Path\ A: 0.196 \times Path\ B: 2.872 = 0.563$	$Path\ AB: 0.563 + Path\ D: 1.130 = 1.693$	$\frac{IE: 0.563}{TE: 1.693} = 33.25$	Partial Mediation
Website Content	$Path\ A: 2.780 \times Path\ B: 2.872 = 7.984$	$Path\ AB: 7.984 + Path\ D: 0.766 = 8.750$	$\frac{IE: 7.984}{TE: 8.750} = 91.25$	Full Mediation
Website Quality	$Path\ A: 1.150 \times Path\ B: 2.872 = 3.303$	$Path\ AB: 3.303 + Path\ D: 2.372 = 5.675$	$\frac{IE: 3.303}{TE: 5.675} = 58.20$	Partial Mediation

Source: Developed for the research

Appendix 4.3.1 Result Summary for Reflective Measurement Models

Table 4.32: Result Summary for Reflective Measurement Models

Latent Variables	Indicators	Internal Consistency Reliability		Convergent validity		Discriminant validity
		Cronbach's Alpha	Composite Reliability	AVE	Factor Loading	HTMT
Convenience	C1	0.819	0.873	0.580	0.807	**Valid**
	C2				0.76	**Valid**
	C3				0.757	**Valid**
	C4				0.768	**Valid**
	C5				0.714	**Valid**
Customer Loyalty	L1	0.771	0.853	0.593	0.809	**Valid**
	L2				0.825	**Valid**
	L3				0.711	**Valid**
	L4				0.729	**Valid**
Perceived Value	PV1	0.860	0.896	0.588	0.768	**Valid**
	PV2				0.763	**Valid**
	PV3				0.772	**Valid**
	PV4				0.775	**Valid**
	PV5				0.758	**Valid**
	PV6				0.766	**Valid**
Sustainability	S1	0.829	0.880	0.595	0.725	**Valid**

of Restaurant	S2				0.793	**Valid**
	S3				0.777	**Valid**
	S4				0.807	**Valid**
	S5				0.753	**Valid**
Trust in Internet	T1	0.875	0.906	0.616	0.798	**Valid**
	T2				0.794	**Valid**
	T3				0.836	**Valid**
	T4				0.806	**Valid**
	T5				0.757	**Valid**
	T6				0.745	**Valid**
Website Content	WC1	0.867	0.898	0.557	0.744	**Valid**
	WC2				0.752	**Valid**
	WC3				0.784	**Valid**
	WC4				0.727	**Valid**
	WC5				0.705	**Valid**
	WC6				0.771	**Valid**
	WC7				0.736	**Valid**
Website Quality	WQ1	0.877	0.907	0.619	0.759	**Valid**
	WQ2				0.779	**Valid**
	WQ3				0.804	**Valid**
	WQ4				0.790	**Valid**
	WQ5				0.799	**Valid**

WQ6	0.788	**Valid**

Source: Developed for the research

Appendix 4.3.2: Result Summary for Mediating Effect

Table 4.33: Result Summary for Mediating Effect

Effect	Path	Path Coefficient	Indirect Effect	Total Effect	VAF (%)	T value	P value	Decision
Convenience								
Direct without mediator	**C - S**	6.184	Not applicable (N/A)			5.859	0.000	**Accepted**
Indirect with mediator	**C - S**	6.184	N/A	17.121	63.88	3.875	0.000	**Accepted**
	C - L	3.808	10.937					
	L - S	2.872						
Perceived Value								
Direct without mediator	**PV - S**	2.610	Not applicable (N/A)			2.869	0.004	**Accepted**
Indirect with mediator	**PV - S**	2.610	N/A	21.927	88.10	6.406	0.000	**Accepted**
	PV - L	6.726	19.317					
	L - S	2.872						
Trust in Internet								
Direct without mediator	**T - S**	1.130	Not applicable (N/A)			1.163	0.245	**Rejected**

Indirect with mediator	**T - S**	1.130	N/A	1.693	33.25	0.192	0.847	**Rejected**
	T - L	0.196	0.563					
	L - S	2.872						
Website Content								
Direct without mediator	**WC - S**	0.766	Not applicable (N/A)			0.789	0.431	**Rejected**
Indirect with mediator	**WC - S**	0.766	N/A	8.750	91.25	2.806	0.005	**Accepted**
	WC - L	2.780	7.984					
	L - S	2.872						
Website Quality								
Direct without mediator	**WQ - S**	2.372	Not applicable (N/A)			2.310	0.021	**Accepted**
Indirect with mediator	**WQ - S**	2.372	N/A	5.675	58.20	1.118	0.264	**Rejected**
	WQ - L	1.150	3.303					
	L - S	2.872						

Note: Significant level at 0.05 (two-tailed)

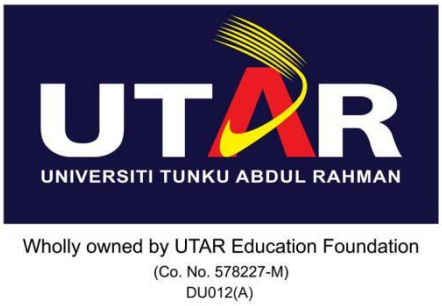
Source: Developed for the research

Appendix 5.1 Summary of Statistical Analysis

Table 5.1: Summary of Statistical Analysis

Dependent Variable	Independent Variable	T- Statistics	Result
Sustainability of Restaurant	Trust in Internet	0.189	Negative Significant Value
Sustainability of Restaurant	Convenience	***3.829	Positive Significant Value
Sustainability of Restaurant	Website Quality	1.258	Negative Significant Value
Sustainability of Restaurant	Website Content	***2.703	Positive Significant Value
Sustainability of Restaurant	Perceived value	***6.703	Positive Significant Value
Sustainability of Restaurant	Customer Loyalty	***20.399	Positive Significant Value

Appendix 6.1 Survey Questionnaire



UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

PERAK CAMPUS

Dear Sir/ Madam

We are carrying out a Final Year Project in Universiti Tunku Abdul Rahman (UTAR), entitled: "Determinant of food delivery through customer loyalty towards the sustainability of business".

The research aim to examine the use of food delivery e-commerce system by the business

All information collected from this survey will be kept strictly confidential. Your participation in this survey will be appreciated. If you have any comment or suggestion in this study, please do not hesitate to contact us by email.

Thank you for your time and co-operation.

Name	Student ID	E-mail
1. Goh Se Yeen	1602208	seyeen98@gmail.com
2. Lau Xue Ni	1603629	xue5732ni@gmail.com
3. Ong Mei Jeat	1605088	meijeatmx0123@gmail.com

4. Tan Hong Wei 1604023 hongwei980917@gmail.com

5. Tiew Ming Lun 1602339 lun881998@hotmail.com

DETERMINANT OF FOOD DELIVERY THROUGH CUSTOMER LOYALTY TOWARDS THE SUSTAINABILITY OF BUSINESS

DISCLAIMER: The following questions are for analytical purpose only and all answers and information in this section will be kept confidential. It will not be used to specifically identify any individual.

A. Demographic information

1) Gender
a. Male
b. Female

2) Race
a) Chinese
b) Malay
c) India
d) Other:_____

3) Age
a) 18-24
b) 25-39
c) 40-60
d) 60 above

4) Current Location
a) Perak
b) Kuala Lumpur
c) Selangor
d) Other:_____

5) Occupation
a) Student

b) Self employment
c) Employment
d) Other:_____

If you are self-employed/employment, please answer the following question 5.

6) Monthly income level
a) No income
b) RM 1000 - RM 2000
c) RM 2001 - RM3000
d) RM 3001 - RM4000
e) RM 4001 and above

If you are student, please answer the following question 6,7 & 8.

7) Education Level:
a) SPM
b) STPM
c) Foundation
d) Diploma
e) Undergraduate
f) Postgraduate

8) Course of study:

_____

9) Year of study:

_____

10) Have you tried before ordering food through delivery apps (eg:Food Panda, Grab food, Dahmakan)?
a) Yes
b) No
c) Never

11) How often you will order food online?
a) Daily
b) Weekly
c) Monthly

d) Fortnightly
e) Never

12) In general, how do you prefer to order food?
a) Over the application of mobile or tablet
b) Over the website of desktop or laptop
c) Over the telephone (direct contact)
d) Never

13) How did you know about the electronically ordering process?
a) Flyer/ Catalogue
b) Friends & Family
c) Internet
d) Newspaper

14) Which carrier do you use the most?
a) Grab food
b) Food panda
c) Dah makan
d) Deliver eat
e) Other:_____

15) Which payment options do you use the most?
a) Cash on delivery
b) Online Banking
c) Debit/credit card
d) Other:_____

Section B : Please tick only one.

Trust in internet

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**

1	I trust the food delivery app would not expose my card details.					
2	I trust food delivery app would not expose my current location.					
3	I feel secure in ordering food through the food delivery app.					
4	I can rely on the service offered by food delivery app.					
5	The food delivery app can know my preference.					
6	The food delivery apps fulfill my expectations.					

Perceived value

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	I feel I am getting a good food product at a reasonable price when I use the food delivery app.					
2	Using the food delivery app is worth it for me to devote my time and efforts.					
3	Compared with conventional food purchasing ways, it is wise to use the food delivery app.					
4	I received excellent service from the online retailer.					
5	This online retailer offers a wide selection of product which meets my needs.					
6	I enjoy giving other users of this online retailer advice.					

Convenience

		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1	Using the food delivery app would be convenient for me.					
2	The food delivery app offers a variety of restaurant choices.					
3	The food delivery app offers a variety of food choices.					
4	I can order food with a wide range of prices through the food delivery app.					
5	Heavy traffic on the roads is one of the reason to use food delivery apps.					

Website content

		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1	The food delivery app structure is easy to follow.					
2	The design of food delivery app is easy to see.					
3	All the terms and conditions (e.g., payment, warranty) of the delivery app are easy to understand.					
4	The information about the products for your interest is sufficient for you to make a purchase decision.					
5	The website has an ideal amount of images.					
6	The images on the website are appealing.					
7	The contents of this website are useful for my using purpose.					

Website quality

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	I get what I ordered from the online retailer.					
2	My order was delivered by the time promised.					
3	Transactions with the online retailer are error-free.					
4	This online retailer has adequate security features.					
5	The online retailer gives prompt service to customers.					
6	The website provides high quality information.					

Customer loyalty

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	I intend to continue using mobile food delivery app in the future.					
2	I satisfied with the purchase experience.					
3	I always use the same food delivery app.					
4	The use of a food delivery app has become a habit for me.					

Sustainability of restaurant

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	I would prefer to visit the restaurant which provides delivery service more often.					

2	I would like to choose the restaurant with good rating.					
3	I think people in urban area more likely to use the food delivery app.					
4	The usage of food delivery apps would be higher in high population area.					
5	I would like to choose a restaurant which offer more variety of choices in the delivery app.					

Section C

1. Describe your experience by using the food delivery apps in your past.