

DETERMINANTS OF FOOD DELIVERY APPS (FDA)  
ADOPTION RELUCTANCE AMONG  
GENERATION Y IN MALAYSIA

BY

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



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## DEDICATION

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## LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AR	Adoption Reluctance
AVE	Average Variance Extracted
CA	Cronbach Alpha Reliability
CI	Computational Intelligence
CR	Composite Reliability
CB-SEM	Covariance-based SEM
DV	Dependent Variable
E	Experience
e-WOM	Electronic Word-of-Mouth
FDA	Food Delivery Application
FL	Factor Loading
FMA	Features of Mobile Applications
Gen Y	Generation Y
HTMT	Heterotrait-Monotrait Ratio
IV	Independent Variable
MCO	Movement Control Order
MFOAs	Mobile Food Ordering Apps System

ML	Maximum Likelihood
OPC	Online Privacy Concerns
PLS-SEM	Partial Least Squares Structural Equation Modeling
PEU	Perceived Ease of Use
PU	Perceived Usefulness
PR	Perceived Risks
SDA	Semantic Data Analysis
SEM	Structural Equation Modeling
SI	Social Influence
SOP	Standard Operating Procedures
TAM	Technology Acceptance Model
VIF	Variance Inflation Factor
WOM	Word-of-Mouth

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## PREFACE

Ever since Jan of 2021, Malaysia was barraged by a list of restrictions. These restrictions include quarantine, social distancing, as well as the dreaded lockdown caused by the COVID-19 outbreak. As a result, many business holders were impacted, forcing them to shift their businesses online. Especially with the online FDA, with the impetuous development of these online platforms, the quality of the applications may cause uncertainty in the consumer's mind. It is undeniable that the online food industry has bloomed, but the market has yet to fully mature. There was little to no research studying the reluctance behaviour towards food delivery apps (FDA). Thus, the focus of this study will investigate the potentially antipathetic or pessimistic factors that may influence the reluctance behaviour of consumers and seeing whether experience plays a role in affecting their adoption of technology. Hence the title “Determinants of food delivery apps adoption reluctance among generation Y in Malaysia”.

## ABSTRACT

The food industry may not be the industry most affected by the COVID-19 pandemic, but it is apparent that many retail outlets have caused their owners to be at their wit's end. But the ones who persist had to change their perspective and integrate with the online application market, thus came the FDA. Technology has yet again proven to be beneficial to all industries. Thus, the Technology Acceptance Model (TAM) was used to investigate human behaviour and their intentions by simulating how users accept and adopt the technology. Using their model as a reference the factors used are social influence, perceived risks, and features of mobile applications. It also includes a moderator which will be used to investigate the relationship it has toward the factors subsequently the reluctance behaviour. These factors would be the pillar of what affects perceived ease of use and perceived usefulness, followed by the intentions that can lastly manipulate behaviour (reluctance). Six hypotheses were developed in hopes of identifying the relationship the factors have towards reluctance behaviour as well as the moderator. Questionnaires were prepped and readily disseminated using online forms to 160 respondents within the millennial generation. The results that were decoded and analysed using SmartPLS were rather intriguing but would require further research to solidify the theories. Not least, managerial implications were proposed in hopes that future researchers, policy makers, and practitioners can be utilized as a reference for further experimental methodologies in improving the current state for online FDA in Malaysia.



## **CHAPTER 1: RESEARCH OVERVIEW**

### **1.0 Introduction**

This study is to determine the factors that affect customers' adoption reluctance towards FDA among generation y in Malaysia. This section would be covering the research background, research problem, objectives, and the study's significance.

### **1.1 Research Background**

The introduction of mobile applications has caused a surge in smartphone usage and has become a new global norm (De Luna, Montoro-Rios & Liebana-Cabanillas, 2017). Apart from traditional communication functions, smartphones enable users to access the internet to perform multiple daily tasks as they are integrated into a device (Jin Jeong, Suh & Gweon, 2020). Also, internet connectivity has allowed smartphone users to access a diversified list of mobile applications simultaneously (Islam & Mazumder, 2010).

According to Statista (2020), smartphone users around the world have reached 3.8 billion in 2021 and are predicted to be increasing in the coming years. The rising smartphone usage as a universal device helps social networking, effective information search as well as the commencement of e-commerce (Zimmermann, Auinger & Riedl, 2019). Online businesses have grown rapidly under the rapid drive of information technologies, which has continuously impacted the economic development of a country (Guangliang, Feng, Wang & Xiao, 2014). Furthermore, online shopping also serves as an easy solution for busy individuals (Rahman et al., 2018), as they perceived it is convenient and timesaving.

The food and beverages industry (F&B) in Malaysia is determined as a fast-growing industry that serves as one of the main benefactors to the national income (Flanders Investment & Trade Malaysia, 2020). Unfortunately, the COVID-19 pandemic has devastated the F&B market. Despite the pandemic, many F&B business retailers seek to expand as an online service to secure their business while others have resorted to retrenchment. Business retailer's creative approaches have led to various innovative methods in providing online food ordering and delivery services to their customers (See-Kwong et al., 2017). Ever since a major increase of online shoppers and an emerging new trend of online food delivery service have taken over. Online food delivery services are a continuously growing marketing strategy due to their efficient, effective, and hedonic motivations (Daud & Yoong, 2019).

Online food delivery services are also recognized as a new eating out which delivers prepared meals and food that was ordered online for direct consumption (Lau & Ng, 2019). Consumers can access restaurant websites as well as installing FDA on smartphones whenever (Moondra et al., 2020). The online food delivery platforms in Malaysia break into two types are Restaurant-to-Consumer Delivery and Platform-to-Consumer Delivery. The Restaurant-to-Consumer Delivery is typically associated directly with fast-food restaurants like KFC, McDonald's, and Pizza Hut; while the Platform-to-Consumer Delivery providers refer to the local restaurant which needs to partner with the third-party platforms as they do not offer delivery service by themselves (Li, Miroso, Bremer, 2020). In Malaysia, there are numerous local FDA available in the market, such as GrabFood, DeliverEat, and FoodPanda (Lirong, 2021).

The invention of FDA allowed people to own better lifestyles with enhanced convenience in terms of saving time and reducing the hassle of cooking or eating out (Lirong, 2021). By using FDA, consumers can order various types of food from anytime and anywhere, and be able to enjoy their meals easily with a few clicks. Also, individuals can discover new restaurants that offer food delivery services within their location and select payment methods as they preferred.

## 1.2 Research Problem

According to Acumen Research and Consulting, Malaysian population growth, people's consumption, and technology adoption have led to the inevitable rise of online food delivery. The online food delivery business has gained momentum within the period of Covid-19 since the masses have chosen to order food online to reduce physical contact and avoid spreading illness. Since these apps support contactless and cashless delivery, it bodes well to reduce victims (Razak, 2020). During the MCO (Movement Control Order) period, the public is encouraged to stay at home with no dine-in available (Povera & Harun, 2021), and restricted to drive within a fixed radius of 10 kilometres from home. Therefore, most people will choose delivery services through mobile apps and takeaway services to reduce inconveniences (Zhao & Bacao, 2020; Jamaludin, 2020). Hence, online food delivery has become a norm in society's daily lives.

According to Statista (2021), the user penetration of online meal orders and delivery through the Platform-to-Consumer Delivery segment is expected to hit 10.2% in 2021, showing a new high since 2017. Besides, the total number of online food delivery customers has increased by 61% after MCO began (VODUS, n.d.). This demonstrated adoption of the FDA has become a new normal and routine in Malaysia (Chai & Yat, 2019), by changing consumer purchase decisions and new shopping habits from traditional to online (Ramya & Ali, 2016).

In 2020, the total population of generation y has accounted for 40.86% in Malaysia (IndexMundi Home, n.d.). Generation Y are those who seek convenience and high technology in their life so that they can enjoy their time better. According to San (2015), Generation Y individuals are otherwise known as digital natives as they are experiencing rapid technological changes along with their lives, can rapidly adopt new technologies, and are willing to take advantage of the technologies. Furthermore, the majority of Generation Y is considered as a price-conscious generation as they have a high concentration in money spending (Landrum, 2017), and is determined as the "priority audience" of food delivery services among all generations because they are the most willing to spend on online food delivery orders, and they believe it saves time and costs (Adroit Market Research, 2019; Abd

Rashid et al., 2016). Thus, the current study that targeting generation y would lead to better accuracy related to the determinants. Also, statistics interpreted that different gender has vary reactions on FDA usage frequency in Malaysia, where females are heavy users of FDA in comparison with the male (Statista, 2020).

However, there are some who do not favour using the applications, especially the restaurant owners who deemed that it would affect their brand in a negative manner (Leung & Low, 2020). Moreover, customers who are unfamiliar with technology may be hesitant to try out automated self-service apps because they may be afraid of getting confused about technology (Chorneukar, 2014). Most people are afraid to try new things due to the risk of failure or afraid the result is not as expected (Editor, 2018). While ordering through an online FDA, customers may worry about the least interaction within the staff that caused misunderstanding. Thus, reluctance occurs when a new way of ordering food platforms is introduced towards customers because it takes time for customers to be well adopted in new technology with an innovative mindset. (See-Kwong et al., 2017).

Consumers may also feel uncertain in terms of security, payment method, quality, fees, and prices when these local restaurants are going to cooperate with FDA (Ghosh, 2020). Studies show that online privacy concerns (OPC) do affect attitudes towards online purchases since the users are unwilling to surrender information to FDA (Anic, Škare & Milaković, 2019). News also reported that the FDA rider harassing a customer through the contact number obtained from the delivery details. (“Foodpanda delivery rider”, 2021). The higher charges on food prices and delivery fees are also the major problems often faced by app users (Ye-Eun, Sang-Hoon, Min-Sun, 2017). Also, the low quality of food has made people reluctant to order food online (Hu & Chen, 2018).

Nevertheless, Albarracin et al (2005) mentioned that the attitude-behavior relationship involves prior experience thus justifying the means for certain adoption processes. Experience is defined as the mental processes accumulated that’s been converted into emotions such as feelings and sensations (Farrell, 1950). Thus, an individual’s bad experiences towards a system may derive from the functionalities of the app itself and lead him to reluctant behavior. Honorary et al (2019)

investigated that smartphone users are unwilling to adopt an app because they undergo negative experiences that reduce their interest in app usage. Negative attitude and negative word-of-mouth are the consequences in terms of accessing dissatisfied experiences (Kim et al., 2015). Huang et al (2019) indicated that TAM is applicable to study the determinants of the consumer intention towards mobile apps adoption that are driven by the consumer experience. Whereas the extension of TAM 2 illustrated that prior experience of using the technology could moderate the subjective norm and adoption decision (Wingo et al., 2017).

Despite these behaviors, it is crucial to identify the rationales for the changing of consumer behavior towards FDA in Malaysia; studies that focus on the FDA sector among generation y consider little in the present literature. Presently, there are quite several previous studies that were emphasized customer adoption behavior, customer satisfaction, and intention towards online FDA (Lee, 2017; Fauzi, 2019; Sharma & Waheed, 2018; Alalwan, 2020; Ray et al., 2019; Rasli, 2020) in foreign countries or targeted on college students (Rasli et al., 2020; Chang et al., 2020; Yeo et al., 2017). Hence, the purpose of this research is to establish a better comprehension of factors that cause reluctance to adopt FDA among generation y in Malaysia. By figuring these gaps, this research can be established to the FDA developer and the F&B providers to better-understanding consumer opinion towards the apps and making further improvements.

### **1.3 Research Objectives**

This study intends to examine the relationship between Generation Y's reluctance towards the adoption of FDA and the respective determinants. The specific objectives of this study are as follows:

1. To investigate the impact of mobile apps features, social influence, and perceived risks towards the Generation Y's reluctance of the FDA adoption.
2. To examine the role of experience in facilitating the relationship between Gen Y's adoption reluctance towards FDA and its determinants.

### **1.3.1 Research Questions**

- i. What are the determinants of the Gen Y's adoption reluctance towards FDA?
- ii. How does experience facilitate the relationship between Gen Y's adoption reluctance and the determinants?

## **1.4 Research Significance**

Although an indagation of the thesis that pioneered the ever-rising popularity of FDA worldwide had been done numerously, the contrasting opinions that reject this ideology are still infrequent. This methodological research was designed to recognize the market productivity of the food delivery service applications and understand their capacity to affect consumerism as well as the lesser-seen side of consumerism (Das & Ghose, 2019). This helps not only business owners but also marketers that intend on improving their marketing opportunities by understanding the conflicting side of the industry. Malaysian FDA developers can also benefit from this research. This contributes by assisting in solving the issues within the local industry to develop trust and loyalty among business owners and consumers. With the researched data, businesses can manipulate the already existing market attraction strategies and can further develop their knowledge about not only FDA but discover what are the credentials that may cause a change in the perception towards the services offered. It also helps them avoid riskier decisions as well as knowing what are the factors that cause the behaviour that rejects certain adoption to more importantly try to improve on the quality of life changes the current era has to offer.

Before understanding the potential relationship that technological traits have on consumer behaviour, the forethought would include research models that are crucial to further the study on FDA. This research uses the determinants of FDA adoption reluctance among local generation y as a bedrock to instigate the progress of mobile technological studies which would aid researchers and customers in the future. With

the case of FDA, it may very well help by applying to a potential study to further the theoretical standpoint on understanding the relationship between intention, behaviour, willingness, efforts, and other variables. Additionally, individuals who appreciate the understanding of human behaviour can also study the existing knowledge proxy to the way humans react to negative variables to understand the thresholds that manipulate human conscious decision-making processes for avoidance and rejection. Having to understand the role of human prior experience as a moderator can also contribute to future academics to extend the studies that encompass intentions, desire, technology, and develop an understanding of how variables are more than individual points but can be integrated into a larger part of a conceptual structure within human lives.

## **1.5 Conclusion**

Chapter 1 has highlighted the main purpose and provides clear guidance to further development of this research.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter would concentrate on the review of underlying theories that will be used to develop relevant variables. Besides, the framework and hypotheses are developed to study determinants of FDA adoption reluctance among generation Y in Malaysia.

### **2.1 Technology Acceptance Model (TAM) and its Application in this Study**

This section highlights the theory of related conceptual framework which is the Technology Acceptance Model (TAM).

According to Silva (2015), TAM theory is to stimulates how users accept and use technology. People may be conscious that FDA are a combination of purchases using technology. Thus, there would be adaptations to new technologies while consumers perform online transactions on apps (Suleman et al., 2019). The existence of TAM theory has allowed the IT-related field to grasp complex human behaviour towards technology (Ma & Liu, 2004). Nowadays, TAM has also become the most influential model in realizing the degree of human intention towards potential adoption or reluctance of the technology (Marangunic & Granic, 2015).

The TAM theory was originally established by Fred Davis in 1986. This theory is formulated to predict and determine the individual's acceptance towards information systems and technology usage (Surendran, 2012). However, the first modified version of the TAM model was introduced in 1989 by adding two specific beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU) (Lai, 2017).



Perceived Usefulness (PU) refers to the degree to which an individual belief towards the usage of technology will produce efficient outcomes; while Perceived Ease of Use (PEU) is a belief that using technology only required little effort (Farahat, 2012; Lai, 2017). Besides, both factors are influenced by external variables. The external variables refer to the belief of a person towards a system influenced by other external factors such as social, cultural, and political factors (Lai, 2017). Lastly, the final version of TAM reflects the finding of variables derives from both the Perceived Usefulness (PU) and Perceived Ease of Use (PEU) will direct influence users' behavioural intention, which ends up bring effect towards the actual usage behaviour of technology (Farahat, 2012). Figure 1 illustrates the final version of TAM.

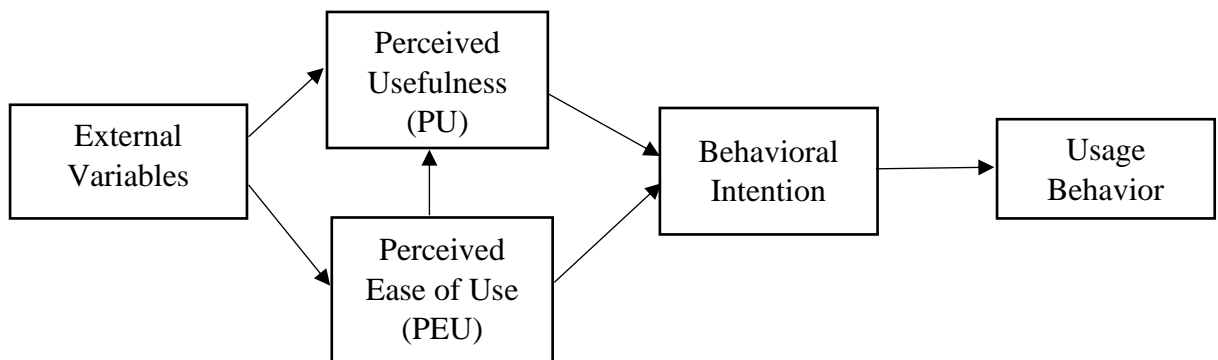


Figure 2.1. Final version of Technology Acceptance Model (TAM). Adapted from Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision sciences*, 27(3), 451-481.

TAM is widely adopted in various past studies in the field of food marketing. For instance, Preetha and Iswarya (2019) investigated the intention to use FDA (Preetha & Iswarya 2019), study on the impact of online FDA on restaurant business (Gupta, 2019), and research focused on relationships between the FDA attributes toward customer perceived value among the young working adults (Azizul et al., 2019). Given its appropriateness, the final version of TAM which shows in Figure 1 is utilized in the current study to examine factors that lead to the adoption reluctance towards FDA among Generation Y.

The external variables are common to influence the perceived usefulness (PU) and perceived ease of use (PEU) (Lai, 2017). Social influence is a common external factor that affects an individual behaviour on social networking services selection. (Huang & Chang, 2020). However, most of generation Y are still reluctant to adopt FDA although they are defined as innately digital natives (Bae & Han, 2020) due to the negative comments on social media regarding the apps. In this case, it has generated a bad reputation that affected the apps' trustworthiness which influences its perceived usefulness (PU).

Besides, service delay is also a major factor that contributes to user's reject to adopt food delivery services, where it may degrade the food in terms of quality (Zainol et al., 2013; Hong et al., 2016). This would lead to dissatisfaction that influences purchasing decisions, perceived usefulness (PU), and causing a higher degree of reluctance behaviour towards FDA usage. Finally, the complexity of the Mobile Food Ordering Apps system (MFOAs) that could be reflected in the time and effort required from customers (Kaewkitipong, Chen & Ractham, 2016) will affect the perceived ease of use (PEU) of FDA. The users are required to obtain the extra efforts and knowledge to use the FDA and to perform additional functions. Thus, some generation y who are not familiar with online payment will claim the app is complex and difficult to use. While this led to the reason causing reluctance to use FDA.

## **2.2 Review of Variables**

### **2.2.1 Dependent Variable- Adoption Reluctance (AR)**

Agwu (2013) stated that intention is intrinsic as it is a desire or objective to act in a certain way. While the intention is to remain where an individual has not yet practice or translated his desire into action. Meanwhile, adoption reluctance is referred to the action carried out towards innovations by an individual by converting his desire into actual action. This presented the linkage of psychology intention to adoption reluctance behaviour.

According to the theory of reasoned action, behaviour is determined directly by the intention, because generally, individuals behave as they intend to do, within the available context (Moon & Kim, 2001). Whereas intention is defined by the individual's attitudes and personal feelings toward the behaviour. Fishbein and Ajzen (1975) explained that intention would result as behaviour when there is an opportunity to perform. By applying this perspective to the mobile app context, users are expected to utilize the service when the opportunity is given to do so (Hur, Lee & Choo, 2017).

Usage intention could be explained through behavioural intention, where it measures the likelihood of an individual decides a technology adoption (Priyanka, 2012). Meanwhile, Yuan et al (2019), found that only satisfied users are willing to continue their usage intention. Furthermore, it can be seen that the characteristic to demonstrate usage intention in terms of behavioural intention is interesting level (Yau & Ho, 2015). Whereby interesting level express individual's motivation towards usage intention (Abadi, Ranjbarian, and Zade, 2012). Liking behaviour or reaction of the app users towards the apps' function determines their motivation to use the app (Hossain, Kim & Jahan, 2019).

### **2.2.2 Independent Variable- Social Influence (SI)**

Social influence is the degree of intention in which an individual thinks that he/she should use the application (Chong, Chan, & Ooi, 2012). It is related to external pressures derives from life their acquaintances such as family, friends, peers, colleagues, etc (Zhou, 2011; Martin & Herrero, 2012; Lee, Sung, & Jeo, 2019).

Social influence is determined by the degree of compliance, identification, and internalization (Ozuem et al., 2021). Individuals comply by accepting rewards and messages even if they disagree with the groups (Ozuem et al.,

2021). When an individual accepts a source of influence to maintain an ideal relationship, identification occurs (Ozuem et al, 2021). Internalization is achieved through the adoption and acceptance of new behaviours and values which are beneficial to individuals in the community (Ozuem et al, 2021).

Besides, social influence can be divided into two sorts which are mass media influence and interpersonal influence (Chua et al., 2018). While mass media comprises newspaper advertisement, television advertisement, radio advertising, and internet browsing (Gharaibeh & Arshad, 2018), interpersonal influence comes from reference groups who are powerful in convincing and influencing (Chua et al., 2018; Deng et al., 2018).

### **2.2.3 Independent Variable – Perceived Risks (PR)**

Risks are interpreted as the individual's perceptive view towards the uncertainty and having a fair comprehension of its repercussions (Jacoby & Kaplan, 1972). The concept of risk involves the available options that are potentially positive or negative outcomes (Stone, & Grønhaug, 1993). A theory was also elucidating those motivational states occur and subsequently affect cognitive and behavioural responses as well as volitional processes that can develop into a persisting behaviour (Dholakia, 2001). In consumer-perceived risk, it can also represent an obstacle to purchasing behaviour within the aspects of food-related transactions (Wang, 2015). Particularly within the context of mobile applications, the role of experience with mobile purchases contributes to the risk adoption (De Kerviler, et al., 2016). With mobile food delivery services, mobile banking integrates mobile communication technology and equipment to access various banking and financial services (Chen, 2013). Since the consumer's intention for procurement be it in-app purchases, it's still a purposeful action that may lead to adverse repercussions such as psychological, financial, functional, social, physical, and time risks, the act itself would be given to be risky (Yang et al., 2015).

Psychological risks related to privacy, personal data, and the transaction within mobile applications also provide evidence that negative product performance can affect the consumer's cognitive ability and their perception (Jia et al., 2017). Financial risk can be defined as a decision-making process under uncertainty where individuals use minimizing possible below-target return or maximizing possible gain as guidelines to reduce the risk of loss (Vlaev et al., 2009). There is also a functional risk in which the product or service procured does not behave as intended in the manner which results in the lack of customer satisfaction (Mitchell, 1992). Whereas social risk would be a negative effect on the perception of other individuals towards the purchaser as they procure or use the goods or services (Lutz & Reilly, 1974). Physical risk is present when safety issues are exemplified by the health risks that are derived from below-par lifestyle, nutrition, or even food poisoning due to unsafe food handling that's been ordered online (Wang, 2015). Lastly would be the time risk which can be defined as the risk consumers take which may cause a loss of time, convenience, certainty, and/or effort in acquiring a product or service (Hong & Yi, 2012).

#### **2.2.4 Independent Variable-Features of Mobile Apps (FMA)**

Mobile apps is defined as independent software designed for a mobile device and performing specific tasks for mobile users (Amalfitano et al., 2013). The mobile apps are easy to download (Gangaiamaran & Pasupathi, 2017), and the clear graphics are crucial to ensure the delivery of content, and the app interface functionalities (Azizul et al., 2019).

FDA are known as third-party platforms, which offer online food delivery services from partner restaurants to the customers (Li, Miroso & Bremer, 2020). It promotes a contactless food ordering process that is efficient, and the food will be delivered to the customer's location within the promised time frame (Nayan et al., 2020; Zainudin et al., 2020; See-Kwong et al., 2017). Rahman et al (2019) stated FDA will suggest suitable products to the users through the access of GPS-location. The FDA would include a list of

the menu, prices of products, available restaurant details, information details, and status of an order (Rahman et al., 2019). Furthermore, the FDA does provide a high-security system to protect users' personal information and online transaction details (Zakaria et al., 2020).

### **2.2.5 Moderator- Experience**

The role of experience defines consumer likelihood to adopt mobile apps (Mahardika, 2013). Experience is described as the degree of understanding and knowledge towards technology innovation (Sun & Zhang, 2006); and also, the psychological outcome when the interaction occurred between the system and its user (Kim & Kim, 2014). Additionally, experience is explained as the cumulative perception which an individual obtains on a specific action (Chawla & Joshi, 2018). It is also referring to interactivity with a concept of the ability to create a communicative environment that stimulates user participation and interpersonal communication (Kioussis, 2002). Meanwhile, the interactivity in terms of the app features could influence the user's final decision towards adoption behaviour.

The four realms of experience economy which are entertainment, education, aesthetics, and escapism indicate how services are delivered by highlighting customer experience (Pine & Gilmore, 1998). Entertainment experience required passive individual participation by offering engagement to retain customer attention; education experience enforced active involvement to ensure customers absorbed in an event; aesthetic experience provided customers to immersed in the environment with least participation, and escapism experience guaranteed the customers total immersion in an event. Previous academic studies were found as the example of introducing experiences that influence user's adoption behaviour in mobile apps context, such as the experience of short-form video apps (Wang, 2020); tourism apps (Gupta et al., 2018); and health apps (Balapour et al., 2019).

Therefore, by referring to the study of Huang et al (2019), the experience economy model can be used to describe the user's experience in the FDA context. Entertainment experience can be shown through passive delivery of app's content such as images of food; education provides information about food delivery services such as promotions, escapism can be reflected from user's participation in escape while using the apps, and aesthetic experience focused on the interesting level of the app itself. Hence, the experience of FDA serves as a moderator which facilitates the determinants of adoption reluctance towards the apps.

### 2.3 Proposed Conceptual Framework

The study's conceptual framework was developed based on the theory of the Technology Acceptance Model (TAM). The framework includes the IVs, DV, and moderator.

Figure 2.2 below is the framework that illustrates the relationship between adoption reluctance towards FDA and its determinants, which would be moderated by experience. The relationship is denoted with the respective hypothesis.

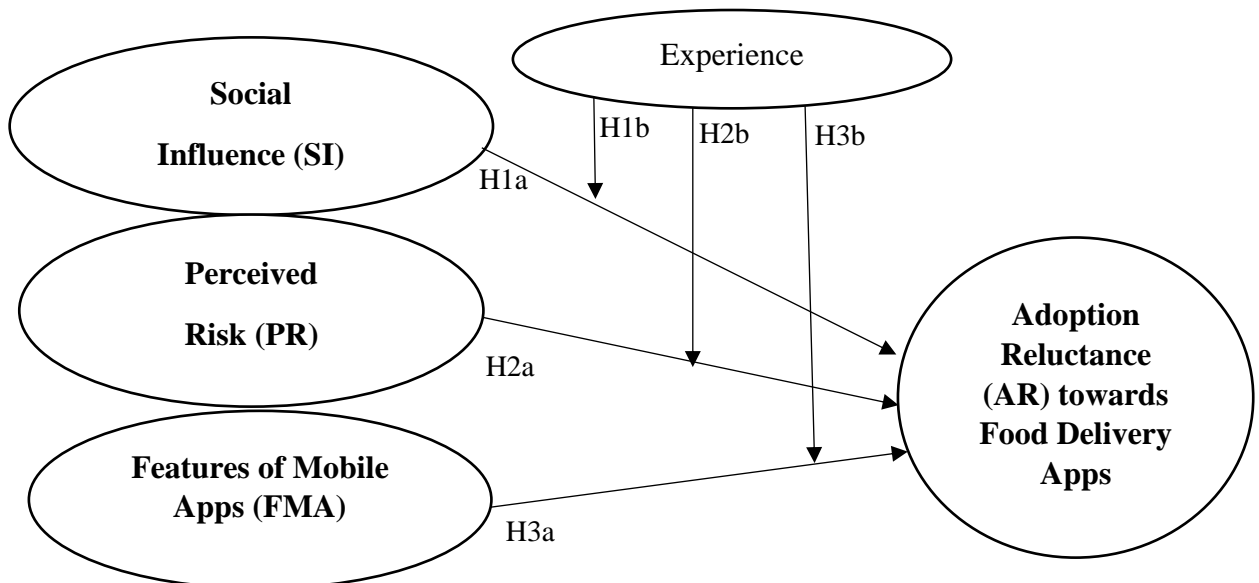


Figure 2.2. Study's Conceptual Framework.

## 2.4 Hypotheses Development

### 2.4.1 Social Influence (SI)

Social influence has been proven that will influence users' behavioral intentions or attitudes toward new technologies, products, and services (Lee, Sung & Jeon, 2019). Social influencers can increase the credibility of mobile apps and impact the app's trustworthiness and usefulness; peers are usually conditioned on their credibility, and they are implicit to be trusted thus strongly influence an individual's behaviour (Beldad & Hegner, 2018; Greszczuk, et al., 2018). Hence, the stronger the peers believe that the use of new technologies is important, the greater the possibility of following it (Lee et al., 2019). Also, social media platforms are common to be utilized by firms as part of their marketing strategy (Belanche et al., 2020).

Nevertheless, social influence could be recognized as a challenge or opportunity to a company. Allsop, Bassett, & Hoskins (2007) stated that the business plan needs to consider offsetting the negative word of mouth (WOM) nor will lead to the low credibility and usage intention of application. Online platforms still lack reputation and reliability, which leads to a low degree of assurance to use (Lim, Omar & Thurasamy, 2015). Most of the generation Y are still reluctant to adopt FDA due to the negative feedback and bad reputation that affected the apps' trustworthiness. The individuals who feel reluctant to use FDA are trying to persuade and discourage their families and peers to use them because of the negative feedback from other users on social media (Koutamanis et al., 2015).

The development of e-commerce has enhanced a sense of belonging in social media and provides the value of entertainment (Naqvi, Jiang, Miao & Naqvi, 2020). People use social media to build network relationships, share information, experience, and opinions by uploading videos, pictures, and text. (Peng, Yang, Cao, Yu & Xie, 2017). Karakaya and Bernes (2010) described that an online review is a form of e-WOM that guides online



user's decision-making based on information provided by others who have had experience with a specific service or product. Also, the online review is an important part of social media in which people will rely on it to make purchase decisions and is viewed as a valuable source of information (Ali et al., 2021; Kapoor et al., 2018). Yet, most of the customers will pay more attention to negative reviews compared to positive and they feel negative reviews are more credible (Lo & Yao, 2019).

Social influence act as a form of observing the experiences of others instead of learning (Fulk, Schmitz & Steinfield, 1990). Individuals with less experience in using social networking applications will pay more attention to the ease of use of social networking applications (Chua, Rezaei, Gu, Oh & Jambulingam, 2018). When users are lack experience in social network applications, causing higher users' alliance needs, and more susceptible to the opinions of reference groups (Taylor, Voelker & Pentina, 2011). Yet, they will have a greater impact on social information (Fulk et al., 1990). Meanwhile, Varshney and Vetter (2012) observed that social impact seems to be important only in the early stages of the consumer's initial experience with the technology. Older adults who already learned from negative experiences will become less interesting in enjoying entertainment in social media (Bartsch, 2012). When the experience increases, social influence becomes less important (Yang, 2013) and it reduces the impact of social influence on users' behavioural intentions (Groß, 2015). Hence, the following hypotheses are proposed:

**H1a: Social Influence is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

**H1b: Experience moderates the negative relationship between Social Influence and Adoption Reluctance towards Food Delivery Apps among Generation Y.**

### **2.4.2 Perceived Risks**

Perceived risks are a fundamental part of decision-making. It shows that every consumer would have an innate thought that guides them toward the desired goal leading to an intention (Setiya, 2009). This is because risk perception can significantly alter the consumer's intention to not use a certain medium (Chi et al., 2012). For example, a study on equipment risks reinforces that whenever a consumer possesses the capacity for a high level of equipment risk, the effect would negatively impact their intention to use it, thus resulting in a reluctance to adopt new practices (Bae et al., 2020). Therefore, risk perception is considered a paradigm as it can manipulate the individual on their perception and how it affects their decision-making causing behavioural changes in FDA adoption (Slovic et al., 2005). Besides, insecure individuals will feel more risk when adopting new technologies and they distrust the ability to perform tasks effectively (Taylor, Voelker & Pentina, 2011).

Especially in the FDA context, security risk can significantly affect one's value trust, causing hesitation in motivation for intention (Xu et al., 2015). A study has also shown that the application usage figures remain as evidence that even with the inherent benefits of mobile payments, some reluctance among consumer's adoption of the system would still occur due to their own volition (Thakur, & Srivastava, 2014). Additionally, perceived risk is a factor in manipulating the application's usefulness as it affects how correlated its relationship is with attitudes and adoption intentions (Lu et al., 2005). Also, the use of online applications still possesses uncertainty within the system structure such as managing transactions in e-commerce apps (Belkhamza, & Wafa, 1970). This may increase the degree of adoption reluctance, as the actions are considered risky.

Experience is a predominant factor in the adoption process, due to the consumer's likelihood to purchase the product or service are to be further evaluated (Young, 1981). This process would then precipitate the way consumers perceive risks (Mitra, 1999). In the perspective of experience,

the distinction of perceived risk between inexperienced and experienced procurers is self-contained within the dichotomy and the degree of involvement in the reluctance behaviour for online purchasing (Pires, 2004). This can be justified that customer service experience is considered an important dimension in the online shopping context as it expresses functionality and psychological attributes that form the way consumers perceive risks (Martin, 2015). A study also indicated that negative experiences cause a higher intensity of risk perception (Samadi, & Yaghoob-Nejadi, 2009). Since higher perceiving risk can alter consumer's intentions in an antagonistic perverse manner, it may have a resulting major effect on purchasing volume causing them to decline (Dodd, 2005). This relationship can be broadened further where the negative experience decreases the probability of online or app purchases as it develops an increase in risk perception (Doolin, 2005). With that, the following hypotheses are proposed:

**H2a: Perceived Risks is positively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

**H2b: Experience moderates the positive relationship between Perceived Risks and Adoption Reluctance towards Food Delivery Apps among Generation Y.**

### **2.4.3 Features of Mobile Apps**

Mobile users always seek promotions and perform transactions through mobile apps since shopping online is getting common. Thus, the usefulness and performance of FDA become one of the main factors to result in users' adoption reluctance toward the apps (Nhung et al., 2020; Singh et al., 2018; Malik et al., 2017). The complexity of using mobile apps could influence the adoption reluctance of FDA (Moorthy et al., 2019), while the complex steps of filling in personal details and complicated configuration of FDA may cause generation Y reluctant to use the apps (Singh et al., 2018). Some

FDA systems may require fundamental learning and talents causing generation Y who lack these pieces of knowledge may be reluctant to use the app (Manan et al., 2018), since they may prefer easy-to-use apps (Moorthy et al., 2019).

Besides, Singh et al (2018) supported the poor quality visual or graphic design of mobile apps which results in users' adoption reluctance on the apps. Generation Y may find it to be less enjoyable due to the poor graphics that affects the visual satisfaction of FDA (Yeo et al., 2017). The frequency of sharing or providing the promotions and relevant information of the app towards the users' mobile will influence individuals on adopting the apps as these may lead to full file storage of the device which ends up affects the performance of the device and apps. (Kim et al., 2012; Dehkordi et al., 2012; Kim & Shimn, 2013; Razak et al., 2017). Moreover, few past studies mentioned that users may worry that the apps are insecure which has security vulnerabilities that may be easy to be compromised by hackers and privacy issues (Yusopa et al., 2016; Belkhamza et al., 2017). The apps that lack security concerns may lead to the applications' failure and malfunction (Yusopa et al., 2016).

Furthermore, a lack of skills and knowledge towards the food apps system is influenced by the experience of using technology (Baharuddin et al., 2015). The least experienced in using mobile apps may lead to unfamiliarity with the technology and skills towards using the app (Baharuddin et al., 2015). Suki & Suki (2011) supported that the unfamiliarity about the apps may cause user's reluctance to accept mobile applications. The rapid advancement of apps and technologies may require users familiar with the system. Therefore, individuals with limited experience towards FDA may find it difficult to use. Hence, the following hypotheses are proposed:

**H3a: Features of Apps is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

**H3b: Experience moderates the negative relationship between Features of Apps and Adoption Reluctance towards Food Delivery Apps among Generation Y.**

## **2.5 Conclusion**

This chapter has clearly stated the relevant theory and framework that has been created to illustrate the relationships between DV, IVs, and the moderator. The next chapter will be emphasized on research methodology.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.0 Introduction**

The methodology of the current study will be discussed in this chapter. Moreover, the pilot test was conducted, and the proposed data analysis tool are reviewed.

### **3.1 Research Design**

The quantitative research approach with the descriptive design is utilized in the current study. Quantitative research is frequently used by researchers to obtain summaries of data that describe and explain the relationship reflected in the research (Sukamolson, 2007), by allowing researchers to better identify the target population through measuring their varied reactions and behaviour. The descriptive design facilitates the researchers to observe a phenomenon and identify its situation (Nassaji, 2015). These are frequently used by researchers in food apps context, such as to study intention towards using Go-Food Apps (Prabowo & Nugroho, 2019), to identify the perceived innovativeness of drone food delivery services in Korea (Hwang, Lee & Kim, 2019) and more.

### **3.2 Sampling Design**

#### **3.2.1 Target Population**

The target population refers to the group of people that are considered qualified for data analysis of research (Whaley et al., n.d.). The target population of this study is generation y who were born between 1981 to 1996 and who are currently 25-40 years old. They should have utilized FDA at least once to be considered in this study, as prior experience shows a full

range and unvarnished reality that affects customer expectations towards the app (Meyer & Schwager, 2007).

Some of the previous studies specializing in Generation Y as the target population is such as the study analysing their impulsive shopping behaviour (Khan et al., 2016), online purchase behaviour (Fei, 2019), and perception in mobile services (Kumar & Lim, 2008).

The sampling frame refers to the list or directory that contains the detailed elements of respondents who are selected as samples (Stasny, 2001). As the target population is generation y who have experience in using FDA, the sampling frame is not available.

### **3.2.2 Sampling Technique**

Since no sampling frame is available, thus non-probability sampling technique is suitable to be used in the current study (Vehovar et al., 2016). Judgemental sampling is specifically used where the researcher chooses the participants based on his own judgment and existing knowledge (Showkat & Parveen, 2017). Therefore, screening questions on respondent's recent usage experience were used to recruit the respondents in this study. Placing these experience-related questions as screening questions are to better identify the reason that causes them reluctant to adopt FDA. Through this, the selected units can be approached directly in order to obtain desired results (Frey, 2018).

### **3.2.3 Sampling Size**

The sample size is the total amount of respondents in the target population that will be investigated in the study. According to Hair et al (2010), a minimum of five times as many observations as the number of variables to

be studied. Therefore, based on Hair et al (2010) statement, the sample size of this study can be calculated as follow (Pathavi, Adam & Bustaman, 2020):

Total indicators x 5 = Minimum sample size

32 x 5 = 160 respondents

Hence, a minimum of 160 respondents is needed for this study.

### **3.3 Data Collection Methods**

#### **3.3.1 Pre-test**

The pre-test is important as it focuses on the understanding of respondents about the problems and what is different from their intentions (Blair & Presser, 1993). A pre-test is aimed to test the suitability and understand the instrument to achieve content validity (Dimitrov & Rumrill, 2003). It is crucial to confirm the overall content of the questionnaire is comprehensive and error-free (Chan et al., 1998). Therefore, the questionnaire was designed based on the ideas gathered from past studies (refer to Table 3.1). Those constructed questions were modified and improved after the evaluation from the supervisor.

Additionally, the questionnaire also has been sent to another 2 marketing lecturers for further checking on the suitability of the questionnaire content. Lecturer 1 suggested changing the demographic income from the statement of “4000 and above” to “above 4000”, to avoid duplication. Whereas lecturer 2 recommended switching and adding some simpler terms to ensure respondents can grab better comprehension of the question asked. Meanwhile, this demonstrated that the items of the questionnaire had achieved content validity.



### 3.3.2 Questionnaire Design

The questionnaire of the current study consists of 2 sections – Section A and B. Before proceeding to answer the questionnaire, the respondents must complete the screening questions as follow:

- Aged between 25 to 40 (Generation Y)
- Have prior experience in using FDA

Section A provides 6 questions to respond to. Those are demographic questions that related to respondents’ personal information such as gender, age, educational qualification, occupation, monthly income, when did the respondents begin to use the FDA, and which type of food delivery services they have used.

Next, section B has been broken up into 5 categories with 32 questions which are adoption reluctance, social influence, perceived risks, features of mobile apps, and experience. Furthermore, Likert scale measurement was applied in this section which ranges from 1 to 5 to indicate the responses towards the statement from strongly disagree to strongly agree. Likert scale is an important tool in psychology and social investigations that is often used to measure attitudes, thereby providing a series of answers to a given question about a topic. Thus, the Likert data that has ordered categories is used (Subedi, 2016).

Table 3.1

*Sources of Measurement Items*

No.	Variables	Questions	Sources	Scale
AR1		Avoid using.	Fishbein & Ajzen (1975)	
AR2		Unlikely to use.	Priyanka, S (2012)	

AR3	Adoption Reluctance towards Food Delivery Apps	Not willing to use.	Yuan, Lai & Chu (2019)	Likert Scale
AR4		Not keen to use.	Yau & Ho (2015)	
AR5		<u>Demotivated</u> to use.	Abadi, Ranjbarian, and Zade (2012)	
AR6		Not appreciate.	Hossain, Kim & Jahan (2019)	
SI 1	Social Influence	Matches personal values.	Malhotra, Y., & Galletta, D. F. (1999)	Likert Scale
SI 2		Feel proud when using.		
SI 3		Status symbol in my community.	Gharaibeh, M. K., & Arshad, M. R. M. (2018).	
SI 4		Mass media influence behavior.		
SI 5		Influence from important people.	Chua, P.Y., Rezaei, S., Gu, M.-L., Oh, Y. & Jambulingam, M. (2018)	
PR1	Perceived Risks	Adverse repercussions (e.g. risks)	Yang, Y., Liu, Y., Li, H., & Yu, B. (2015)	Likert Scale
PR2		Feel irresponsible	Jia, J. S., Jia, J., Hsee, C. K., & Shiv, B. (2017).	
PR3		Service charges are overpriced and not worth the value.	Vlaev, I., Chater 1, N., & Stewart, N. (2009)	
PR4		Reliable functions.	Mitchell, V. W. (1992)	
PR5		Does not fail to function.		
PR6		Not very pleasant to use.	Lutz, R. J., & Reilly, P. J. (1974)	

PR7		Feel unhealthy.	Wang, E. S. T. (2015)		
PR8		Spending time on something else rather than trying.	Hong, Z., & Yi, L. (2012)		
FMA1	Features of Mobile Apps	Convenient to use.	Gangaiamaran & Pasupathi. (2017); Nayan et al. (2020)	Likert Scale	
FMA2		Delivered on time.	Nayan et al. (2020); Zainudin et al. (2020)		
FMA3		Transaction is safe.	Zakaria et al. (2020)		
FMA4		Protects personal information.			
FMA5		Comprehensive details are provided.			Rahman et al. (2019)
FMA6		Suggests appropriate and adjacent.			
FMA7		Allows tracking of order status.			
E1	Experience	Having sufficient knowledge.	Sun & Zhang, (2006); Si & Chow, (2015)	Likert Scale	
E2		Engaging usage experience.	Kiousis, S (2002)		
E3		Learning experience.	Pine & Gilmore, (1998), Huang et al. (2019).		
E4		Entertaining usage experience.			
E5		Escapism usage experience.			
E6		Esthetic usage experience.			

### **3.3.3 Pilot Study**

A pilot study could improve efficiency and prevent problems from occurring before data collection from respondents (Connelly, 2008). This can reduce failure frequency and figure out the limitations for the full-scale study (Majid, Othman, Mohamad, Lim & Yusof, 2017).

After finalizing the questionnaire in the pre-test, the pilot study has been conducted online. The Google Form has been posted on social media such as Facebook and Instagram, as most of the Generation Y aged between 25-40 often engage in social media apps. Wright & K (2005) supported that online data collection can reach far distance respondents and is convenient to reduce time-consuming to collect data. According to Hertzog (2008), 10% of the sample size was suitable for the internal pilot study. Hence, a total of 20 responses had been collected and no comment was received from the respondents. This shows the questionnaire is error-free.

Thereafter, a reliability test has run to test the stability and internal consistency of measurement items used in the study. It was measured using the Cronbach Alpha value. Wells & Wollack (2003) stated that Cronbach's alpha should in between 0 and 1.00, while items with values closer to 1.00 are considered to have a high internal consistency. A standardized test should be above 0.80 or 0.85, whereas a value below 0.7 is considered poor. Table 3.2 shows the results of Cronbach's Alpha value obtained from the pilot test. It ranges between 0.73 to 0.89 and the overall is 0.88. Thus, it demonstrates the survey is reliable and has a good internal consistency (Trizano-Hermosilla & Alvarado, 2016).

Table 3.2

*Reliability Analysis for Pilot Test*

Variable's name	Cronbach's alpha value	Number of items
Adoption Reluctant (AR)	0.8885	6
Social Influence (SI)	0.7620	5
Perceived Risk (PR)	0.7305	8
Features of Mobile Apps (FMA)	0.8251	7
Experience (E)	0.7951	6
<b>Overall</b>	<b>0.8833</b>	<b>32</b>

### 3.3.4 Fieldwork

The online survey was used to access 163 respondents by using Google Forms. Google Forms was used as it is free and does not require complex technical skills. Meanwhile, it is an effective tool that use to generate data automatically, which could reduce human error and manpower.

Besides, social media platforms such as Facebook and Instagram had been utilized to disseminate the Google survey. The survey was posted on the Facebook groups that consist of many millennials. Before the respondents proceed to answer the questionnaire, they were required to answer the screening questions. Meanwhile, the respondents are selected to participate in this survey only if they are aged between 25 to 40 years old and have

prior experience in using FDA. This survey method has allowed the respondents to participate at anytime and anywhere by just simply a few clicks on their phone screen.

The questionnaire construct must be simple and comprehensive enough to ensure the data collected are accurate. Thus, simple, and clear questions are designed with English in the survey to ease the understanding of the questions. As the researchers' contact information has been stated in the questionnaire, respondents could contact the researchers if they encounter problems. This is to ensure the respondents can have full comprehension and answer without a doubt.

### **3.4 Proposed Data Analysis Tool**

#### **3.4.1 Structural Equation Modeling (SEM)**

Structural equation modeling (SEM) is used to analyse the gathered data. SEM is a multivariate statistical technique that can analyse the complex path model which involves several independent, dependent, and moderating/mediating variables simultaneously (Nunkoo & Ramkissoon, 2012). Fundamentally, it is made of a combination of factor analysis and multiple regression analysis where it can more accurately identify the causal mechanisms as well as the phenomena in terms of parameters (Graybill, 1976; Hox & Maas, 2001). The procedure for the SEM begins with model specification, identification, data preparation and screening, estimation, evaluation of fit, and lastly modification (Weston & Gore Jr, 2006).

The SEM has two different variations where the model can be tested with which is the variance-based or the covariance-based technique (Tam et al., 2020). Variance-based SEM (VB-SEM) also known as Partial Least Square SEM (PLS-SEM), is a technique that allows its user to approximate complex models with many constructs, indicator variables, and structural paths

without forcing a distributional assumption upon the data (Hair et al., 2019). This technique also considers the total variance and uses it for estimating parameters (Hair et al., 2017). However, it must be noted that the main emphasis would be predicting the estimating statistical models, whose structure is designed to provide causal explanations (Rigdon et al., 2017). This allows users to utilize the technique for exploratory research in addition to confirmatory research (Hair Jr et al., 2016). Besides, the Covariance-based SEM (CB-SEM) was widely used for confirming or rejecting the proposed theory (Svensson, 2015). CB-SEM is a method that follows the maximum likelihood (ML) estimation procedure where the goal is to reproduce the covariance matrix without focusing on explained variance which PLS-SEM does (Astrachan, 2014). This indicates that PLS-SEM is substantially better than CB-SEM in terms of comparison of variance for the dependent variable indicators (Hair Jr et al., 2017). According to Fauzi (2018), past social science researchers within the field of mobile applications typically utilize PLS-SEM in their models. Thus, PLS-SEM is used in this study.

### **3.4.2 SmartPLS**

SmartPLS is latent modeling software that is a workhorse for all PLS-SEM analyses which has an easy-to-use graphical interface (Hair, n.d.). Given its flexibility where it is less restricted to rules and regulations, SmartPLS allows researchers to explore causal mechanisms with undistributed data (Sander & Teh, 2014). PLS-SEM only requires a minimal demand of sample size, followed by the distributions of the residuals (Wu et al., 2011; Chin, 1998; Chin et al., 2003). As such, SmartPLS is the most suitable statistical tool for the PLS-SEM technique that uses small sample sizes (Hew et al., 2015). With these two situations qualifying for PLS-SEM, SmartPLS seemed the most suitable in this study.

Since items PR4 and PR5 in the questionnaire construct are indicated oppositely with a positive tone, thus reverse coding must be done for both

raw data before proceeding to the data analysis. Thereafter, PLS-SEM analysis that consists of two stages, which are the measurement model assessment and structural model assessment would be conducted (Ramayah et al., 2018). The first stage would be the measurement model involving multiple assessment tests such as factor loading value (FL) which is used to reduce data to explain the correlations between observed variables using a smaller number of factors (Salkind, 2010). Any FL below 0.3 is considered low, 0.5 for medium and 0.7 high for which the variance extracted from the factor amount from the variables is sufficient (Shevlin & Miles, 1998).

Meanwhile, The Average Variance Extracted (AVE), Composite Reliability Coefficients (CR) as well as Cronbach Alpha Reliability (CA), under the guise of convergent validity and construct reliability, are used to measure the quality of measurement items (Valentini & Damasio, 2016). Any values that the AVE, CR, and CA have above 0.7 are considered satisfactory (Alarcón et al., 2015; Bland & Altman, 1997). Additionally, discriminant validity is also assessed in this stage to assess the relevance of a concept toward other models of measurement (Zaiğ & Berteau, 2011). The most common method for discriminant validity is by assessing the HTMT criterion results where any value below 0.90 shows a discriminant validity between two reflective constructs (Henseler et al., 2015).

The second stage would be the structural model measurement. This model has a path model approach that is used to identify the multicollinearity issues, Variance Inflation Factor (VIF), and path coefficients (Grewal et al., 2004; Guenole & Brown, 2014). Any multicollinearity issues can be identified whenever the VIF value is above 10 which is considered harmful (Franke, 2010). Additionally, the path coefficient relies on beta value, t-value, R square to develop the hypothesis (Ko & Stewart, 2002). The acceptable values include p-value < 0.01, t-value > 2.33 for the one-tail test, and the R square values would be 0.25 which is the minimum, 0.50 medium, and 0.7 high (Ranatunga et al., 2020).



### **3.5 Conclusion**

In short, chapter 3 illustrated the research design method adopted in this study. The coming chapter would be focusing on the data analysis results.

## CHAPTER 4: DATA ANALYSIS

### 4.0 Introduction

The descriptive and inferential analysis of the collected data is generated by using SmartPLS 3. Hence, demographic analysis, measurement, and structural model are discussed in this chapter.

### 4.1 Demographic Analysis

A total of 163 responses were collected. Table 4.1 demonstrates the demographic data in frequency and percentage manner. More than half are female respondents (55.8%). The majority with 73.6% are aged between 25-30, while only 8.6% of them are aged between 36-40. While for the education qualification, the mass of the respondents graduated with bachelor's degree (73.6%). Moreover, approximately half of the respondents are employed (46%), followed by unemployed (33.1%), self-employed (17.2%), and only 6 of them are students (3.6%). Subsequently, for monthly income, most of the respondents are having an income of less than 2,000 (45.4%), more than a quarter with income ranges between 2,501 – 4,000 (29.4%), some having income above 4,000 (13.5%), while those with the income ranges within 2,000 – 2,500 (11.7%) are the lowest.

In addition, data regarding the demographic question of “When did you begin to use Food Delivery Applications (FDA)?” was collected. The result shows that 105 respondents (64.4%) have begun to use the FDA before MCO, whereas 58 of them start to use it after MCO. Lastly, the question of “Which type of food delivery application (FDA) have you used?” has applied the checkboxes method in Google Forms that allow the selection of multiple options. Therefore, a total number of 77 respondents have used the Restaurant-to-Consumer Delivery application (47.2%), and a great mass of 147 respondents have used the Platform-to-Consumer Delivery application (90.2%).

Table 4.1

*Demographic Profile of the Respondents*

Variable	Frequency(f)	Percentage (%)	
Gender	Male	72	44.2
	Female	91	55.8
Age	25-30	120	73.6
	31-35	29	17.8
	36-40	14	8.6
Education Qualification	SPM	13	8
	STPM	5	3.1
	Diploma	16	9.8
	Bachelor's Degree	120	73.6
	Master's Degree	8	4.9
	Doctorate	1	0.6
Occupation	Employed	75	46
	Unemployed	54	33.1
	Self-employed	28	17.2
	Student	6	3.6
Monthly Income (RM)	Less than 2,000	74	45.4
	2,000 - 2,500	19	11.7
	2,501 – 4,000	48	29.4

	Above 4,000	22	13.5
When did you begin to use Food Delivery Applications (FDA)?	Before MCO	105	64.4
	After MCO	58	35.6
Which type of food delivery application (FDA) have you used?	Restaurant-to-Consumer Delivery	77	47.2
	Platform-to-Consumer Delivery	147	90.2

## 4.2 Inferential Analysis

The measurement model involving convergent validity such as Composite Reliability (CR), Average Variance Extracted (AVE), and Cronbach Alpha Reliability (CA). Additionally, discriminant validity includes HTMT and Cross Loadings are also assessed in this stage to evaluate the relevance of a concept toward other models of measurement.

The path model approach is used to identify the multicollinearity issues, Variance Inflation Factor (VIF), and path coefficients (Grewal et al., 2004; Guenole & Brown, 2014). Besides that, the path coefficient relies on beta value, t-value, R square to develop the hypothesis (Ko & Stewart, 2002).

### 4.2.1 Measurement Model

In the measurement model of Table 4.2.1, items with outer loading below 0.5 were removed, which are: FMA4, PR1, PR4, PR5, SI4, SI5. According to Sumiati et al (2019), the absolute standardized outer loading of each

manifest variable should have a value above 0.5 to ensure individual manifest reliability. According to Abd Rahim (2019), the outer loading AR3, AR4, AR5 were removed due to it showing not significance in Collinearity Statistics (VIF).

The purpose of Composite Reliability (CR) is to understand the reliability of the four variables (Terry & Kelly, 2012). Alarcón et al (2015) stated that composite reliability (CR) is recommended when the values are higher than 0.7. Table 4.2.1 shows that the CR values of each variable are higher than 0.7. The highest value is 0.883 for AR and the lowest value is 0.843 for FMA. Hence, the result has proven each of the variables has achieved composite reliability.

According to Ahmand et al (2016); Alarcón et al (2015); Khani et al (2016), the Average Variance Extracted (AVE) of each construct that is above or equal to 0.4 are considered acceptable and above 0.7 are considered as good. Based on table 4.2.1, all the constructs are above 0.4 which is 0.716 for (AR), 0.473 for (FMA), 0.517 for (PR), and 0.682 for (SI). This shows that all the constructs have achieved the required level of convergent validity.

(AR) and (PR) have a Cronbach alpha value of 0.802 and 0.807 respectively, which is considered good in reliability that above 0.8 (Behlau et al., 2011). Next, (FMA) and (SI) have the Cronbach alpha value of 0.796 and 0.795 respectively. All variables belong to good reliability since they hit values greater than 0.7 (Sleimi & Emeagwali, 2017).

Table 4.2.1  
*Convergent Validity Result*

Variables	Items	Outer Loading	CR	AVE	Cronbach's Alpha
Adoption Reluctance (AR)	AR1	0.768	0.936	0.708	0.917
	AR2	0.837			

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	AR3	0.883			
	AR4	0.882			
	AR5	0.868			
	AR6	0.804			
Features of Mobile Apps (FMA)	FMA1	0.959	0.798	0.672	0.581
	FMA7	0.651			
Perceived Risk (PR)	PR2	0.808	0.880	0.648	0.818
	PR6	0.737			
	PR7	0.854			
	PR8	0.817			
Social Influence (SI)	SI1	0.933	0.882	0.789	0.742
	SI2	0.841			

---

Eliminated items: FMA (FMA2, FMA3, FMA4, FMA5, FMA6), PR (PR1, PR3, PR4, PR5), SI (SI3, SI4, SI5)

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The purpose of the Heterotrait-monotrait ratio of correlation (HTMT) is to measure the discriminant validity indicated in table 4.2.2. According to Hamid et al (2017), HTMT values that close to 1 are considered to be short of discriminant validity. Gold et al (2001) also stated that HTMT value 0.90 is considered as lack of discriminant validity. Besides, some past studies also proposed a threshold of 0.85. In this case, if the HTMT values are higher than the threshold then it would be considered the lack of discriminant validity. Hence, it proves that the discriminant validity has been established among all the constructs.

Table 4.2.2  
*HTMT Result*

	<b>AR</b>	<b>FMA</b>	<b>PR</b>	<b>SI</b>
<b>Adoption Reluctance (AR)</b>				
<b>Features of Mobile Apps (FMA)</b>	0.340			
<b>Perceived Risk (PR)</b>	0.790	0.139		
<b>Social Influence (SI)</b>	0.264	0.420	0.261	

Table 4.2.3 shows the cross-loadings of each indicator. The reliability of each item is evaluated by cross-loading and found that the factor loading value of their respective structure is very high which is greater than the cut-off value of 0.70 (Hamid et al., 2017). The numbers in bold are the highest value cross-loadings compared to other loading values. All values in cross loading show the contribution of each item to the construction. For example, AR1 contributed 0.824 variance, which means it occupied an 82.4% share in the construction. Besides, each construction with the highest cross-loading value among its own latent variables has proved its discriminant validity.

Table 4.2.3  
*Cross Loadings*

<b>Items</b>		<b>Features of</b>			
		<b>Adoption Reluctance (AR)</b>	<b>Mobile Apps (FMA)</b>	<b>Perceived Risk (PR)</b>	<b>Social Influence (SI)</b>
<b>AR</b>	<b>AR1</b>	0.824	-0.262	0.496	-0.245

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	<b>AR2</b>	0.879	-0.319	0.6	-0.219
	<b>AR6</b>	0.835	-0.266	0.532	-0.145
<b>FMA</b>	<b>FMA1</b>	-0.361	0.746	-0.259	0.275
	<b>FMA2</b>	-0.197	0.629	-0.088	0.406
	<b>FMA3</b>	-0.187	0.619	-0.052	0.265
	<b>FMA5</b>	-0.058	0.697	0.016	0.159
	<b>FMA6</b>	-0.181	0.703	-0.048	0.2
	<b>FMA7</b>	-0.156	0.726	-0.056	0.162
<b>PR</b>	<b>PR1</b>	0.373	-0.031	0.558	-0.124
	<b>PR2</b>	0.51	-0.145	0.789	0.044
	<b>PR3</b>	0.329	-0.102	0.573	-0.031
	<b>PR6</b>	0.447	-0.114	0.739	-0.082
	<b>PR7</b>	0.52	-0.181	0.792	-0.123
	<b>PR8</b>	0.552	-0.146	0.815	-0.327
<b>SI</b>	<b>SI1</b>	-0.264	0.377	-0.255	0.912
	<b>SI2</b>	-0.176	0.284	-0.06	0.855
	<b>SI3</b>	-0.07	0.251	0.118	0.695

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To sum up, the variance-based structural equation modeling (SEM) technique is used in data measurement. Tables 4.2.1, 4.2.2, and 4.2.3 displayed the constructs' discriminant validity.

### 4.3 Structural Model

According to Table 4.3.1, the VIF values are within the range of 1.0 and 2.5. As such, multicollinearity issues are absent. Furthermore, the path coefficient helps to identify the strength of influence and shows the existence of a direct correlation between the variables. The recommended values range between 0.1 and 1. Thus, (PR) appear to have a direct influence upon (AR) without a moderator while the (FMA) and (SI) both do not.

Table 4.3.1

*Path analysis without moderator*

	VIF	Path coefficient	T-statistics	P-value
Features of Mobile Apps (FMA)	1.187	-0.206	3.926	0
Perceived Risk (PR)	1.042	0.598	10.347	0
Social Influence (SI)	1.181	-0.067	0.837	0.403

According to Table 4.3.2, the values of (VIF) show no sign of multicollinearity issues. According to the tabulated results, experience does not directly influence adoption reluctance. While the (FMA) and (PR) with moderator both do not have a direct influence on adoption reluctance. In contrast, (SI) without moderator does not possess a direct influence on adoption reluctance. By using T-statistics and P-value, the relationship between the given variables can be determined. When the T-statistic is valued above 1.96 while the P-value is lesser than 0.05, the alternate

hypotheses can be accepted. In this research, the acceptable results for the T-statistics were valued at 3.039, 9.598, and 2.045 followed by the p-values which are 0.002, 0, and 0.041 accordingly.

Additionally, the adjusted R-square adjusted shows a minor improvement for experience as a moderator towards the relationship between independent variables and the dependent variable. This implies that the difference between the R-square adjusted without moderator and with moderator only proves there is only a minor correlation. This shown where the R-square adjusted with the moderator of 48% is only 2% higher than the R-square adjusted without moderator of 46%.

Table 4.3.2

*Path analysis with moderator*

Path	VIF	Path Coefficient	T- Statistics	P- Values	Results
<b>Experience (E) -&gt; Adoption Reluctance (AR)</b>	1.925	-0.127	1.538	0.187	Reject
<b>FMA moderator -&gt; Adoption Reluctance (AR)</b>	1.442	-0.057	0.842	0.4	Reject
<b>Features of Mobile Apps (FMA) -&gt; Adoption Reluctance (AR)</b>	1.548	-0.189	3.039	0.002	Accept
<b>PR moderator -&gt; Adoption Reluctance (AR)</b>	1.232	0.064	1.044	0.297	Reject

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<b>Perceived Risk (PR) -&gt; Adoption Reluctance (AR)</b>	1.268	0.554	9.598	0	Accept
<b>SI moderator -&gt; Adoption Reluctance (AR)</b>	1.462	0.148	2.045	0.041	Accept
<b>Social Influence (SI) -&gt; Adoption Reluctance (AR)</b>	1.627	-0.012	0.153	0.879	Reject
<b>R-Square Adjusted (without moderator)</b>	<b>0.460</b>				
<b>R-Square Adjusted (with moderator)</b>	<b>0.480</b>				

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Figure 4.1 illustrates the framework that highlights the outer loading values of the items within the independent variables which are (SI), (PR), (FMA), as well as the dependant variable (AR). The outer loading values were recalculated regarding the addition of a moderator. The finalized framework should be completed without any complications.

Since the values between 0 and 1 determine the reliability of the item where the value closest to 1 shows higher reliability levels, any values above 0.7 are seen to be more desirable. However, according to Hair et al. (2010), the loading values should be higher than 0.5 which means that it is not necessary to eliminate values between 0.5 and 1.

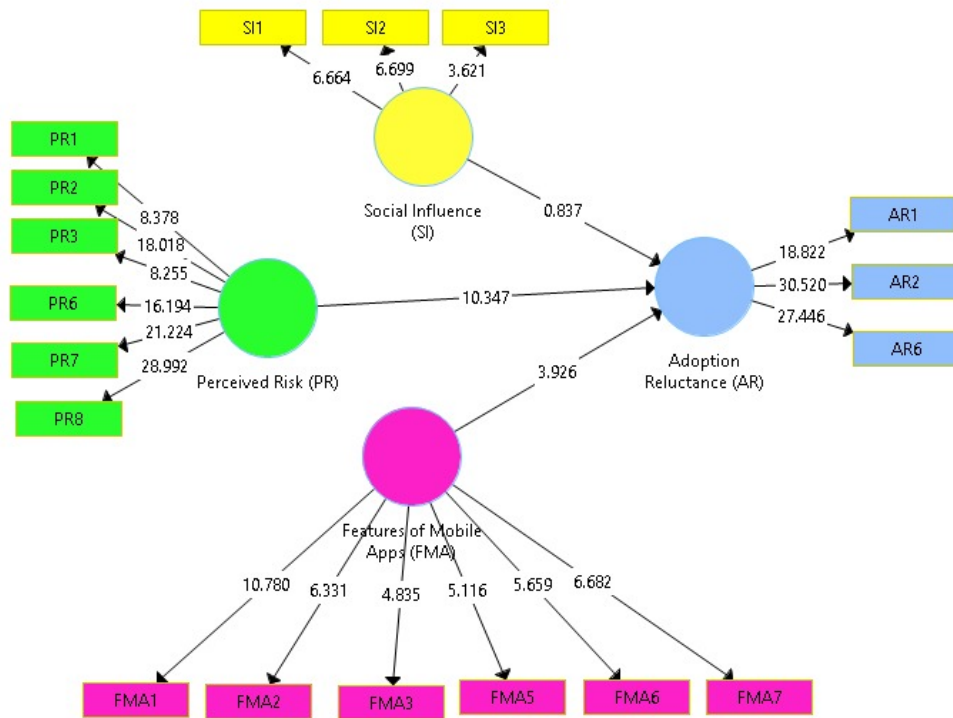


Figure 4.1. Basic framework without the moderator

Figure 4.2 illustrates the finalized framework which includes the experience as a moderator.

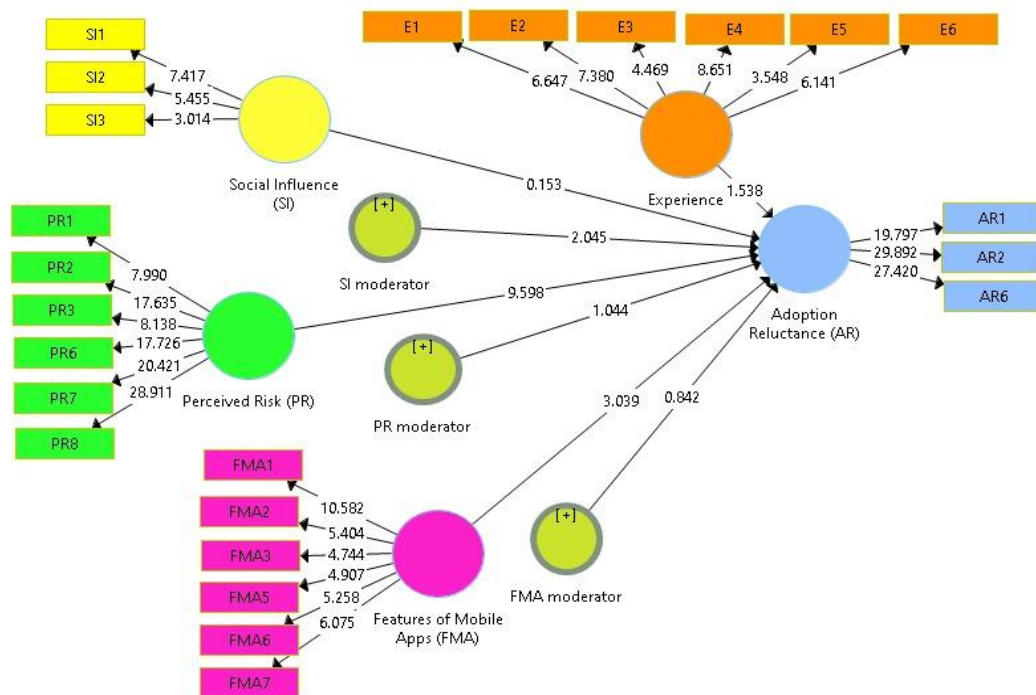


Figure 4.2. Finalized framework with the moderator

## **4.4 Conclusion**

In summary, there are no multicollinearity issues with the initial and secondary models. It can be concluded that there exists experience as a moderating variable towards the negative relationship between social influence and adoption reluctance. Additionally, the positive relationship between perceived risks and adoption reluctance is also significant. Lastly, the results prove that features of apps is negatively significant to adoption reluctance.

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## CHAPTER 5: DISCUSSION, CONCLUSION, AND IMPLICATIONS

### 5.0 Introduction

The research key findings and summary will be discussed in this chapter. In addition, the discussion on both managerial and theoretical implications, as well as limitations and recommendations are explained to aid future studies.

### 5.1 Discussion of Major Findings

Referring to table 4.1, many have adopted FDA before the MCO begins. Hooi et al. (2021) suggested that the consumers use food delivery applications because they are useful and effective. Moreover, the majority of generation Y used Platform-to-Consumer delivery. This is because third-party food delivery platforms provide more options compared to the Restaurant-to-Consumer. According to Chai and Yat (2019), Food Panda is the first food delivery service provider that achieved aggressive growth in Malaysia due to their liaisons with a wide range of restaurants.

Table 5.1  
*Results of Hypotheses test*

Hypothesis	T- Statistics	P- Value	Results
H1a: Social Influence is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.			<i>Not supported</i>
H1b: Experience moderates the negative relationship between Social Influence and Adoption Reluctance towards Food Delivery Apps among Generation Y.			Supported

H2a: Perceived Risks is positively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.	Supported
H2b: Experience moderates the positive relationship between Perceived Risks and Adoption Reluctance towards Food Delivery Apps among Generation Y.	<i>Not supported</i>
H3a: Features of Apps is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.	Supported
H3b: Experience moderates the negative relationship between Features of Apps and Adoption Reluctance towards Food Delivery Apps among Generation Y.	<i>Not supported</i>

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**H1a: Social Influence is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

Contrary to chapter 2 hypothesis, the result shows that social influence has no significant relationship with the Adoption Reluctance towards FDA. However, they were found to be negatively correlated. This might be due to apps users having independent thinking and judgement towards the usage of FDA. This is supported by Salim (2012) and Chua et al (2018), where the findings found that social influence cannot directly affect behavioural intentions as the users believe that the application's usefulness is much more important compared to external factors (e.g WOM recommendation, ratings, app's user-friendliness etc).

**H1b: Experience moderates the negative relationship between Social Influence and Adoption Reluctance towards Food Delivery Apps among Generation Y.**

Experience significantly moderates the relationship between Social Influence and Adoption Reluctance towards FDA. Recommendations from experienced users that are persuasive will directly influence the user who has no prior experience. According to Beldad & Hegner (2018), app users with satisfying prior experience mostly resume consumption, while the affected experiences produce recognition

and obedience which is considered a negative relationship towards social influence (Hamari & Koivisto, 2015). Thus, inexperienced users will tend to listen to what experienced users say.

**H2a: Perceived Risks is positively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

There is a significant relationship between Perceived Risks and the Adoption Reluctance towards FDA. Users are concerned about the vulnerability of their personal information being leaked in which the lack of management or negligence may cause information theft (Chi et al., 2012). In addition to the vulnerability of security, the internet can be seen as a source of risk factors associated with the adoption of online applications, hence the use of antivirus software with added security measures (Lu et al., 2005). It was also supported by Doolin et al (2005) who found that consumers that place perceived risk as a high priority are less likely to purchase online.

**H2b: Experience moderates the positive relationship between Perceived Risks and Adoption Reluctance towards Food Delivery Apps among Generation Y.**

Experience does not moderate the relationship between Perceived Risks and Adoption Reluctance towards Food Delivery Apps. In a research that seemed to possess a corresponding result, according to Pires et al (2004), the probable explanation would be that consumer experience does not affect the perception towards the application due to the heterogeneous perception derived from different purchases. This would mean that different purchase experiences exhibit different risk perception but are not to be directly correlated.

**H3a: Features of Apps is negatively significant to Adoption Reluctance towards Food Delivery Apps among Generation Y in Malaysia.**

Features of apps have a significant relationship with adoption reluctance towards FDA. This may be due to the poor interface design of the apps that reduce user-friendliness. The product image served as an important interface item that influences the app's interactivity with its user. Local restaurants who possess FDA,



often have missing items on the menu. Therefore, the user would feel uncertain to purchase the food without any supported image as a reference. It could be considered as a limit of the user interface design. Past studies support that interface design will strongly affect user adoption intention, while including menu pictures along with short descriptions would be effective to generate higher purchase intention and favourable attitude towards the apps (Alqahtani & Orji, 2019., Hou, Yang & Sun, 2017).

### **H3b: Experience moderates the negative relationship between Features of Apps and Adoption Reluctance towards Food Delivery Apps among Generation Y**

Experience does not moderate the relationship between features of apps and adoption reluctance towards FDA. This might be due to users having a deep preconception towards the FDA. Users would feel troublesome if encountered problems while using the app leading them to perceive the app's lacking. This can be supported by Palau-Saumell et al (2019), where users may find a system is difficult to use if they feel the app itself is lacking support. Therefore, users would reject the FDA based on their own bias towards the app although they did not have actual experience on issues that happen while using the apps.

## **5.2 Implication of the Study**

### **5.2.1 Theoretical Implication**

The theoretical framework of TAM theory has been adopted in this study to examine the adoption reluctance towards FDA among generation Y in Malaysia. There are 3 independent variables (SI, PR, FMA) and one moderator (E) are investigated. To determine the significance of relationships between the independent variables and the dependent variable (AR), and to assess whether there is a moderation towards each relationship as stated, SmartPLS 3 is utilized to obtain the results.

The new proposed framework in this study can act as a reference to aid by providing better insight for those who are intended to explore relevant studies. Moreover, this study is also helpful to other bodies of knowledge as past research related to the contrasting opinions that reject adopting FDA are still rare. Additionally, the data analysis results demonstrated that experience does play a role on facilitates the relationship between the IVs and DV. Hence, it could contribute to marketers, business owners as well as the food delivery service providers to enhance their overall service delivery by understanding the factors that causes reluctant behaviours towards the FDA.

### **5.2.2 Managerial Implication**

As H1b is supported, experience facilitates the relationship between Social Influence and Adoption Reluctance towards FDA among Generation Y. Thus, experience plays an important role in affecting the adoption behaviour of the FDA. Government can support the FDA developers by introducing subsidising policies that encourage relationships between government and business applications to improve application usage. With the financial help, the application developers can focus on stimulating usage experience by introducing new users, free credits. By granting credits, users are more motivated to use FDA as they would have the idea of receiving free food. This also tends to moderate social influence as consumers are known to share their methods of sharing benefits with families, friends, and acquaintances. Through this experience, the masses have at least fundamental knowledge and prior experience on FDA usage, thus leading them to feel less reluctant in purchasing experience.

Practitioners (such as developers and restaurant providers) can collaborate with the FDA platforms to improve their understanding of consumers. By prioritising feedback from consumers, the data collected can be used to develop a better business strategy. Starting with a framework of what

requires focusing, organising, and prioritising the number of updates for the application. One example is to reward users for introducing apps through sharing. This not only increases motivation but encourages more usage among peers. By sharing, it also improves social influence among users to make them feel part of the FDA. Additionally, implementing a self-operating payment channel like “e-wallet” could aid the FDA companies to enhance user confidence in terms of experiencing the FDA.

Since H2a was supported, it is understood that the perceived risk has a significant role in manipulating adoption reluctance. The risk of disclosure of personal information through online transactions is the main concern that causes reluctant behaviour towards adopting food delivery. As such, the government can introduce innovative technology within the market so that FDA companies can strengthen their data protection. This helps to build confidence within consumers to trust the security of their personal data. For example, cybersecurity insurance subsidization is offered to FDA companies. Cybersecurity insurance is very costly; thus, it will burden the small-medium FDA companies as they are not able to afford the high pay. Therefore, the subsidization would encourage the FDA firms to purchase cybersecurity insurance that safeguards the consumer data, which will also lead to a higher adoption rate as the user feels the sense of protection. More importantly, by introducing innovative technology such as blockchain technology among business holders can help in terms of management. This does not only benefit businesses but also helps government management.

Such a leading-edge technology will also allow developers to improve transparency which helps in building trust. Examples of the applications of blockchain include Real-time IoT operating systems which supervises software by executing set rules to reduce latency, increase multiprocessing, task management, and improve monitoring. For personal identity security, blockchain uses cryptography to secure information stored in a blockchain where key owners include their digital signature to prevent fraud through replication or altering. By ensuring security within FDA through technology, security risks can be drastically reduced. With blockchain technology, app

users can feel safer as developers can increase the security of the online transaction by improving its payment system. With that, issues related to transaction security can be reduced and avoided due to the chances that requiring signing-in to the online banking page, for instance, has been reduced.

Since H3a was supported, the features of mobile apps are one of the determinants of adoption reluctance towards FDA among generation Y in Malaysia. However, the barriers include the user interface and image accuracy as the main cause for the reluctant behaviour. With the government's assistance, by increasing flow and allowing foreign innovative technology, the country and its citizens can progress much faster. Doing so, technologies such as Semantic Data Analysis (SDA) and Computational Intelligence (CI) can help local education academies to teach young developers. SDA and CI would be able to help FDA companies improve the visual design of apps as well as strengthen the applications spine to help develop a more enjoyable experience for the customers. With CI technology, they can introduce evolutionary algorithms to recognise colour, brightness and contrast of apps or images to make it more attractive based on the consumers mobile phone colour settings. With SDA, it allows FDA to provide clear labels of information about foods such as ingredients which are able for customers to refer to the ingredients that are suitable for them or not.

The absence of relevant food images on the FDA menu creates a certain level of inconvenience to the user because they may feel uncertain without having an image as a reference. Hence, FDA companies, as well as the restaurant can adopt Artificial Intelligence (AI) with applications such as machine learning and image recognition to be integrated in operating systems to manage interface and imaging accuracy by accessing and acquiring large databases. Initially, practitioners would have to take high quality images of the food they serve. After doing so, they would have to upload and display each food image for the AI to develop a better graphical image so that FDA users have a better idea towards the offering. This is

because AI has the capability to fill in gaps within the image that has potentially lost pixels. As a result, users would feel more confident as they are able to see what the expected product would be.

Table 5.2  
*Key Findings and Implications of Policy Makers and Practitioners*

Key Findings	Implications	
	Government/Policy Makers	Practitioners/Businesses
Experience can alter user's reluctant behaviour to adopt FDA.	Develop subsidising policies that. Reduce weight on application developers. Provide new users credits to improve application usage.	Prioritise feedback to develop a customer centric framework for updates towards "e-wallets". Reward users for introducing apps through sharing.
Disclosure of personal information through online transactions is the main concern that users are reluctant to adopt food delivery.	Provide cyber insurance allowance to businesses with online FDA. Introducing blockchain technology among business holders.	Use blockchain technology. Implement Real-time IoT operating systems and personal identity security.
The app's user interface and image accuracy cause users to be reluctant to adopt FDA.	Increasing inflow of innovative technology such as Semantic Data Analysis (SDA) and Computational Intelligence (CI) to local education academies.	Adopting AI such as machine learning and image recognition to be integrated in operating systems to manage interface and imaging accuracy by accessing and acquiring large databases.

### **5.3 Limitations of the Study and Recommendations for Future Research**

There is a limitation of without receiving full participation responses during the process of data collection. As the research period was falling between the period of Movement Control Order (MCO), thus online Google Forms was adopted as the data collection method. As it goes online, the team found it was difficult to keep track of respondents' actual responses. This is due to the lack of physical confrontation which would inherently reduce the efforts given when filling up the questionnaire. Thus, the results achieved during the research might not accurately portray the behaviours, attitudes, or opinions toward FDA. Although online platforms are generalised to be much more convenient, the reality is that questionnaires shared on social media tend to go unnoticed, ignored, and even most of them are not willing to participate. Consequently, the researchers were required to send the survey forms one by one to the masses individually or in smaller groups, which ended up dragging the overall data collection efficiency. Moreover, there were surveyees who could not fully comprehend the purpose of the study and required assistance in terms of explaining the questions. This poses an inconvenience as communicating through online platforms may be efficient but not as effective. Hence, future researchers are advised to conduct offline or physical mode for distributing surveys, as it is a more sincere and approachable way to obtain responses from the masses. This method would be relatively efficient in terms of acquiring quality data while also allowing researchers to communicate much more effectively with the surveyees as they might require assistance.

Another limitation was found during data analysis. As SmartPLS software is adopted in this study, the team found that a professional license is required to run the data, thus a 30-day free trial version served as the only way to be adopted to save cost. Moreover, SmartPLS is a completely new system adopted by the team, the steps of running the data have become a concern of getting accurate data.

As for the sample profile, it is found that most of the population are aged between 25-30 years old with a percentage 73.6 overall. It was 17.8% for ages between 31-35 and 8.6% for ages between 36-40. This is due to the lack of a participant in the

generation pool where younger users are keener to online surveys as compared to older individuals. Despite being in the same generation, the knowledge of technology would still differ, and the age group has the potential to specifically identify the behaviour users have towards FDA. Intrinsically, younger individuals are easier to recruit as a surveyee compared to older individuals when using online questionnaire format. With much of the population to be aged around 25-30 the data analysed have the potential to be skewed and biased toward the younger part of the millennial generation when the research is focusing on millennials. As a solution for future researchers, using small rewards like e-coupons for F&B related businesses to reward surveyees might be able to attract older individuals to participate in the research.

Finally, since the study is focusing on Malaysia's FDA context, thus the responses gathered were just determining the reluctant behaviour of Malaysians towards FDA available in the country. As a result, future researchers are urged to carry out research emphasizing foreign FDA context, as the residents in foreign countries hold different lifestyles, yet with different FDA choices available, and thus it would stimulate different behaviour towards the services offered by varied FDA. Meanwhile, these studies would also serve as a reference that benefits the FDA companies which are intended to expand their service by entering the foreign market.

## **5.4 Conclusion**

To sum up, the key findings of the current study have been developed based on the result of the hypotheses test. The theoretical and managerial implications have been proposed to provide better insights and possible suggestions for policymakers and practitioners in order to further improve the FDA functionality soon. Lastly, the limitations and recommendations related to the current study have also been stated with the aim of aiding future researchers to enhance research quality.

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APPENDICES

Appendix 3.1: Survey Questionnaire



**UNIVERSITI TUNKU ABDUL RAHMAN**

**Faculty of Business and Finance**

**BACHELOR OF MARKETING (HONS)**

**FINAL YEAR PROJECT**

**Title of topic: Determinants of Food Delivery Apps (FDA) Adoption  
Reluctance among Generation Y in Malaysia**

**Survey Questionnaire**

Dear Participants,

We are the undergraduate final year students from Faculty of Business and Finance in Universiti Tunku Abdul Rahman (UTAR). We are doing a study that related to the subject mentioned above. Your response is very useful to us in providing useful indications to relevant policy makers to develop appropriate policy that can increase tourist's intention to visit heritage site in Malaysia.

Please take a few moments to answer the following questions. There will be no risk involved on your participation in this survey. Your identity and responses will be kept private and confidential. Your voluntary participation in this survey is greatly appreciated. The completion of this study implies consent for us to consolidate your data with others and to publish the results without identifying any respondents.

If you have any questions regarding to this research, please contact us via the email addresses below. Thank you for your consideration, and participation in this research project.

Yours Sincerely,

<b>Name</b>	<b>Student ID</b>	<b>Email</b>
1. Go Wei Nie	19ABB00161	weinie@lutar.my
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4. Wang Li Jian	17ABB04387	andrewwsj9657@lutar.my

**Section A: Demographic profile**

Please tick the following answer box for each question.

1. Gender

- Male
- Female

2. Age

- 25-30
- 31-35
- 36-40

3. Education Qualification

- SPM
- STPM
- Diploma
- Bachelor Degree
- Master Degree
- Doctorate

4. Occupation

- Employed
- Unemployed
- Self-employed
- Others: \_\_\_\_\_

4. Monthly Income (RM)

- Less than 2,000
- 2000 - 2,500
- 2,501 - 4,000
- Above 4000

5. When did you begin to use the food delivery apps (FDA)?

- Before the MCO
- During the MCO

6. Which type food delivery apps (FDA) have you used?

- Restaurant-to-Consumer (e.g: McDonald, KFC, Pizza Hut)
- Platform-to-Consumer (e.g: FoodPanda, Grab Food, DeliverEat)

**Section B: Factors that affect generation Y reluctance on using food delivery application (FDA)**

Please indicate your degree of agreement on the following statements by circling the numbers given, ranging from: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
AR1	Given a choice, I will avoid using the FDA.	1	2	3	4	5
AR2	I am unlikely to adopt the FDA.	1	2	3	4	5
AR3	I am not willing to use the FDA.	1	2	3	4	5
AR4	I am not interested in using the FDA.	1	2	3	4	5
AR5	I am not motivated to use the FDA.	1	2	3	4	5
AR6	I do not particularly appreciate using the FDA.	1	2	3	4	5

SI 1	Ordering food online matches my values.	1	2	3	4	5
SI 2	I feel proud when ordering food online.	1	2	3	4	5
SI 3	Ordering food online is a status symbol in my community.	1	2	3	4	5
SI 4	Mass media (e.g. television, newspaper, internet browsing) influences my behaviour typically.	1	2	3	4	5
SI 5	People who are important to me and around me influence my behaviour typically.	1	2	3	4	5

Determinants of Food Delivery Apps (FDA) Adoption Reluctance  
Among Generation Y in Malaysia

<b>PR1</b>	<b>There are adverse repercussions (e.g., risks) from using the FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR2</b>	<b>I feel irresponsible to use the FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR3</b>	<b>Food delivery service charges are overpriced and not worth the value.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR4</b>	<b>FDA has reliable functions.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR5</b>	<b>FDA does not fail to function.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR6</b>	<b>It is not very pleasant to use the FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR7</b>	<b>Consuming foods ordered through the FDA can make me feel unhealthy.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>PR8</b>	<b>I would rather spend my time on something else rather than trying to order food online.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

<b>FMA1</b>	<b>FDA is convenient to use.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA2</b>	<b>Food ordered thru FDA is always delivered on time.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA3</b>	<b>The transaction via FDA is safe.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA4</b>	<b>The FDA protects my personal information.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA5</b>	<b>Comprehensive details (e.g. prices, menu choices) are listed in the FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA6</b>	<b>FDA suggests appropriate and adjacent restaurants.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>FMA7</b>	<b>FDA allows the tracking of order status.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

Determinants of Food Delivery Apps (FDA) Adoption Reluctance  
Among Generation Y in Malaysia

<b>E1</b>	<b>I consider myself to be quite knowledgeable about the FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>E2</b>	<b>My FDA usage experience is engaging.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>E3</b>	<b>FDA usage enables me to learn new things.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>E4</b>	<b>My FDA usage experience is entertaining.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>E5</b>	<b>FDA usage enables me to escape from my daily routine.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>E6</b>	<b>I am engrossed in using FDA.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**Thank you for your contribution to our study.**

**Your participation is most appreciated.**

## Appendix 4.1: Convergent Validity Result

### Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
	Cronbach's Al...	rho_A	Composite Rel...	Average Varian...
Adoption Relu...	0.802	0.810	0.883	0.716
Features of Mo...	0.796	0.828	0.843	0.473
Perceived Risk ...	0.807	0.830	0.863	0.517
Social Influenc...	0.795	0.954	0.864	0.682

## Appendix 4.2: HTMT Result

### Discriminant Validity

	Adoption Relu...	Features of Mo...	Perceived Risk ...	Social Influenc...
Adoption Relu...				
Features of Mo...	0.340			
Perceived Risk ...	0.790	0.193		
Social Influenc...	0.264	0.420	0.261	

## Appendix 4.3: Cross Loadings

### Discriminant Validity

	Adoption Relu...	Features of Mo...	Perceived Risk ...	Social Influenc...
AR1	0.824	-0.262	0.496	-0.245
AR2	0.879	-0.319	0.600	-0.219
AR6	0.835	-0.266	0.532	-0.145
FMA1	-0.361	0.746	-0.259	0.275
FMA2	-0.197	0.629	-0.088	0.406
FMA3	-0.187	0.619	-0.052	0.265
FMA5	-0.058	0.697	0.016	0.159
FMA6	-0.181	0.703	-0.048	0.200
FMA7	-0.156	0.726	-0.056	0.162
PR1	0.373	-0.031	0.558	-0.124
PR2	0.510	-0.145	0.789	0.044
PR3	0.329	-0.102	0.573	-0.031
PR6	0.447	-0.114	0.739	-0.082
PR7	0.520	-0.161	0.792	-0.123
PR8	0.552	-0.146	0.815	-0.327
SI1	-0.264	0.377	-0.255	0.912
SI2	-0.176	0.284	-0.060	0.855
SI3	-0.070	0.251	0.118	0.695



**Appendix 4.4: Path Analysis (Collinearity Statistics [Outer VIF])**

**Collinearity Statistics (VIF)**

Outer VIF Values Inner VIF Values Copy to Clipboard: Excel Format R Format

	VIF
AR1	1.666
AR2	1.860
AR6	1.688
FMA1	1.271
FMA2	1.274
FMA3	1.319
FMA5	2.080
FMA6	1.848
FMA7	1.929
PR1	1.336
PR2	1.845
PR3	1.325
PR6	1.627
PR7	2.158
PR8	2.031
SI1	1.574
SI2	2.032
SI3	1.704

**Appendix 4.5: Path Analysis (Collinearity Statistics [Inner VIF])**

**Collinearity Statistics (VIF)**

Outer VIF Values Inner VIF Values Copy to Clipboard: Excel Format R Format

	Adoption Relu...	Features of Mo...	Perceived Risk ...	Social Influenc...
Adoption Relu...				
Features of Mo...	1.187			
Perceived Risk ...	1.042			
Social Influenc...	1.181			

**Appendix 4.6: Path Analysis: (Collinearity Statistics [Inner VIF with moderator])**

**Collinearity Statistics (VIF)**

Outer VIF Values Inner VIF Values Copy to Clipboard: Excel Format R Format

	Adoption Relu...	Experience_	FMA moderator	Features of Mo...	PR moderator	Perceived Risk ...	SI moderator	Social Influen...
Adoption Relu...								
Experience_	1.925							
FMA moderator	1.442							
Features of Mo...	1.548							
PR moderator	1.232							
Perceived Risk ...	1.268							
SI moderator	1.462							
Social Influen...	1.627							

### Appendix 4.7: Path Analysis (Path Coefficients)

#### Path Coefficients

	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics ( O/...	P Values
Experience_ -> Adoption...	-0.127	-0.135	0.083	1.538	0.125
FMA moderator -> Adop...	-0.057	-0.051	0.068	0.842	0.400
Features of Mobile Apps ...	-0.109	-0.194	0.062	3.039	0.002
PR moderator -> Adopti...	0.064	0.062	0.061	1.044	0.297
Perceived Risk (PR) -> A...	0.554	0.560	0.058	9.598	0.000
SI moderator -> Adoptio...	0.148	0.146	0.072	2.045	0.041
Social Influence (SI) -> A...	-0.012	-0.015	0.079	0.153	0.879

### Appendix 4.8: Path Analysis (R-Square)

#### R Square

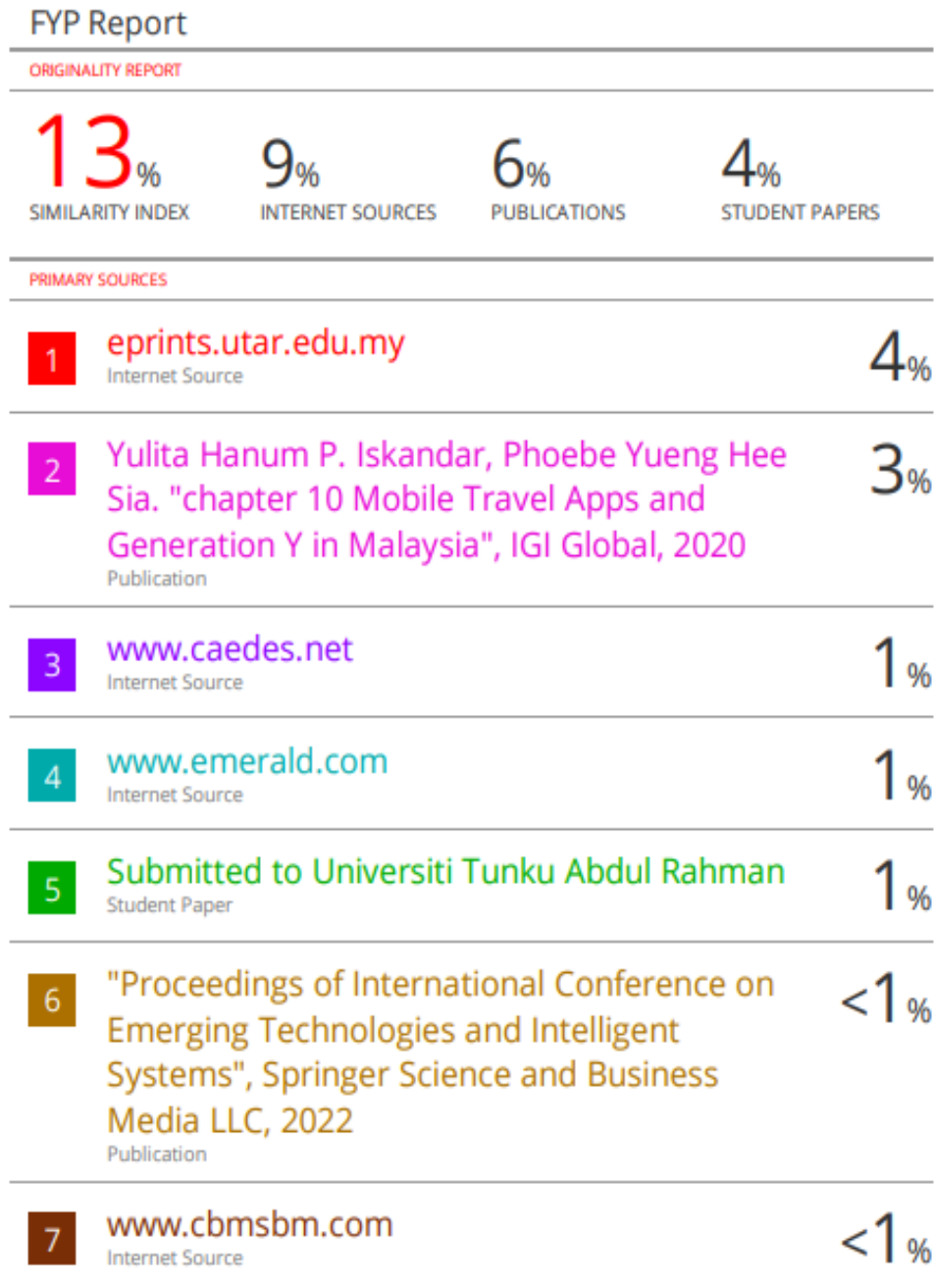
	R Square	R Square Adjusted
Adoption Relu...	0.470	0.460

### Appendix 4.9: Path Analysis (R-Square Adjusted)

#### R Square

	R Square	R Square Adjusted
Adoption Relu...	0.502	0.480

Appendix 5.1 Turnitin Report



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