

UNIVERSITI TEKNOLOGI MARA

**FACTORS INFLUENCING THE USE
OF FOOD DELIVERY
APPLICATIONS: AN EXTENSION
OF THE TECHNOLOGY
ACCEPTANCE MODEL (TAM)
WITH THE MODERATING ROLE
OF AGE GENERATION**

NURUL SYAHIRAH BINTI IDRIS

MSc

June 2026

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NURUL SYAHIRAH BINTI IDRIS

Thesis submitted in fulfilment
of the requirements for the degree of
Master of Science in Foodservice Management

Faculty Hotel and Tourism Management

June 2026

CONFIRMATION BY PANEL OF EXAMINERS

I certify that a Panel of Examiners has met on 30th January 2026 to conduct the final examination of Nurul Syahirah binti Idris on her Masters of Science thesis entitled “Factors Influencing the Use of Food Delivery Applications: An Extension of the Technology Acceptance Model (TAM) With the Moderating Role of Age Generation” in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiner recommends that the student be awarded the relevant degree. The Panel of Examiners was as follows:

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I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

The growing popularity of food delivery applications (FDAs) has transformed how consumers, particularly in both developed and emerging countries, access food conveniently and efficiently. FDAs have also provided restaurants with an opportunity to boost revenue without increasing their seating capacity. Despite this trend, it is important to understand what drives FDA usage across generations. This study empirically discovers extended the Technology Acceptance Model (TAM) by including visibility, affordance value, and trust in application platform as additional variables. The present study adopted the use of Technology Acceptance Model (TAM) as the study framework. A quantitative approach was used, employing a survey with a cross-sectional time frame. A total of 270 responses were collected and analysed using descriptive statistics and PLS-SEM. This study aims to assess whether generations moderate the relationship between these factors and the actual usage of FDAs. Participants were recruited from two generations: younger and older. The findings revealed that generations did not significantly moderate any of the relationships, indicating that both groups responded similarly to the influencing factors. Perceived usefulness, visibility, affordance value, and trust in application platform were found to positively influence FDA usage, while perceived ease of use did not show a significant effect. These insights provide directions for future research and practical strategies in the food delivery industry

Keywords: Technology Acceptance Model Theory, Food Delivery Applications, Perceived Ease of Use, Perceived Usefulness, Visibility, Affordance Value, Trust in Application Platform, Actual Usage

ACKNOWLEDGEMENT

First and foremost, I would like to express my gratitude to Allah S.W.T for providing me with the determination, blessings, perseverance, and health to complete the entire semester of study. Without the encouragement and support of many wonderful people around me, I would never have begun this research or have been able to complete it. Ts. Dr. Noradzhar bin Baba, my main supervisor, deserves my most sincere appreciation for the time and effort he has invested in mentoring me and providing invaluable feedback and advice. I would like to express my gratitude to my co-supervisor, Dr. Muhammad Safuan bin Abdul Latip, for his helpful feedback and suggestions, which helped me improve this thesis. He has been a constant source of optimism during difficult periods. My commitment would not have been as strong without their encouragement and support.

Without the support of loved ones, I would never have been able to finish my master's research programme. My mother, _____, faced many challenges while I was completing my master's degree, and for that, I am eternally grateful. I wish to extend my gratitude to my sister Shafikah, brother Izzham, and my dear father, Idris bin Ismail. Since I first started working on this thesis, they have been there for me, lovingly supporting and encouraging me every step of the way. Additionally, special appreciation is also extended to my friends, Nur Adriana Yusli and Muhammad Afiq Zulkifly, for their support and the knowledge shared. May all their sincere assistance be rewarded by Allah S.W.T. Lastly, I wish to express my appreciation to the members of the Faculty of Hotel and Tourism Management UiTM, as well as the rest of the university's faculty and staff, for all the help they provided me during my enrolment.

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LIST OF SYMBOLS

Symbols

R^2 Coefficient of Determination

β Path Coefficients

Q^2 Predictive Relevance

n Sample Size

f^2 Effect Size

R^2 Coefficient of Determination

β Path Coefficients

LIST OF ABBREVIATIONS

AU	Actual Usage
AV	Affordance Value
AVE	Average Variance Extracted
CMB	Common Method Bias
COVID-19	Coronavirus Disease 2019
CR	Composite Reliability
EM	Expectation Maximization
FDAs	Food Delivery Applications
HTMT	Heterotrait – Monotrait Ratio
LL	Lower Limit
LM	Linear Regression Model
MAE	Mean Absolute Error
MCAR	Missing Completely at Random
MCO	Movement Control Order
MGA	Multi-Group Analysis
PDPA	Personal Data Protection Act
PEOU	Perceived Ease of Use
PLS	Partial Least Square
PLS-SEM	Partial Least Square Structural Equation Modelling
PU	Perceived Usefulness
RM	Ringgit Malaysia
RMSE	Root Mean Squared Error
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TR	Trust In Application Platform
UL	Upper Limit
UTAUT	Unified Theory of Acceptance and Use of Technology
USD	US Dollars
V	Visibility

VIF

Variance Inflation Factor

CHAPTER 1

INTRODUCTION

1.1 Research Background

This chapter begins with an overview of the research, followed by a clear explanation of the identified problems, research objectives, and research questions. Following that, this chapter explores the theoretical underpinning of this study, drawing on TAM theory. The significance of this research is clarified in terms of its potential outcomes. Finally, this chapter defines the terms used in the research and describes the conceptual framework of the thesis.

1.2 Background of Study

The global rise in online food ordering and delivery services over the past decade can be attributed to consumers' convenience and the widespread use of smartphones and mobile applications among them (Roh & Park, 2019, as cited in Wen et al., 2022). In line with this trend, online food delivery platforms have been in operation for over 25 years and represent a rapidly expanding sector (Shankar et al., 2022). Specifically, Shahruliza Muhammad (2019) projected that Malaysia's food delivery industry would surpass USD 319.1 million (approximately RM1.8 billion) by the year 2026. Prior to 2025, the Malaysian online food delivery market had already demonstrated substantial growth, particularly during the COVID-19 period. For instance, between 2020 and 2022, the demand for online food delivery services increased significantly as movement restrictions and safety concerns encouraged consumers to rely on digital food purchasing channels (Li et al., 2020; Wen et al., 2022). Furthermore, online food delivery services recorded strong market expansion in Malaysia before 2023, driven by increased smartphone penetration, improved internet accessibility, and changing consumer lifestyles (Shankar et al., 2022).

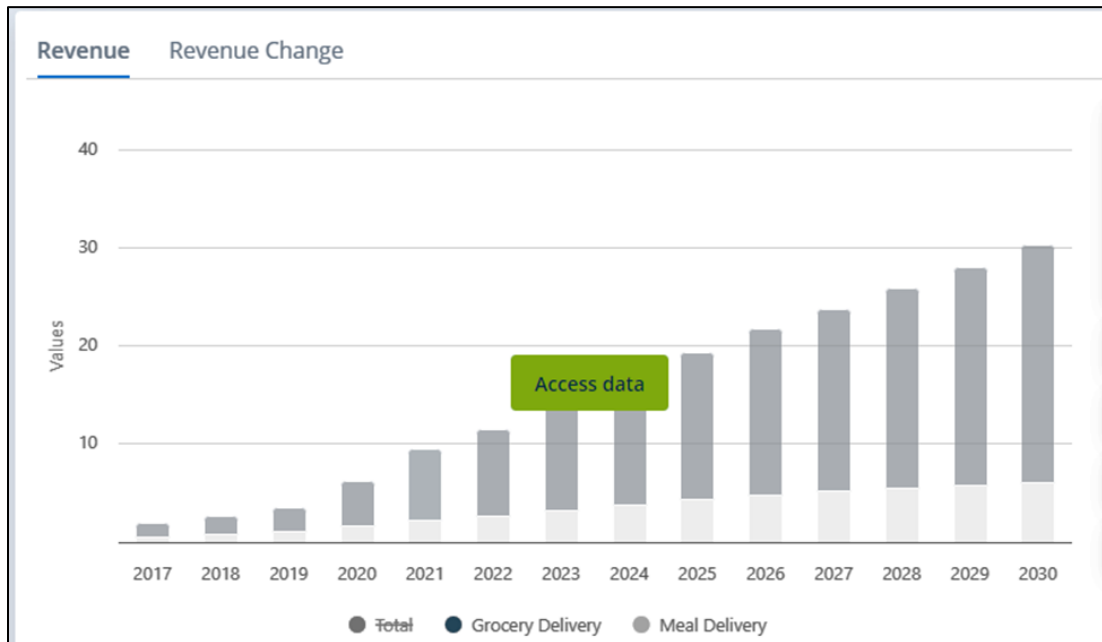


Figure 1.1 The Sources of Online Food Delivery - Malaysia (Statista,2026)

Furthermore, the food delivery sector has undergone a significant transformation in recent years due to the emergence of digital platforms, which have revolutionised the way customers satisfy their culinary needs (Li et al., 2020). In Malaysia, this transformation is strongly supported by the presence of major food delivery applications (FDAs) such as GrabFood, Foodpanda Malaysia, Bungkus It and ShopeeFood Malaysia, Airasia Food which serve as key digital service providers connecting consumers, restaurants, and delivery partners. This innovation not only enhances customer convenience but also generates new opportunities for businesses and employment. Moreover, the rapid rise in the popularity of FDAs has played a crucial role in accelerating the widespread adoption of food delivery services across Malaysia by providing easy access to food options through mobile applications (Wen et al., 2022).

The growing popularity of food delivery applications, particularly among the younger generation, reflects a strong preference for convenience in consumers' behaviour (Yulius et al., 2022). Having grown up with technology, the younger generation, known as "Digital Natives," demonstrates a high level of competence in using digital tools (Smith et al., 2020). They are used to smooth online experiences and anticipate ease to be a fundamental aspect of their interactions, even in the context of food consumption (Poon & Tung, 2022). Therefore, it is not surprising that online FDAs have become popular among younger people. Moreover, the expansion of the FDAs

market volume has intensified competition among service providers (Lee et al., 2023). Thus, understanding the characteristics of customers is crucial for crafting a more efficient marketing strategy to increase market share (Lee et al., 2023).

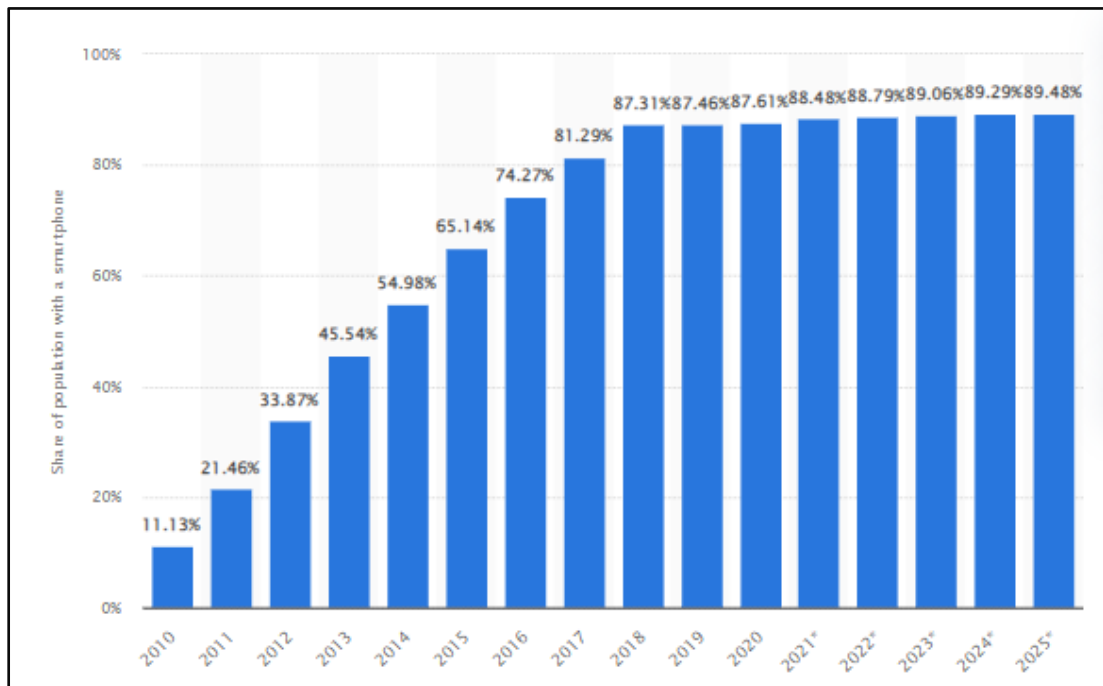


Figure 1.2 The Population in Malaysia Used Smartphones in 2020 (Statista, 2026)

Additionally, this underscores the increasing impact of technology in shaping customers' actual usage and preferences. Data from Statista (2023) indicate that approximately 87.61% of Malaysia's population used smartphones in 2020, a figure expected to increase further in the coming years. Due to the widespread popularity of social media sites, many businesses are using them as a method to create and strengthen customer relationships (Nagi & Mohammed, 2021).

In addition, Belanche et al. (2020) highlight the importance of food delivery services in modern urban lifestyles, emphasising how they cater to consumers' demand for convenience. Building on this, the rise of food delivery applications in recent years is closely linked to this demand and the widespread adoption of smartphones (Wen et al., 2022). This technological shift has not only transformed consumer behaviour but also intensified competition among food delivery platforms. A study by Roh and Park (2019) demonstrates the influence of mobile devices on the food delivery industry, focusing on the accomplishments of well-known applications such as Food Panda, Deliver Eat, and Grab Food. These applications have successfully engaged customers with a variety of nearby restaurant choices. Customers have the convenience of

accessing menus, placing orders, and making payments through dedicated applications and websites, all from their own devices. In addition, Lee et al. (2019) discovered that the expansion of the food delivery industry is driven by a high demand for convenient and effective solutions.

The TAM evaluates the worth of technology based on customers' viewpoints, emphasising factors including utility, convenience of use, and actual utilization (Davis, 1989; Teo, 2010; Kang & Namkung, 2019). It posits that perceived usefulness significantly influences both behavioural intention and actual system usage, as supported by empirical findings (Venkatesh, Thong, & Xu, 2012). This study selects actual usage as the dependent variable due to its widespread popularity and significance. Correspondingly, this study aims to analyse how two generations within the Klang Valley population respond to the availability of FDAs. This study is based on the TAM, with actual usage as the primary outcome variable.

Furthermore, by examining the factors that influence FDA usage among Klang Valley consumers, this study aims to address the existing research gaps. The growing significance of FDAs to the future of many restaurants and food establishments makes it more important to understand the factors that influence their usage. This study aims to examine the effects of FDA visibility, affordance value, and trust in FDA usage across two generations using the TAM model as its major theoretical framework. In line with the recommendations of earlier studies, this study will use purposive sampling as its primary sampling strategy to achieve its aims. By determining what variables impact FDA usage among Klang Valley consumers, this study adds to the existing body of knowledge on technology adoption in the food business and provides valuable insights to stakeholders in the sector.

1.3 Problem Statement

Food delivery applications offer services that cater to customers' demand for convenience (Chan, 2021). As delivery and takeaway services have become key drivers of revenue and sales growth, many restaurants have shifted their business focus towards these service channels. In 2019, 90.1% of individuals and households in Malaysia had access to the Internet, and 97.1% of them participated in social networking activities (Department of Statistics Malaysia, 2020). This transition towards a digital lifestyle has

contributed to the development of food delivery applications (FDAs) in response to the increasing demand for off-premises food orders within the foodservice industry. Recent studies further support this trend by highlighting the rapid growth of digital ordering and delivery services as a major transformation in foodservice business models (Kang et al., 2021).

The high demand for FDAs is influenced by several factors, including hectic work schedules and the need for fast and convenient food delivery, particularly among the younger generation and tech-savvy customers. The younger generation, typically defined as individuals aged between 18 and 35 years, including Generation Z and younger Millennials, demonstrates high familiarity with digital technologies and mobile applications, which encourages the adoption of FDAs (Tandon et al., 2021). Furthermore, the primary objective of food delivery applications is to provide comprehensive food-related information, including prices, menus, and customer reviews, to support informed purchasing decisions (Trivedi & Singh, 2021).

The rising popularity of FDAs has been significant due to changes in consumer behaviour brought by the COVID-19 pandemic, particularly among younger people and foodies (Itani & Hollebeek, 2021; Marinkovic & Lazarevic, 2021). This shift in behaviour is due to the increased value placed on non-contact services for personal protection (Zhao & Bachao, 2020; Bae & Chang, 2021; Shim et al., 2021). According to Marcellus (2020), due to the requirement or desire to remain at home during the pandemic, food delivery businesses have become the preferred method of procuring food. Accordingly, the foodservice industry has been severely affected by the economic downturn, with many restaurants closed for extended periods due to lockdowns (Kumar & Shah, 2021). The convenience of delivering food to one's home has also contributed to the popularity of FDAs (Naeem, 2021; Roggeveen & Sethuraman, 2020).

In addition, a gap still exists in examining the moderating effect of the generational differences on the relationship between FDAs usage and purchase behaviours (Chan et al., 2017). Previous studies found that the younger generation prefers FDAs due to their convenience and efficiency. This corresponds to earlier observations that the older generation prefers traditional methods, possibly due to limited technological familiarity and skepticism toward electronic payment systems. A study by Jin and Fan (2022) affirm this perspective, reporting that while older adults in China often use both traditional and digital financial tools, their adoption of application-

based services is limited by factors such as low digital literacy, lack of self-confidence, and concerns over security. Das (2024) also noted that most older users strongly prefer conventional authentication methods of digital payment, highlighting the hesitancy toward unfamiliar mobile interfaces and multi-factor systems. This has forced everyone to reconsider their preferences and modify the new circumstances. As a result, incorporating FDAs into traditional business models has become essential, rather than a discretionary measure.

For the past few years, the market share of FDAs has significantly expanded and grown in competitiveness. This is particularly relevant among the younger generation who are familiar with the use of mobile applications and own smartphones (Saad, 2020). In their field of study, many researchers have included the investigation of generational differences as a moderating factor. In addition, Zwanka and Buff (2020) recommend that researchers conduct empirical tests on one or more generations to figure out whether there are any generation-specific changes in attitudes and actions. This study addresses the gap by providing the most recent examination of the change in value that consumers perceive during the post-pandemic period, along with how it affects customers' actual usage over two generations. Taking all these factors into consideration, this study fills the gap.

There is insufficient research on the elements that affect customers' adoption of technology-based services in FDAs, particularly in terms of actual usage. Nevertheless, there has been limited investigation specifically identifying the content, indicating that FDAs should include details on delivery timings and an expanded menu offering (Lee et al., 2023). It can be inferred that customers primarily obtain food information, delivery status, and review postings from food service delivery applications (Lee et al., 2023). Therefore, this study adopts actual usage as the dependent variable to test the utility of FDAs across two generations. The prior studies by Pitchay et al. (2021) and Chakraborty (2022) investigated this association using different techniques, study settings, and perspectives to demonstrate the links between these variables. As a result, understanding current customers' viewpoints is critical for timely feedback on the actual usage of food delivery services. Therefore, it is essential to examine how various antecedents affect customer factors influencing trust and the actual use of FDAs across generations.

Numerous studies have been conducted to examine the various factors that influence the use of food delivery services. One of the continuing challenges is maintaining consumer satisfaction with FDAs, where convenience plays a crucial role (Rabaa'i, 2022). The experience of online food purchasing is shaped by several factors, including reduced commute time, the quality of both food and digital services, and the users' confidence in the application platform (Arora et al., 2022). In addition, privacy and safety concerns regarding the delivery platforms may discourage customers from using the services (Puriwat & Tripopsakul, 2021). Consumers may also feel uncertain about several aspects when local restaurants partner with FDAs, particularly in terms of security, payment methods, service quality, delivery fees, and pricing (Ghosh, 2020). Reports have indicated instances of FDA riders misusing customer contact information obtained through delivery details, including cases of harassment (Foodpanda Delivery Rider, 2021). Additionally, high food prices and delivery fees are common concerns frequently reported by users of these applications. Supported by recent studies conducted in Asian and Southeast Asian contexts, which reveals that pricing perception is a strong negative predictor of customer satisfaction, even more than service quality or delivery delays (Hasan et al., 2025; Effendi et al., 2025; Ruslan et al., 2024). Contrarily, Nguyen et al. (2024) reported insignificant age differences in acceptance of similar mobile technologies, highlighting a gap and inconsistency in existing literature. Additionally, issues related to low food quality continue to reduce online ordering enthusiasm, as food quality has emerged as a leading determinant of dissatisfaction in FDA usage (Hasan et al., 2025; Ruslan et al., 2024).

In addition, factors such as competition, affordance value, user-friendly expectations, and trust in application platform play a role in influencing individuals' choices to use FDAs (Niu & Zhang, 2023). The presence of favorable conditions has a significant impact on how individuals make use of these services (Kusk & Nouwens, 2022). Additionally, the ability to offer delivery without investing in additional seating enables restaurants and bars to increase their customer base (Tandon et al., 2021). By exploring the factors mentioned above and their influence on the acceptance and usage, this study seeks to shed light on the effectiveness and significance of these variables in the Malaysian food delivery service industry.

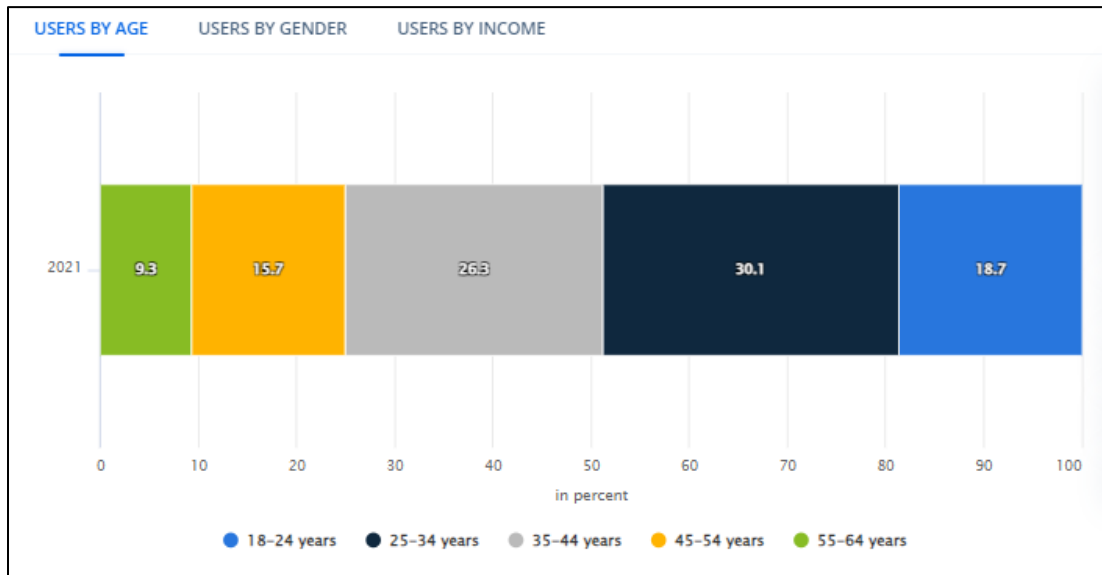


Figure 1.3 Statistic Of Food Delivery Customers Segregated By Their Age
Sources: Statista Market Insights, Statista Customer Insights Global

According to the data presented in Figure 2, a significant proportion of FDA users fall within the 25 to 44 age group, which predominantly corresponds to Millennials (Generation Y), with the upper range overlapping with Generation X (Dimock, 2019; Smith & Anderson, 2018). This pattern may be attributed to the higher disposable income and financial stability which are typically associated with individuals in this demographic. Supporting this observation, Rungruangjit and Charoenpornpanichkul (2023) found that the younger generation demonstrated a higher tendency to continue using FDAs in the post-COVID-19 period. Similarly, Rakuten Insight (2023) reported that the majority of users aged 25 to 34 expressed sustained interest in using FDAs after the pandemic, compared to significantly lower rates among older users. Although discount offers are often employed to attract and retain users, their real impact on actual usage and long-term customer engagement remains unclear (Liu & Kukar-Kinney, 2022). This issue is significant within the Southeast Asian context, where consumers' actual usage is shaped by the unique cultural, economic, and digital consumption patterns. Therefore, this study aims to examine how discount appeals influence consumer satisfaction and actual usage, with particular attention to generational differences as a moderating factor.

1.4 Research Gaps and Justifications

The current study investigates the relationship between various factors in FDAs, including perceived ease of use, perceived usefulness, visibility, affordance value, trust in application platform, actual usage, and user generations, which contribute to the existing body of knowledge.

This research highlights the overlooked significance of visibility in the business world as a predictor of consumer value, particularly within the context of food delivery applications (FDAs). According to the research by Kaur et al. (2021), FDA visibility has a substantial impact on consumer purchasing intentions. This finding underscores the influence of actual usage on consumer behaviour. Additionally, Talwar et al. (2020) found no significant connection between visibility and how customers evaluate the utility of a product. However, they proposed more international research on visibility as a predictor of actual usage of FDAs, which might eventually affect purchasing decisions. In this regard, business owners may make use of research findings to devise methods that will consistently encourage customers to use FDA services (Inthong et al., 2022). Talwar et al. (2020) demonstrated that visibility enhances functional value and purchase intention, although it does not directly increase perceived usefulness. Similarly, Harianto et al. (2022) identified visibility as a significant factor influencing repurchase intentions in the Jakarta context, indicating the continued relevance of visibility in credibly shaping consumers' outcomes, despite mixed effects on perceived utility.

There is a limitation in the number of studies that have been conducted on the actual usage of FDAs by customers, which must be filled. This is due to extremely insufficient research that has been conducted in the past regarding the actual usage in FDAs. Supported by Kulshreshtha and Sharma (2022), there has been a limited number of studies on the preferences of customers about FDAs. To validate the results of this study in the context of the "new normal" and the post-pandemic era, additional research focusing on specific urban areas is necessary. Furthermore, this study plan examines FDAs across several demographic cohorts in Klang Valley, one of Malaysia's largest and most diverse urban regions, which is home to a dense population with high smartphone penetration, widespread internet access, and a vibrant food delivery ecosystem. Focusing on Klang Valley allows the study to capture a representative

sample of FDA users across different age groups, income levels, and lifestyles, making it an ideal location for exploring variations in actual usage behaviour. Although a lot of studies have concentrated on the atmosphere of online restaurants (Suhartanto, Helmi Ali, Tan, Sjahroeddin, & Kusdibyo, 2019), there have been relatively few studies that have concentrated on the actual usage and behaviours of older generation in relation to the FDAs. The goal of this study was to investigate the features that affect different generations on the actual usage of FDAs.

1.5 Research Objectives

This study primarily investigates the relationship between perceived ease of use, perceived usefulness, visibility, affordance value and trust in application on actual usage towards FDAs in Klang Valley. The proposed research is specifically motivated by the following objectives:

RO 1: To examine the influences of perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform on the actual usage of FDAs.

RO 2: To examine the moderating effect of generations on the actual usage of FDAs.

1.6 Research Question

The two research questions derived from the objectives will be answered by the end of this study:

RQ 1: What are the influences of perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform on the actual usage of FDAs?

RQ 2: To what extent do the factors affecting customers' actual usage of FDAs moderated by generations?

1.7 Significance of Study

This study sheds light on:

1.7.1 Academic Perspectives

The academic value of this study is based on the fact that it conducts an in-depth investigation of the variety of elements that influence actual use, particularly in relation to the applications that involve FDAs. From the analysis of this study, the impact of perceived ease of use, perceived usefulness, visibility, affordance value, trust in application platform, and actual usage, has provided valuable insights into the developing field of digital food service platforms. Due to insufficient empirical evidence on a relationship between these independent elements and the behaviour of customers that is specific to FDAs, this study fills a key gap in the existing body of research. By investigating into this area, this study enhances our understanding of how users' perceptions, trust, and engagement with an application platform influence their tendency of sharing positive experiences and recommendations with others. Moreover, this study contributes to educational and empirical studies in the field, providing a nuanced understanding of the dynamics between the identified factors and actual usage of the FDAs. It enriches the existing body of knowledge by exploring the moderating effect of different generations, adding depth to our understanding of how generational differences interact with food delivery applications and share their experiences with others.

1.7.2 Practical Perspectives

The significance of this study lies in its insights into the factors influencing the actual usage of food delivery applications. These findings can assist application developers in enhancing their services and improving users' experience. Furthermore, this research is expected to benefit practitioners and researchers in the food delivery industry, ultimately improving customer service levels. FDAs have a substantial potential to influence end users' actual usage, as revealed by the factors identified in this research. By pinpointing these factors, this study aims to provide insights that can enhance the design, usability, and customer trust in FDAs. Ultimately, this study can

contribute to the growth and development of e-commerce in Malaysia and similar contexts.

1.8 Definition of the Key Terms

To prevent any misunderstanding, the terminologies used in this research must be defined. Each important terminology was described in depth in the subsequent chapter. The terminologies are as follows:

1.8.1 Food Delivery Applications

FDAs are mobile services that enable simple and effective online purchasement of products and services, together with offline delivery of such goods and services (Muangmee et al., 2021).

1.8.2 Technology Acceptance Model

The TAM model proposes that the consumer decisions regarding the usefulness and ease of use of a computer system are significant variables in determining whether the system will be accepted (Davis, 1989).

1.8.3 Perceived Ease of Use

The extent to which a person perceives that using the technology will be easy is the definition of perceived ease of use (Castillo & Bigne, 2021).

1.8.4 Perceived Usefulness

Perceived usefulness refers to an individual's belief that implementing a particular technology will improve his or her work performance (Burlea-Schiopoiu et al., 2022).

1.8.5 Visibility

Visibility is categorised into two components, the first component of which refers to the promotional materials associated with FDAs (promotion), and the second component of which refers to the recommendations obtained from other individuals utilising such applications, which are also regarded as a social influence in the existing literature (Burlea-Schiopoiu et al., 2022).

1.8.6 Affordance Value

The features, benefits, or qualities that are responsible for the value that customers obtain when they order meals through FDAs. These characteristics and qualities include some circumstances, including the listing of recommended restaurants, that may improve the consumption value that is derived through the usage of FDAs (Kaur et al., 2020).

1.8.7 Trust in Application Platform

Trust may be defined as the customers' perceptions regarding the safety provided by the retailers and the internet technologies. (Jun et al., 2022).

1.8.8 Generations

The concept of generations refers to the duration of an individual or action's existence, encompassing the span of life up until the present moment (Palau-Saumell et al., 2019).

1.9 Summary

This chapter provides a summary of this study and its core objectives. The problem statement has been thoroughly examined to comprehend the specific local situations and challenges. This study identified research gaps, outlined research objectives, and presented research questions that need to be addressed in the conclusion

of the research. This study's importance and extent were clearly elucidated to enhance comprehension of its focus.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter covers all the essential components of this study, including the underlying theories, study models, and previous empirical studies. To provide readers with a comprehensive understanding of this study area, the topic, and the underlying theories and research models, this section will cover these topics. To provide a clear interpretation of the research areas, each variable was thoroughly explained and discussed. The development of the hypotheses and the conceptual study framework is also presented in the middle section of the chapter.

2.2 Food Delivery Application

FDAs are mobile applications that use a user's location to provide real-time access to information and services relevant to their current surroundings (Dirsehan & Cankat, 2021). These applications enable customers to order food online and have it delivered directly to their doorsteps (Li et al., 2020). Ray et al. (2019) have identified two distinct categories of FDAs, each characterised by a unique model of operation. Restaurant franchises such as KFC, Domino's, and Pizza Hut are examples of businesses in the first category, as they operate their own mobile applications. Food delivery aggregators such as Food Panda and Grab Food are included in the second category, which comprises third-party intermediary services that connect customers to a variety of nearby dining options. These services connect customers to a variety of local dining establishments. Recent literature continues to support this categorization. Studies have emphasised that third-party platforms expand food choice through streamlined, multisourced interfaces (Kapoor & Vij, 2018; Shankar et al., 2022) and deliver high scalability during crises such as the COVID-19 pandemic (Roh et al., 2019; Ray & Bala, 2021). Moreover, reviews of food delivery ecosystems suggest that the industry bifurcates into two main models: restaurant-to-consumer and platform-to-consumer. The latter offers a broader selection of restaurants and greater logistical flexibility (Statista, 2022).

According to Muangmee et al. (2021), changes in customer behaviour and demography are two factors that can be used to evaluate this. Applications offer a solution to this problem, since many younger customers are unwilling to wait in line for food services at restaurants. These applications make dining at home easier and quicker. As a result, FDAs make it easier to order and get meals from restaurants (Dirsehan and Cankat, 2021). According to Chotigo and Kadono (2021) and Kumar and Shah (2021), current research suggests that the increase in popularity of FDAs began after the COVID-19 pandemic. This is because customers placed a greater importance on maintaining their health and made non-contact eating a higher priority. During the COVID-19 outbreak, many customers have turned to FDAs because restaurants have been unable to provide indoor eating options. This has caused an extensive queue of customers. For the year 2023, it is projected that there will be 53.9 million users (Lock, 2020). This indicates that the number of users is likely to increase annually. Therefore, FDAs have become an essential component in the development of the food delivery sector (Inthong et al., 2022).

2.3 Food Delivery Applications in Malaysia

Before the introduction of online food delivery services within the community, customers had only two options when they wanted to get food (Eka, 2022). The first option was to go out in search of food, while the second was to cook at home. The emergence of online food delivery has revolutionised customers' dining experiences by providing various benefits and conveniences (View of Management Control and Covert Exploitation Issues in Food Delivery Platforms, n.d.). Through online food delivery services, customers can virtually connect with restaurants and culinary businesses (Az-zahra et al., 2021). The systems for conducting online food orders in Malaysia have transitioned to a new phase. The utilization of contactless food delivery technologies during the COVID-19 pandemic has been instrumental in preventing the spread of the virus. Food delivery services are expanding in Malaysia, alongside the rise of such technologies. These applications have seen a notable surge in popularity, especially during the COVID-19 pandemic. Factors that influence customers' ongoing usage of these applications encompass performance expectancy, social influence, perceived usefulness, and perceived ease of use (Antara et al., 2022; Lahap et al., 2023).

Additionally, convenience and time saving emerge as pivotal determinants for sustained usage (Yapp & Kataraiian, 2022). Other crucial factors include trust in application platform, affordance value, ease of use, convenience, and perceived value (Amron et al., 2022). The wide range of food choices available through delivery applications seemingly does not have a significant impact on users' continued usage patterns. This phenomenon warrants investigation when examining the factors that influence the usage of food delivery applications across different generations. These findings hold substantial implications for Malaysia's online food delivery service sector, and future research could explore additional factors such as affordability, value for users, and trust in application platform.

According to a study by Mohd Najmie et al. (2024), consumers typically have at least two food delivery applications installed on their smartphones and use them approximately three times per month. The same study revealed that 24% of Malaysian respondents reported ordering food via delivery applications several times a month, while 22% indicated that they used such services once or twice a week. Recent data confirm the continued strength of the aggregator model. For example, in Malaysia, Foodpanda's Android application has been installed nearly 20 million times domestically, signaling high user adoption and market penetration (Rosli, 2018). This reflects the sustained popularity of third-party platforms in delivering a diverse range of restaurant choices via efficient mobile interfaces. In recent years, the growing reliance on FDAs has been attributed to the increasingly fast-paced lifestyle of consumers and the convenience these platforms offer in accessing a wider range of food options (Pitchay et al., 2022). This trend underscores the role of FDAs in facilitating broader food exploration and enhancing consumer convenience. During the Movement Control Order (MCO) period, there was a notable surge in the establishment and demand for businesses operating on online platforms and offering delivery services (Omar, 2021). Moreover, the proliferation of food delivery systems not only served to meet consumer needs but also provided alternative income-generating opportunities for individuals who experienced job losses or financial instability because of the COVID-19 pandemic (Suhartanto et al., 2019).

2.4 The Underpinning Theories and Study Models

2.4.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), originally proposed by Davis (1989), remains a widely accepted theoretical framework for analysing individuals' acceptance and use of technology. The model is grounded in two primary constructs, which are perceived usefulness and perceived ease of use. Perceived usefulness and perceived ease of use are the two primary factors influencing whether individuals will adopt a technology system. These perceptions can predict users' attitudes and intentions toward system utilization. Recent studies have affirmed the validity of TAM across various contexts, demonstrating its continued relevance in understanding technology acceptance (Jiang et al., 2021; Wang et al., 2023). The model has been widely adapted and modified to reflect advancements in technology and user behaviour.

Recent empirical research has demonstrated that TAM can account for approximately 40% of the variance in behavioural intention and actual system use (Jiang et al., 2021). While TAM is a valuable baseline model, it has been critiqued for its limited explanatory power regarding users' attitudes and behavioural intentions, particularly due to its omission of critical external, demographic, and contextual factors (Mailizar et al., 2021; Wang et al., 2023).

To address these limitations, scholars have increasingly extended TAM by integrating external constructs such as antecedents, moderators, and mediators that enhance its predictive capacity (Li & Lin, 2022; Chen, 2023). For example, extensions of TAM in various digital contexts have introduced constructs including trust, system quality, environmental concern, and user experience, all of which significantly influence behavioural intention and actual usage. In line with this scholarly direction, the present study extends TAM by incorporating actual usage as an external construct to improve the model's explanatory strength in predicting technology adoption.

Over time, TAM has evolved into more comprehensive frameworks. It was integrated into the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) and further extended into UTAUT2 (Venkatesh et al., 2012). These unified theories consolidate elements from several behavioural models, including the Theory of Reasoned Action, the Theory of Planned Behaviour, the Motivational

Model, and Social Cognitive Theory. Contemporary research has extended TAM by incorporating external constructs such as trust, social norms, environmental concern, and actual usage to improve its explanatory power (Li & Lin, 2022; Chen, 2023).

While UTAUT and UTAUT2 provide broader explanatory frameworks, they were initially developed for organisational and workplace contexts, where technology use is often mandatory (Venkatesh et al., 2012), together with incorporating multiple moderators such as age, gender, and experience. In contrast, this study focuses on voluntary consumer adoption of FDAs, where PU and PEOU form the core of TAM and have consistently emerged as the most influential determinants of behavioural intention (King & He, 2006; Lee et al., 2003). The parsimony of TAM enables more focused hypothesis testing on the study's selected external variables without the added complexity of UTAUT's numerous constructs and moderators (Davis, 1989). Moreover, TAM has been extensively and successfully applied in previous FDA and mobile application adoption studies (Zhao & Bacao, 2020; Kang & Namkung, 2019), reinforcing its relevance and suitability for the present research context. Figure 3 illustrates the original TAM framework by Davis (1989).

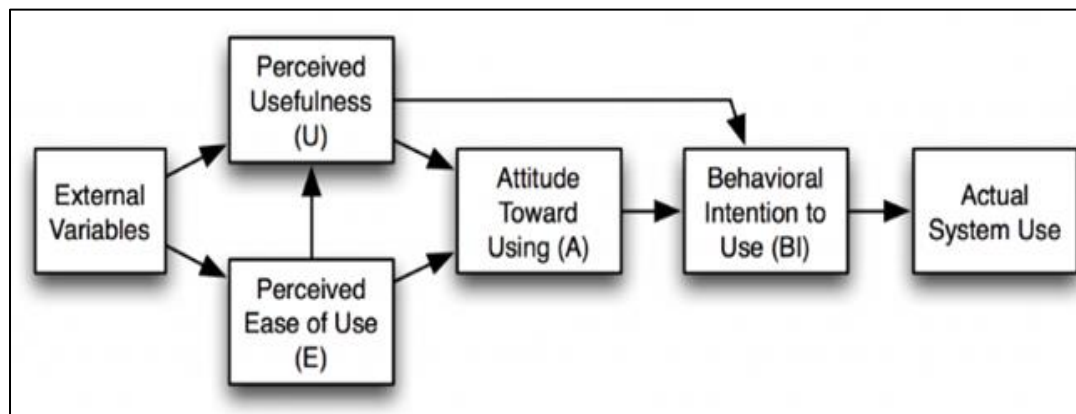


Figure 2.1 Original TAM Framework by Davis et al. (1989)

To explain the acceptance and utilisation of technology, the literature has utilised several different theoretical frameworks. The TAM theory, developed by Davis et al. in 1989 and cited in Silva et al. (2022), is currently one of the most frequently used models to explain the acceptance of new technologies (Suh & Han, 2002). It is also recognised as a valid and strong model (King & He, 2006). According to Silva et al. (2022), there has been some research that has utilised TAM to investigate individuals' actual usage of applications. The results of this research provide evidence

that the TAM is an adequate theoretical framework for explaining the reasons behind the decision of individuals to utilise mobile applications.

In the realm of technology adoption, perceived ease of use (PEOU) refers to the degree to which users believe that interacting with a technological system will require minimal effort or complexity (Tahar et al., 2020). Perceived usefulness (PU), on the other hand, is defined as the extent to which an individual believes that using a particular technology will improve their job performance (Davis, 1989). These two constructs form the foundation of the TAM, which has been extensively applied to examine user behaviour across various technological contexts, including the use of FDAs (Zhao & Bachao, 2020).

Furthermore, according to Jun et al. (2022), individuals' behavioural intentions to adopt technology are influenced by these core beliefs, highlighting the continued relevance of TAM in digital consumer studies. These sectors include education (Teo, 2010), transportation (Chen et al., 2007; Min et al., 2019), medical services (Kamal et al., 2020), tourism (Tom Dieck & Jung, 2018), hospitality (Kim et al., 2008), online travel agencies and accommodation sharing platforms (Jung et al., 2021). For example, Kang and Namkung (2019) explored the applicability of TAM within an online-to-offline service context. In addition, several studies have employed TAM as a theoretical framework to analyse consumer behaviour and user interaction with applications (Lee et al., 2017, 2019; Zhao & Bachao, 2020). These findings collectively highlight TAM's suitability as a robust framework for understanding the factors that influence individuals' decisions to adopt and use technological applications.

2.5 Perceived Ease of Use

The concept of PEOU refers to the extent to which an individual holds the belief that utilising a technological system will require minimal effort (Castillo & Bigne, 2021, p. 879). In their recent study, Jun et al. (2022) examined the correlation between TR and PEOU within the domain of FDAs. Pavlou (2003) asserts that TR has an impact on the perception of ease of use. In a study conducted by Kang and Namkung (2019), the researchers examined the relationship between customer behavioural intentions toward the actual use of FDAs and two key factors, which are PU and PEOU. The findings of this study indicate that both PU and PEOU have a significant impact on customers'

actual usage. To ensure convenient access to such information, the use of an application is necessary.

Chakraborty (2022) highlights that users of FDAs place a strong emphasis on ease of use, owing to the versatility of digital devices across various usage contexts. Similarly, a study by Ray et al. (2019) found that factors such as ease of use and the ability to search and browse restaurant listings significantly influenced consumers' actual usage of FDAs. Furthermore, delivering optimal value to customers has been shown to positively impact behavioural outcomes, including customer satisfaction, repurchase intentions, and loyalty (Barrutia & Gilsanz, 2012; Martinez et al., 2019; Roustae & Jamshidi, 2020).

It has been suggested that PEOU is a critical factor influencing the acceptance of FDAs among users. Recent research by Chong et al. (2021) confirmed that PEOU significantly affects users' attitudes and intentions to adopt FDAs in Malaysia. Similarly, Asif et al. (2020) emphasised that a user-friendly interface and intuitive navigation are essential to enhance consumer adoption, particularly in mobile commerce settings. In addition, the findings of a study carried out by Castillo and Bigne (2021) demonstrated that the influence of PEOU on PU might not be statistically significant. In the contemporary era, characterised by significant technological advancements, mobile applications and new technologies have become an integral part of customers' day-to-day routines, thereby reducing the perceived complexity of these technologies (Castillo & Bigne, 2021). Based on the research that was discussed earlier, one may conclude that there is a positive influence of customer PEOU of FDAs on the actual usage they make to continue using these services. Therefore, the following hypothesis is proposed:

H1: Perceived ease of use positively influences actual usage of FDAs.

2.6 Perceived Usefulness

The concept of perceived usefulness has been widely recognised as a critical determinant of technology adoption, particularly in understanding how users evaluate the potential of technology to enhance their performance (Tahar et al., 2020). For example, when asked to describe their online food ordering experience, most customers responded positively, mentioning factors such as quick delivery, a straightforward

payment process, excellent customer service, and so on. They were all in agreement that these positive experiences would encourage them to utilise meal delivery platforms in the future (Leung et al., 2023).

On the other hand, PEOU refers to the extent to which users can effortlessly control the technology. Hong et al. (2021) showed that PU was the most influential factor in increasing customers' actual usage. It is also confirmed that customers are more likely to adopt FDAs if they perceive them as applicable (Hong et al., 2021). According to Denny et al. (2021), the concept of usefulness in relation to technology is evaluated based on its ability to enhance individual productivity. When customers consider that new technology will improve their productivity, the previous study mentioned that PU arises (Hong et al., 2021).

For example, past research demonstrated that perceived usefulness positively influenced actual usage of FDAs. Similarly, Roh and Park (2019) revealed PU to be the strongest factor affecting the actual usage of FDAs. To be more specific, when customer interests are directed towards the application, individuals tend to view it as a technology that is both useful and easy to use. According to Song et al. (2021), this gives the impression that customers tend to assume the application is easy to navigate and will deliver the benefits promised in the messaging through the features and benefits detailed in marketing communications.

Denny et al. (2021) suggest that PU can be evaluated through five key indicators, such as enhanced productivity, personal benefit, improved effectiveness, increased transaction speed, and overall activity efficiency. Hong et al. (2021) demonstrated that PU was the most influential factor in increasing customers' actual usage. A positive relationship between perceived usefulness and actual usage from a practical perspective suggests that the food-delivery application should be designed to enhance convenience for all users. The perceived usefulness of food delivery services has a positive influence on their actual usage among customers (Arora et al., 2023). Users perceive food-delivery applications as applicable when they find them easy to use, when they offer a variety of food choices, and when they provide convenience (An et al., 2023).

The perceived usefulness of a food delivery application is significantly influenced by the quality of the application itself, particularly the accuracy and relevance of the information it provides. A positive relationship exists between trust in the application and users' perceptions of its usefulness and ease of use. Consequently,

perceived usefulness positively affects actual usage, which in turn increases the likelihood of continued usage. When consumers believe that an FDA offers valuable and beneficial features, they are more inclined to adopt and repeatedly use the application. Therefore, perceived usefulness is a critical determinant in shaping actual usage behaviour among FDA users. Supporting this, Hong et al. (2021) found that users are more likely to accept food delivery applications when they perceive them as applicable, thereby reinforcing the conclusions of earlier studies. Based on these findings, the following hypotheses are proposed:

H2: Perceived usefulness positively influences actual usage of FDAs

2.7 Visibility

Visibility refers to the extent to which users are exposed to advertisements for an FDA and observe others using it. In the online retail context, visibility significantly shapes actual usage through its influence on perceived functional and social value. Recent empirical research confirms that visibility confers epistemic value through enhanced information exposure: individuals who observe their peers using an innovation and are exposed to advertisements are more likely to form intentions to adopt it. Specifically, Talwar et al. (2020) and Kaur et al. (2021) demonstrate in FDA contexts that visibility (through advertising and visible peer usage) positively impacts both functional and social consumption values, which in turn boost usage intention; visibility also acts as a mediator between value perceptions and intention. Similarly, Wiastuti et al. (2022) found that visibility mediates the relationship between epistemic, social, and functional consumption values and FDA adoption intention among users in Indonesia. Moreover, Lin et al. (2024) demonstrate that promotional visibility not only influences continued intention but also enhances ongoing usage of FDAs, underscoring the practical role of visible advertising in adoption processes.

The degree to which an individual witnesses others embracing innovative technology is referred to as visibility (Hermenda et al., 2019; Moore & Benbasat, 1991). Prior studies have established that the extent to which consumers perceive and are eager to utilise smartphone-based services, such as mobile payment gateways and FDA platforms (Tandon et al., 2021), is highly dependent on the level of visibility. Nevertheless, as emphasised by Kaur et al. (2020), it is critical to conduct a

comprehensive analysis of variables that may influence consumer behaviour regarding the use of FDAs. Moreover, Talwar et al. (2020) found that earlier studies support this hypothesis concerning FDAs. Subsequent research has also suggested that the level of visibility impacts the connection between actual usage of FDAs.

Marketers employ diverse strategies to enhance product visibility and capture customer attention, thereby augmenting the probability of purchase. Iqbal and Ansar (2023) highlighted that visibility through digital marketing channels enhances consumer trust, which indirectly influences purchase decisions. The literature has provided additional evidence that employing diverse methods and approaches, such as advertising to enhance visibility, can have a substantial impact on multiple aspects of decision-making, including the promotion of trust and the inclination to make a purchase (Salhab et al., 2023). Moreover, this occurrence may be attributed to the concept that enhanced visibility can instil in customers the belief that utilising such services can improve their social standing, particularly among younger individuals who actively strive to curate their online persona within their social circles (Kopplin & Rosch, 2021).

This study aims to quantify visibility as an indicator for assessing various informational aspects. These aspects include promotional advertisements, the curiosity evoked by observing others using the FDA, and the perception of novelty associated with a technology-driven product that is being enjoyed by others. Indeed, the factor that exerted the most significant impact on customers' actual usage to purchase food through Food Delivery Applications (FDAs) was visibility. This implies a positive correlation between visibility and the actual utilization of FDAs. Therefore, the influence of advertisements and the curiosity aroused by observing others using FDAs can have a positive effect on customer inclination to place food orders through FDAs. Talwar et al. (2021) indeed confirmed the existence of a positive correlation between visibility and choice behaviour. Similarly, Kaur et al. (2022) emphasised that exposure to digital ads and observing FDA usage by friends or family can shape consumer perception, leading to increased adoption. This study examines the concept of visibility by investigating the effects of exposure to service provider commercials and observing others' use of FDAs. Therefore, the subsequent hypotheses have been formulated:

H3: Visibility positively influences actual usage of FDAs.

2.8 Affordance Value

The term "affordance" has been borrowed from the existing body of literature on social media, where it is commonly employed to refer to the benefits or advantages offered by various social media platforms (Kaur et al., 2020). In addition to the considerations, we have identified certain external factors that have the potential to enhance the utility of the FDA for customers. These factors have been categorised under the broad concept "affordance value" within the context of FDAs. In undertaking this endeavor, we aimed to highlight and emphasise the impact of affordance value on customer usage, particularly when FDAs provide specific external benefits.

This implies that it is imperative for FDAs to provide customers with detailed delivery timelines and to offer a broad variety of menu selections. Recent empirical research supports these observations. Effendi et al. (2025) reported that, in the Malaysian Foodpanda context, the quality of delivery, including timeliness and order accuracy, as well as pricing perception and food quality, significantly influence customer satisfaction, with perceived value serving as a mediating factor. This study also confirms that issues related to delayed deliveries and limited menu options continue to affect the user experience. Similarly, Wu et al. (2024) demonstrated that delivery service quality, encompassing system reliability, order traceability, food preservation, and overall service performance, has a direct and positive influence on customer satisfaction and the intention to reuse the service. These findings affirm that operational features such as delivery logistics and menu variety remain critical determinants of consumer perception and behaviour in FDAs. In relation to the concept of affordance value, recent literature further suggests that the design and functionality of FDA platforms continue to shape users' perceptions of service quality and product value.

Furthermore, they observed that the impact is more significant when there is a higher degree of information asymmetry. Wang et al. (2021) have discussed the influence of platform quality factors on user loyalty and actual usage. In this context, Choe et al. (2021) have identified a significant impact of the user interface on customers. Alalwan (2020) highlighted that users' satisfaction and actual usage of FDAs are significantly influenced by the enjoyable and comfortable experience provided by the application. This aligns with the idea that users derive affordance value not only from

practical functionalities but also from the emotional and experiential aspects of using FDAs, such as intuitive interfaces and personalised features.

Moreover, Leung et al. (2023) noted that a considerable number of customers were attracted to the discounts and coupons offered by food-ordering and payment platforms, which exemplifies an aspect of the affordance value linked with these platforms. Customers showed a preference for ordering their desired meals at competitive prices to lower their expenses. For example, they frequently utilised free delivery charge coupons, finding them appealing due to the increased delivery costs associated with ordering from restaurants located far away (Leung et al., 2023). According to a previous study (McCloskey, 2006; Gafni & Nissim, 2014; Bezovski, 2016), customers are more likely to adopt new technology that is easy to use, despite perceived higher costs, due to the projected advantages. Hence, providing a straightforward system to users is crucial for the effectiveness of this technology. Thus, the following hypotheses are developed:

H4: Affordance value positively influences actual usage of FDAs.

2.9 Trust in Application Platform

Trust refers to the perceptions and beliefs of customers regarding the safety and reliability of retailers' internet technology (Jun et al., 2022). The provision of limited information by the platforms of the FDAs poses challenges for customers when assessing the taste and consistency of the food (Ashfaqa et al., 2020; Kim et al., 2021). Furthermore, within the context of FDAs, customers are constrained by the limited information presented on the platforms. Consequently, they are unable to taste the food, thereby impeding their ability to make accurate assessments before making a purchase. This situation gives rise to a state of uncertainty regarding the available information (Dong et al., 2021). To enhance customer utilization of online platforms, a comprehensive and intuitive interface is imperative (Wang et al., 2021). For instance, Wang et al. (2021) provided evidence that customers are exclusively drawn to high-quality FDAs. It is essential to recognise that a platform of superior quality has the potential to enhance the practical utility for customers and establish their confidence in the platform.

Moreover, the food delivery industry is significantly influenced by the essential elements of safety and trust, which play a crucial role in shaping customer purchasing decisions. Prior studies have placed significant emphasis on the importance of trust in behaviours related to technology utilization (Hong et al., 2023). Nguyen et al. (2019) discovered a positive correlation between customer trust in a food delivery application and their intention to utilise the website. The occurrence of inconsistent service delivery can be attributed to a deficiency in trust regarding the safety of the platform, resulting in trust being deeply connected to the convenience of the service rather than its effectiveness (Hong et al., 2023). Establishing trust between brands and customers requires considerable effort from both operators and vendors. To foster this trust, online vendors should ensure the provision of accurate and transparent information related to food quality, hygiene practices, as well as storage and delivery mechanisms on every food delivery application platform (Zhuang et al., 2021).

Previous studies conducted by Cho et al. (2019), Hong et al. (2021), Jun et al. (2021), Muangmee et al. (2021), and Zhao & Bacao (2020) have shown that customers reveal a stronger desire to utilise FDAs when they keep an expectation in the service's opportunity to work accurately. Previous research on FDAs has highlighted the significance of customers' perceptions of the platform's reliability in influencing their preference to use the platforms (Cho et al., 2019; Hong et al., 2021; Jun et al., 2021; Muangmee et al., 2021; Zhao & Bacao, 2020). In the case of online transactions, a positive association exists between trust and customers' actual usage, as determined by Javed and Wu (2020). This is the conclusion reached by both researchers. As a result, there is a stronger desire among customers to engage in online transactions or make purchases due to the convenience of these transactions.

On the other hand, as pointed out by Leung et al. (2023), despite the widespread belief among customers in the safety of online food delivery platforms, a significant number express security concerns. These concerns arise from the need to share personal details, such as addresses and credit card information, when ordering food through a trusted application platform, leading to worries about potential privacy breaches and theft by unauthorised parties (Leung et al., 2023). Additionally, the influence of the user interface on customers' perceptions of privacy, satisfaction, and loyalty has been widely recognised in the literature (Kim et al., 2021). The importance of establishing trust among customers and implementing systems for customer technology acceptance

should be highlighted, despite the numerous benefits and convenience offered by emerging technological innovations (Chao, 2019; Malaquias & Hwang, 2016). Although information technology has advanced rapidly, online food delivery platforms may not always be able to fully meet the diverse needs of their customers, despite offering a wide range of services. Therefore, the following hypotheses have been formulated:

H5: Trust in application platform positively influences actual usage of FDAs.

2.10 Actual Usage

The customer buying decision process refers to the cognitive sequence that consumers follow when making choices about purchasing products or services at a price within the marketplace. This process encompasses the stages preceding, during, and following the actual purchase decision, as described by Lumen (2019). Various factors influence consumer behaviour in mobile service environments. These factors include mobile network information, application features, perceptions of service quality, and the intention to use mobile platforms. Recent studies have reinforced these observations. Barry et al. (2024) found that system quality, service quality, and perceived enjoyment significantly influence consumers' intention to adopt mobile commerce applications in Malaysia, although factors such as information quality, perceived ease of use, and perceived usefulness had less impact. Similarly, Zariman et al. (2022) demonstrated that aspects of electronic service quality, such as responsiveness, personalization, information accuracy, and system usability, positively affect customer satisfaction and loyalty intentions, with trust acting as a mediating factor. These findings affirm that both technical performance and user-oriented features play a crucial role in shaping customer decisions in mobile service contexts.

On the other hand, some customers only use food delivery applications (FDAs) a few times a month. For instance, a customer may use an FDA to order lunch once or twice a month, spending less than RM60 each time. In the context of Hong Kong, the government has recently relaxed social distancing restrictions, and many respondents have stated that they now prefer dining out at restaurants instead of ordering food delivery (Leung et al., 2023). Similarly, in Malaysia, changing consumer habits and government policies may influence the use of FDAs. According to a study by Javed and

Wu (2020), a positive correlation exists between customer satisfaction with FDAs and the level of trust customers have in these platforms. Shao et al. (2019) also found that customer retention is strongly linked to trust in a particular product or service. Furthermore, research by Wang et al. (2021) indicates that building customer trust and enhancing satisfaction are crucial factors in promoting the continued use of FDAs.

2.11 Generations

The rise of online food delivery has been remarkable, especially among Generation Z, which includes individuals born between the mid-1990s and early 2010s (Yulius et al., 2022). According to Pramezwary et al. (2023), Gen Z is the first generation to grow up fully immersed in digital technologies, making them early adopters of mobile applications such as FDAs. This generation is widely acknowledged for its strong affinity for technology and willingness to embrace new and innovative solutions that streamline daily routines, a trait often attributed to their upbringing in the digital age (Vancia et al., 2023). Several researchers and media sources describe younger generations as those born between 1981 and 1996, while others extend the range to those born between 1982 and 2002. Similarly, the Association of Southeast Asian Nations (ASEAN) defines youth as individuals aged 15 to 35, providing a regional reference point for understanding generational boundaries (ASEAN, 2017). Accordingly, this study groups individuals aged 18 to 35 as the younger generation, aligning with both regional classifications and generational theory. According to prior research, the traits of individuals born in a particular period are shaped by the macroenvironment in which they were raised, resulting in shared values, behaviours, and interests. This implies that each generation possesses distinct characteristics that differentiate younger generations from older ones (Zhuang et al., 2021).

In Malaysia, 84.2% of the population uses the internet, 88.3% of them use a shopping application each month, and 6.86 million people used FDAs to order takeaway food in 2020 (Tan, Lim, & Yeo, 2024). Understanding actual usage involves examining the various actions people take to acquire, use, and discard consumer goods and services. This includes the choices they make based on their wants and needs (Wang et al., 2021). According to recent studies (Li et al., 2022), the majority of FDA customers are members of the younger generation. With the convergence of cutting-edge

technology and the unprecedented impact of the pandemic, there has been a noticeable transformation in individuals' food choices and eating habits (Sari et al., 2022). In the early days of the pandemic, when protocols were not yet implemented, many consumers avoided shopping in physical stores or dining at restaurants to prevent exposure to the virus (Toiba et al., 2022). As a result, they turned to online food and grocery delivery services to meet their daily needs (Chenarides et al., 2021). FDAs have become an essential alternative during the COVID-19 pandemic, and experts predict that this trend will continue even after the pandemic is over (Xiong et al., 2021).

In contrast, when examining food delivery application services, customers within the same generation tend to exhibit similar behaviours, in comparison to those of different generations (Wang et al., 2018). Research has shown that younger generations incorporate and utilise mobile devices in various aspects of their lives, while older adults generally use them for limited purposes only (Lian and Yen, 2014). As a result, older adults are less likely to adopt food delivery applications frequently, relying more on traditional ordering methods or in-person restaurant visits, whereas younger generations, particularly those aged 18–35, are more active users of FDAs due to their familiarity with smartphones and comfort with digital transactions. To illustrate, younger generations exhibit a greater acceptance of innovative technological applications compared to their elder counterparts (Koutropoulos, 2011). Moreover, due to their comparatively favorable perception of information and communication technologies, younger generations are often referred to as the "high-tech generation" (Cham et al., 2018). Younger generations, raised in an era of consistent technological progress, have become a focus among businesses seeking to retain and attract them to maintain a competitive edge (Suhartanto et al., 2019). It may not be surprising to learn that younger generations hold considerably different views and opinions about delivery services facilitated by food delivery applications, in contrast to older generations. This difference can be attributed to the independent characteristics of younger generations. Nevertheless, the examination of potential generational changes in perspectives concerning food delivery applications remains limited (Zhuang et al., 2021).

According to previous studies, members of younger generations, sometimes referred to as post-millennials, are well-versed in technology and concerned about their health (Kulshreshtha & Sharma, 2022). Cassandra (2019) and Veiga-Neto et al. (2018) found that social influencers influence individuals of this generation and exhibit

environmentally conscious behaviour. For this research, individuals are categorised into distinct generational cohorts. Each cohort is shaped by specific social and political contexts encountered during its formative years, which significantly influence the development of individuals' unique personalities, values, and belief systems. According to Queiri et al. (2015), each generation demonstrates a distinct set of personal characteristics and expectations. The application of generational cohort theory has been widely observed across various research domains, including social sciences, psychology, politics, education, human resource management, and marketing (Zwanka & Buff, 2020). This theory posits that each generational group possesses unique traits and behavioural patterns that distinguish them from other cohorts (Brosdahl & Carpenter, 2011).

In the e-commerce area, the primary customer base consists of younger generations (Li et al., 2022). Moreover, Croes and Bartels (2021) observed that younger individuals tend to be positively influenced by online advertisements, especially when they are promoted by people they know and trust. Most young customers have at least one social media account, and their presence on social media continues to expand (Cheng et al., 2023; Cheung et al., 2023; Lam et al., 2023). Most food delivery platforms capitalise on this trend by advertising on social media to encourage younger generations to use their platforms to establish a profitable business. Researchers suggest that while younger generations are more inclined to adopt FDAs, the older generation typically favors traditional methods due to their limited familiarity with technology and reluctance to use electronic payment systems (Collier et al., 2017; Oliveira et al., 2016; Park & Shin, 2017). Therefore, it is crucial to investigate the current level of acceptance and trust among customers of different generations towards FDAs as a means of customer service interaction within the food delivery industry.

Since younger generations have been raised in a technologically advanced online environment, their perception of privacy and security may differ from that of older generations. Previous studies have found that customers are more likely to maintain consistent usage of services or products and experience a higher level of psychological stability when they have confidence in their ability to execute online transactions (Zhuang et al., 2021). Natarajan et al. (2018) observed a notable difference in the usage of food delivery applications (FDAs) between younger and older generations. The younger generations, having grown up in a technologically advanced

and online environment, may exhibit a different level of trust in application platform compared to the older generations (Zhuang et al., 2021).

Technology is used more frequently by younger generations, who are also more technologically literate and knowledgeable. Previous research (Wang et al., 2018; Oz et al., 2018) has identified specific characteristics associated with the younger generation group. Wang et al. (2018) conducted research that led them to discover that older generations and younger generations exhibit different types of behaviour, and that there are age-related contrasts in the factors that influence the development of shared-mobility services. Wahyuningsih et al. (2022) found variations in both safety value and information value among individuals belonging to younger and older generations. Older generations demonstrate the most significant level of worry over safety, whereas younger generations demonstrate a higher level of concern regarding information. Based on the findings of these earlier studies, the links between the constructs have been examined comprehensively. According to the theory of market segmentation (Wahyuningsih, 2011; Zhou et al., 2020), it is proposed that each type of customer requires a specific approach.

According to Rudolph and Zacher's research in 2020, customers who belong to distinct generational cohorts have a tendency to show different beliefs, attitudes, and behaviours. Because users of older generations are more likely to place a high value on the safety of food delivery applications, the operators of FDAs should appropriately spend efforts on qualities that effectively develop trust. These characteristics include user privacy, safety, and the ease or convenience of accessing merchant information. According to Zhuang et al. (2021), younger generations are more concerned with value for money than older generations are. As stated by Zhuang et al. (2021), it has been demonstrated that, from the perspective of age difference, older generations tend to take a lower risk when it comes to the purchase process. Although younger generations were historically viewed as the primary high tech demographic as stated by Yeo (2024), find that the digital divide has significantly narrowed in Malaysia, with older generation now showing comparable adoption rates for essential services like FDAs.

Trust in application platform plays a significant role in the adoption and usage of food delivery applications among both older and younger generations. The level of trust influences consumer attitudes and intentions to use these applications (Muhammad Daffa & Praswati, 2023). Perceived trust in online platforms is positively associated

with the frequency of use of food delivery applications among young adults (Buettner et al., 2023). Trust is found to mediate the effect of perceived usefulness on repurchase intention in the millennial generation (Madiawati & Wijaksana, 2023). Additionally, trust is identified as a variable that influences online purchase behaviour and the decision to use food delivery applications (Arora et al., 2023b). Understanding consumer trust in online platforms is crucial for the successful adoption and usage of food delivery applications, especially during and after the pandemic (Rodrigues et al., n.d.).

This study offers valuable insights into these research questions and how these factors vary across generations, with potential implications for food industry companies seeking to enhance their online delivery services to cater to the diverse needs and preferences of various customer groups. The research questions and objectives assume that generations represent a demographic feature that influences customer behaviours, especially regarding food consumption habits. Hence, it is crucial for restaurants to develop marketing strategies that take this variable into account (Hwang & Kim, 2019). The findings of this study may be helpful for food industry companies seeking to improve their online delivery services and cater to the needs and preferences of various customer groups (Tandon et al., 2021). As a result, the subsequent hypotheses are formulated:

H6: There is a moderating effect of generations between perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform.

H6a: The effect of perceived ease of use on actual usage of FDAs is stronger for the younger generation than the older generation.

H6b: The effect of perceived usefulness on actual usage of FDAs is stronger for the younger generation than the older generation.

H6c: The effect of visibility on actual usage of FDAs is stronger for the older generation than the younger generation.

H6d: The effect of affordance value on actual usage of FDAs is stronger for the younger generation than the older generation.

H6e: The effect of trust in the application platform on actual usage of FDAs is stronger for the older generation than the younger generation.

2.12 The Conceptual Model

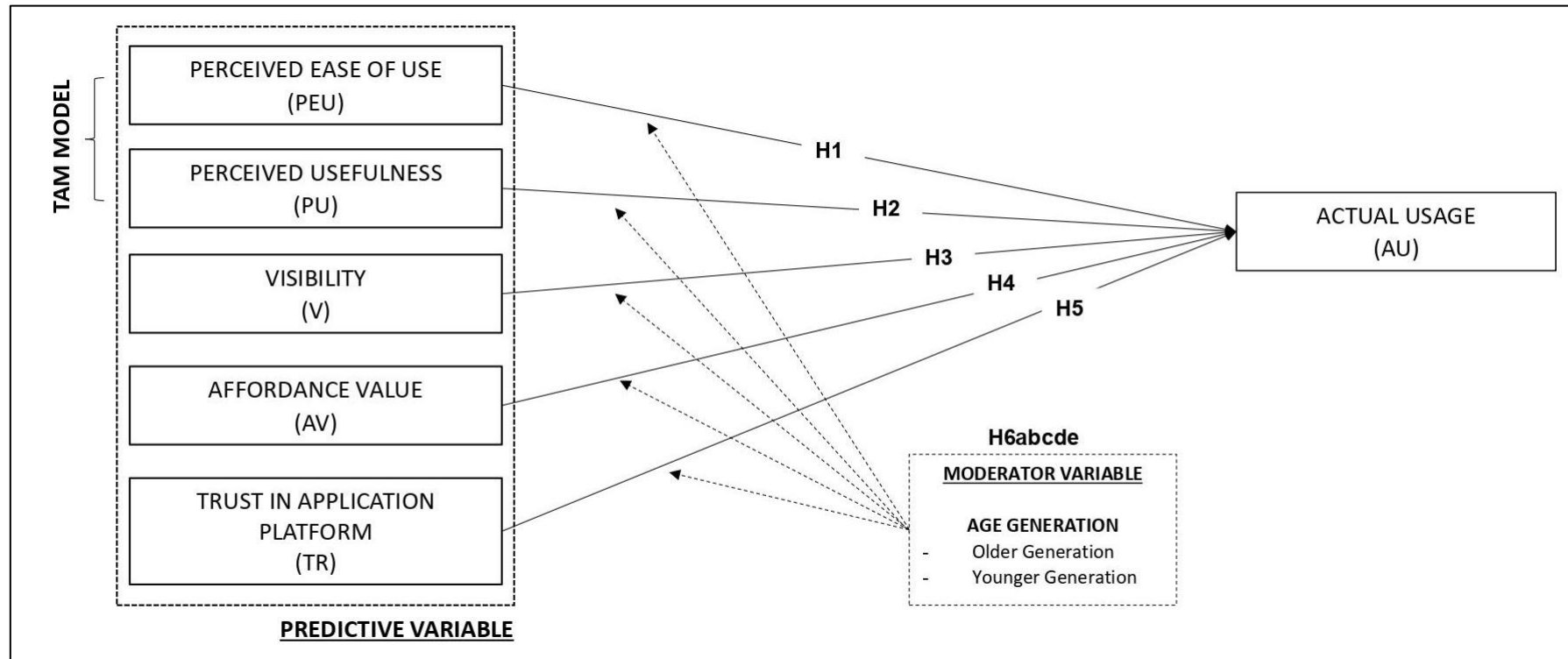


Figure 2.2 The Conceptual Model
Sources: (Hong et al., 2021; Kaur et al., 2020)

2.13 Hypothesis Development

H1: Perceived ease of use positively influences actual usage of FDAs.

H2: Perceived usefulness positively influences actual usage of FDAs.

H3: Visibility positively influences actual usage of FDAs.

H4: Affordance value positively influences actual usage of FDAs.

H5: Trust in application platform positively influences actual usage of FDAs.

H6: There is a moderating effect of generations between perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform.

H6a: The effect of perceived ease of use on actual usage of FDAs is stronger for the younger generation than the older generation.

H6b: The effect of perceived usefulness on actual usage of FDAs is stronger for the younger generation than the older generation.

H6c: The effect of visibility on actual usage of FDAs is stronger for the older generation than the younger generation.

H6d: The effect of affordance value on actual usage of FDAs is stronger for the younger generation than the older generation.

H6e: The effect of trust in the application platform on actual usage of FDAs is stronger for the older generation than the younger generation.

2.14 Summary

To summarise, this section of the literature study has explained the relationship between independent and dependent variables, specifically perceived ease of use, perceived usefulness, visibility, affordance value, trust in application platform, and customers' actual usage. Most previous studies have shown that these independent

criteria have a considerable impact on real customer usage of food delivery application services.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a detailed description of the research methods employed in this study. A correlational analysis was conducted quantitatively, utilising primary data collection, to gain insights into the Malaysian visibility and affordance value of FDAs from customer perspectives across different generations. This section explains the sampling method, population, sample size, and pilot study. This chapter also describes the research instrument, detailed research plan, and data analysis method.

To address these research gaps comprehensively, this study employed a quantitative approach, utilising a survey methodology to gather data specifically from the Klang Valley, with a particular emphasis on the Kuala Lumpur and Selangor areas. The survey aimed to capture insights from both older and younger generations of customers in these regions. A structured questionnaire was distributed through online channels to ensure wide coverage of participants from different areas in Malaysia. The questionnaire is based on PEOU, PU, visibility, affordance value, trust in application platform, actual usage, and generations. The collected data were analysed using correlational analysis to investigate the relationships between the variables. Additionally, we utilised PLS-SEM to measure and validate the proposed research model.

3.2 The Research Philosophy

This research aims to investigate the impact of visibility, affordance value, and trust within the application platform on the usage of FDAs, focusing on diverse generational cohorts in the Klang Valley. As revealed earlier in Chapter Two, the study is constructed upon the Technology Acceptance Model (TAM) as well as adapting pertinent elements from past study in customer's technology adoption. This study extends the TAM theory, with PEOU and PU as key exogenous constructs. The research examines the potential impact of visibility, affordance value, and trust on the actual usage of FDAs, as illustrated in the conceptual study framework on Figure 2.2.

Furthermore, as discussed in Chapter Two, FDAs are a relatively new concept of service available in Malaysia. Therefore, this study can provide results from the perspective of Malaysian foodservice industry. This study adopts a positivist philosophical approach, emphasising the real and universal nature of reality and seeking explanatory and predictive correlations (Saunders et al., 2019). This approach aligns with understanding and expanding existing theories into testable hypotheses, providing a foundation for future studies. The positivist philosophy facilitates an examination of the social world like the natural world, enabling the investigation of causes and effects within relationships (Sekaran & Bougie, 2016). Past study outcomes are leveraged to comprehend existing relationships and identify potential ones for assessment (Saunders et al., 2019). Overall, the positivist approach proves suitable for achieving the primary objectives of this study.

3.3 Research Design

This study adopted a basic research approach, aiming to expand theoretical understanding and contribute to the existing body of knowledge on consumer behaviour in the context of food delivery applications. Instead of focusing on immediate practical applications or problem-solving, the research sought to explore underlying patterns and relationships among variables to inform future studies in the field. Although various research designs could have been considered, a correlational research design was selected to examine the potential relationships between independent and dependent variables, regardless of the strength or significance of the correlation. The data collected were primarily quantitative, represented as numerical values, enabling objective analysis.

As a quantitative study, this research utilised a structured questionnaire to collect primary data from participants. A quantitative approach was considered suitable due to its efficiency in gathering a substantial amount of data from a broad sample in a cost-effective and timely manner. The use of a questionnaire supported this objective by providing standardised responses that could be systematically analysed. Quantitative methods involve the collection and analysis of numerical data, typically employed to identify patterns, explore correlations, and make generalisations about a larger population (Bhandari, 2021). Given the academic nature of the research, this study

employed both correlational analysis and quantitative methodology to examine the theoretical relationships among the selected variables effectively.

3.4 Population and Sampling

3.4.1 Study Population and Sample Size

Sampling is necessary to ensure accurate data collection and to define this study population precisely. Sampling is also a vital statistical process used in research to select a subset, known as a sample, from a larger population of interest to draw observations and make statistical conclusions (Bhattacharjee, 2012). In the context of customer experiences with FDAs, specific research aims to explain, describe, and predict certain characteristics of the population. To conduct such research, it is essential to determine this study population and focus on the unit of analysis, which refers to the element from which data was collected (Matthews & Ross, 2010; Nardi, 2003). The target study population will encompass the Klang Valley, which includes customers aged 18 years old and above from Kuala Lumpur and Selangor, with no restrictions on gender or other demographic variables. According to the 10-times rule proposed by Hair et al. (2021), the minimum required sample size should be ten times the maximum number of structural paths directed at any dependent construct in the model. In this study, the most complex construct is influenced by four predictors; therefore, the minimum recommended sample size is $10 \times 4 = 40$. Based on those numbers, it was impossible to connect with all users of the target population and as a result, researcher had identified which parts of the population were accessible depending on the time and resources of the researcher (Yount, 2006). However, to enhance the robustness and generalisability of the results, a larger sample size was collected. This study will require a minimum sample size of 180, given the inclusion of 18 survey items, as supported by previous scholars (Hair et al., 2017).

The unit of analysis refers to the specific thing that is the primary subject of examination and study in a research project, serving as the central focus of investigation. Our focus is primarily on individuals who have prior experience utilising FDAs within the Klang Valley region. For this research, this study population consists of individuals aged 18 years and above who have been using the FDAs in the Klang Valley,

encompassing the areas of Kuala Lumpur and Selangor in Malaysia. All the individuals who were selected to participate in this study fulfilled the following criteria for inclusion:

- I. They are at least 18 years old.
- II. For the last six months, they have utilised the applications for food delivery.
- III. They expressed a willingness to provide feedback on their experience with the meal delivery applications used.

3.4.2 The Sampling Procedure

This study employed a purposive sampling technique. Although purposive sampling is a non-probability method, meaning that not all individuals in the population have an equal chance of being selected, it is particularly effective for targeting specific groups that can provide relevant information aligned with the research objectives (Bairagi & Munot, 2019; Sekaran & Bougie, 2016). No definitive population data or an accessible sampling frame were identified for the target group, making purposive sampling the most appropriate and practical approach for this study (Etikan & Babatope, 2019; Levy & Lemeshow, 1999; Smith et al., 2019). Precise population figures for FDA users aged 18 and above in the Klang Valley were not available. Moreover, there was an absence of accurate and reliable demographic data specific to FDA users within this age group in the region. Consequently, the lack of a clear sampling frame necessitated the adoption of purposive sampling as the most suitable technique for fulfilling the research objectives.

3.5 Survey Instrument Development

This study implemented and adapted several existing measurement items to align with the specified construct domains. To ensure content validity, the survey instrument was further evaluated by a panel of experts from Faculty of Hotel and Tourism Management, Universiti Teknologi MARA. A pilot study was subsequently conducted to assess the clarity and comprehensibility of the items among the target

audience, reduce potential large-scale measurement errors, and enhance the reliability and generalisability of the research findings (Ruel et al., 2016).

3.5.1 Specification of the Study Construct Domains

Past research has provided a sound theoretical and conceptual foundation for specifying this study's construct domains. Relevant literature was extensively reviewed to appropriate the conceptualisation of this study. The domains were applied to item generation for construct measurement by adopting and adapting past studies. The construct domains and literary sources are outlined in Table 3.1, with the detailed survey instrument and demographic background.

Table 3.1
Construct Domains and Sources

Variable	Items	Referenced Sources
Perceived ease of use	3	Antara et al. (2022)
Perceived usefulness	3	Antara et al. (2022)
Visibility	3	Johnson et al. (2018), Kaur et al. (2021), Talwar et al. (2020a), and Burlea Schiopoiu et al. (2022)
Affordance value	3	Kaur et al. (2020)
Trust in application platform	3	Zhu et al. (2017), Shao et al. (2018), and Cho et al. (2019)
Actual usage	3	Kulshreshtha & Sharma (2022) and Antara et al. (2022)
Total Items	18	

3.5.2 The Construct Items

3.5.2.1 *Perceived Ease of Use*

In this study, earlier validated instruments were utilised and modified to measure the constructs. These instruments drew inspiration from prior research on topics such as FDAs, ease of use, perceived usefulness, visibility, affordance value, trust in application platform, actual usage, and generations. The aim was to identify the most

suitable instruments that align with the research objectives and achieve the desired outcomes.

PEOU items were adopted and adapted from Shim et al. (2021), Thong et al. (2006), and Leon (2018). The articles offered good references for item measurement, as the research measured the factors influencing the actual usage of FDAs, and fit well with this study context. Therefore, the sources of items adopted and adapted for this study demonstrated good fit measures. A list of the PEOU items is displayed in Table 3.2.

Table 3.2
Measurement Items of Perceived Ease of Use

Perceived Ease of Use			
Label	Items	Original Items	Sources
PEOU1	Learning to use food delivery applications would be easy for me.	Learning to operate e-hailing food delivery applications would be easy for me.	Shim et al. (2021)
PEOU2	I would find it easy to navigate the menu of food delivery applications.	I would find the e-hailing food delivery application's menu is very easy to navigate.	Thong et al. (2006) and Leon (2018)
PEOU3	In general, food delivery applications are easy to use.	In general, using e-hailing food delivery applications is helpful to me.	Thong et al. (2006) and Leon (2018)

3.5.2.2 Perceived Usefulness

Perceived usefulness was measured using items adapted from Antara et al. (2022). The sources align well with this study context as both sources utilised measures that specifically encompassed factors influencing the actual usage of FDAs in the research frameworks. A list of PU is presented in Table 3.3.

Table 3.3
Measurement Items of Perceived Usefulness

Perceived Usefulness			
Label	Items	Original Items	Sources
PU1	Using food delivery applications enables me to find nearby food more quickly than buying at a restaurant.	Using e-hailing food delivery applications enables me to find nearby available food more quickly than buying at a restaurant.	Adapted by Antara et al. (2022)
PU2	Using food delivery applications enables me to get my food faster than buying it at a restaurant.	Using e-hailing food delivery applications enables me to get my food faster than buying it at a restaurant.	Adapted by Antara et al. (2022)
PU3	Using food delivery applications saves my time, which in turn improves my productivity in completing other daily tasks.	Using e-hailing food delivery apps saves my time, which in turn improves my productivity in completing other daily tasks.	Adapted by Antara et al. (2022)

3.5.2.3 Visibility

Visibility was measured with items adapted from Johnson et al. (2018), Kaur et al. (2021), Talwar et al. (2020a), and Burlea Schiopoiu et al. (2022). The sources align well with this study context as both sources utilised measures that specifically encompassed factors influencing the actual usage of FDAs in the research frameworks. A list of visibility is presented in Table 3.4.

Table 3.4
Measurement Items of Visibility

Visibility			
Label	Items	Original Items	Sources
V1	All my friends are using food delivery applications.	All my friends are using FDAs.	Johnson et al. (2018), Kaur et al. (2021), and Talwar et al. (2020a)
V2	I have seen others use food delivery applications frequently.	I have had plenty of opportunities to observe FDAs being used.	Johnson et al. (2018), Kaur et al. (2021), and Talwar et al. (2020a)
V3	I saw various promotional materials for food delivery applications, which influenced my decision to use them.	Have you seen many promotional materials related to FDAs and decided to use them?	Burlea Schiopoiu et al. (2022)

3.5.2.4 Affordance Value

Affordance value was measured with items adapted from Kaur et al. (2020). The sources fit well with this study context as both sources utilised measures that specifically encompassed factors influencing the actual usage of FDAs in the research frameworks. A list of affordance values is presented in Table 3.5.

Table 3.5
Measurement Items of Affordance Value

Affordance Value			
Label	Adopted and Adapted Items	Original Items	Sources
AV1	I would use food delivery applications more often if they reduced the delivery charges.	I would use FDAs more often if they reduced the delivery charges.	Kaur et al. (2020)
AV2	I would use food delivery applications more often if better promotional incentives were offered.	I would use FDAs more often if better promotional incentives were offered.	Kaur et al. (2020)
AV3	I would use food delivery applications more often if they reduced the delivery time.	I would use FDAs more often if they reduced the delivery time.	Kaur et al. (2020)

3.5.2.5 Trust in Application Platform

Trust in application platform was measured using items adapted from Zhu et al. (2017), Shao et al. (2018), Cho et al. (2019), and Dsouza & Sharma (2021). The sources align well with this study context as both sources utilised measures that specifically encompassed factors influencing the actual usage of FDAs in the research frameworks. A list of trust in application platform is presented in Table 3.6.

Table 3.6
Measurement Items of Trust in Application Platform

Trust in Application Platform			
Label	Items	Original Items	Sources
TR1	I believe food delivery applications keep customers' interests in mind.	I believe the FDAs keep customers' interests in mind.	Dsouza & Sharma (2021)
TR2	The information provided by the food delivery applications is reliable.	The information provided by the FDAs is reliable.	Dsouza & Sharma (2021)
TR3	I prefer food delivery applications because they provide a safer option compared to dining at a restaurant, with reduced personal contact and secure food packaging.	Do you choose FDAs because you think it is safer than going to the supermarket/ restaurant (reduced personal contact, food packaging is safe, the regulations in force specific to the COVID-19 pandemic are observed, etc.)?	Dsouza & Sharma (2021)

3.5.2.6 Actual Usage

Actual usage was measured with items adapted from Kulshreshtha and Sharma (2022) and Antara et al. (2022). The sources fit well with this study context as both sources utilised measures that specifically encompassed factors influencing FDAs on actual usage in the research frameworks. A list of actual usage is presented in Table 3.7

Table 3.7
Measurement Items of Actual Usage

Actual Usage			
Label	Items	Original Items	Sources
AU1	I bought the food of my choice from food delivery applications.	I intend to buy the food of my choice from food delivery applications.	Kulshreshtha & Sharma (2022)
AU2	I bought from food delivery applications because they follow hygiene and safety protocols.	I intend to buy from food delivery applications because they follow hygiene and safety protocols.	Kulshreshtha & Sharma (2022)
AU3	I used food delivery applications frequently.	I am frequently using e-hailing food delivery applications.	Kulshreshtha & Sharma (2022)

3.6 Survey Instrument Technicality

These study variables were measured using a five-point Likert scale, with anchor values ranging from 1 to 5 and corresponding indicators (refer to Table 8). The Likert scale is considered more reliable and capable of producing meaningful data compared to other scaling methods for assessing individual attitudes and knowledge (Sekaran & Bougie, 2016). This scale allowed respondents to select one of five options to express their level of agreement or perception. However, as noted by Briggs, Coleman, and Morrison (2012), if a scale includes too few or too many response options, it may hinder respondents' ability to convey their views accurately.

Table 3.8
Likert Scale Measurement of the Study

Likert Number	Indicator
1	Strongly disagree
2	Disagree
3	Neither agree nor disagree
4	Agree
5	Strongly agree

3.7 Chronology of Data Collection

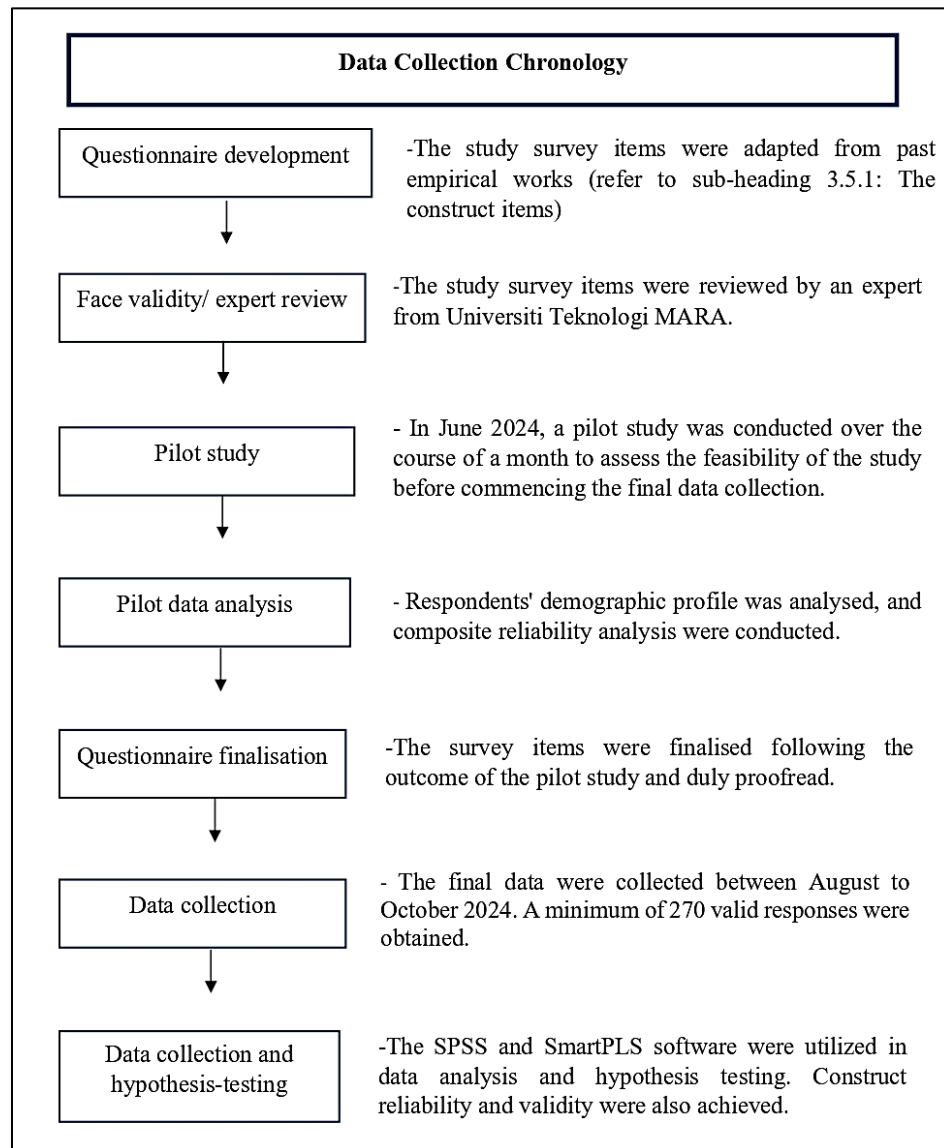


Figure 3.1 Chronology of Data Collection

3.8 Pilot Study

A pilot test, as defined by Zikmund et al. (2003), is an experimental procedure in which a specific number of participants participate to detect deficiencies in the questionnaire's structure or instructions. Zikmund et al. (2003), Churchill and Surprenant (1982), and Reynolds and Diamantopoulos (1998) all determined that empirical research, in-depth interviews, and expert panels yielded valuable outcomes in experimental studies. A pilot study, as defined by Polit et al. (2001), serves as a preparatory experiment for a comprehensive investigation. A pilot study serves as an

early assessment of a research instrument before it is extensively applied. The literature states that a pilot study is deemed insufficient without the presence of both a pre-test and instrumented pilot testing (De Vaus, 2002).

It is advisable to have a minimum sample size of 30 for a pilot study (Perneger et al., 2015) to ensure sufficient power for detecting abnormalities. For this phase of preliminary testing, thirty questionnaires were distributed. The primary aim of the pilot study was to assess and improve the validity and reliability of the survey. The researcher distributed the questionnaire to postgraduate students enrolled in the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA. Participants were guided to identify any questions they found unclear or challenging during the survey. A ten-minute timeframe was allotted for all participants to complete the survey. This duration was chosen to simulate the actual data collection environment and assess the survey's feasibility in practice. The feedback obtained was reviewed in detail to identify problematic items. Descriptive analysis and internal consistency measures, including Cronbach's alpha, were conducted to evaluate the reliability of the instrument. Based on the results, necessary adjustments were made to improve the clarity, flow, and consistency of the questionnaire. These revisions helped in ensuring that the final instrument was methodologically robust and suitable for full-scale data collection in the main study.

Table 3.9
Demographic Profile of Pilot Study

Demographic		Frequency	Percent
Gender	Female	27	81.8
	Male	6	18.2
Age	18 – 25	16	48.5
	26 – 30	10	30.3
	31 – 35	3	9.1
	36 – 40	1	3.0
	41 – 45	1	3.0
	46 – 50	0	0
	50 – 60	2	6.1
	61 and above	0	0
Academic Level	No formal education	0	0
	Primary school	0	0
	Secondary school	6	18.2
	Tertiary education	24	72.7
	Others	3	9.1
Occupation	Employed Citizen - Government Sector	0	0
	Employed Citizen - Private Sector		

	Self-employed Citizen	20	60.6
	Retired	5	15.2
	Unemployed	0	0
	Student	2	6.1
		6	18.2
Monthly Income	Less than RM1,500	3	9.1
	RM1,501 – RM2,500	11	33.3
	RM2,501 – RM5,000	11	33.3
	RM5,001 – RM7,500	2	6.1
	RM7,501 – RM10,000	0	0
	More than RM10,000	0	0
	No salary	6	18.2
Marital Status	Single	25	75.8
	Married	8	24.2
	Divorced or separated	0	0
Usage Frequency	Once a month or less	8	24.2
	2-3 times a month	15	45.5
	1-2 times a week	7	21.2
	3-5 times a week	3	9.1
	More than 5 times a week	0	0
	Total	33	100

Composite reliability (CR) analysis was performed to assess the internal consistency of the measurements. A minimum acceptable CR value of 0.70, as recommended by Awang et al. (2018) and Hair et al. (2017), was applied. All variables recorded a CR value of 0.70 or higher. Therefore, it can be concluded that all constructs exhibited strong internal consistency in their measurements. The composite reliability assessment results are presented in Table 3.10.

Table 3.10
Pilot Study Results of Composite Reliability

Construct	CR
Perceived Ease of Use (PEOU)	0.751
Perceived Usefulness (PU)	0.826
Visibility (V)	0.713
Affordance Value (AV)	0.869
Trust in Application Platform (TR)	0.873

Note: CR = Composite reliability

3.9 Data Collection Procedures

The collection of primary data was undertaken to facilitate this investigation. Primary data consisted of information initially acquired by the researcher through firsthand experience and effort to investigate the problem the researcher was attempting to solve. A wide range of methodologies was employed to collect the necessary data, including, but not limited to, surveys, empirical investigations, practical assessments, mail-order questionnaires, enumerator-completed and returned questionnaires, personal interviews, telephone interviews, and others (Surbhi, 2017). In this study, the researchers distributed a structured survey questionnaire via an online survey using Google Forms to individuals with experience using FDAs. To reach as many respondents as possible from a group of people with previous experience using meal delivery applications in the Klang Valley, the link to the Google Form was shared on social media, including Facebook, Telegram, and WhatsApp. To ensure that the selected participants were familiar with FDA services and regularly used them, screening questions were administered.

Additionally, to carry out this study, the researchers utilised a method commonly referred to as "purposive sampling." Although purposive sampling is not a technique that falls within the category of probability sampling (Bairagi & Munot, 2019), it was still used to gather the data required for analysing a specific segment of the population (Sekaran & Bougie, 2016). Since neither a fixed population size nor an inaccessible sample frame was identified as a barrier to achieve the research objectives, purposive sampling was deemed the most appropriate method for this type of study (Etikan & Babatope, 2019; Levy & Lemeshow, 1999; Smith et al., 2019). Due to the inaccessibility of the sampling frame and the precise number of Malaysian customers who had used FDAs, it was determined that purposive sampling was the most suitable sampling method for this study.

The self-administration method was used to eliminate bias. According to Rada (2019), the self-administered technique allows participants to complete the questionnaire without the assistance of a third party. Since participants completed the questionnaire independently, they were not influenced by others. According to Lefever, Dal, and Matthasdóttir (2007), many researchers have begun to use online data gathering methods because they are straightforward, quicker, and less expensive than

alternative options. Participants were free to choose the time and venue for completing the survey. This also allowed the data to be evaluated without the need to transfer it from paper to software, making online data collection more advantageous. The use of questionnaires in large-scale survey research facilitated the development of statistics. The questionnaire was distributed online as an internet-based survey that could be completed on a smartphone using the Google Forms platform. The data collected for this study were retained throughout the duration of the master's degree programme and were only used for this study and scholarly publications.

3.10 Data Analysis Procedures

In this section, the statistical procedures utilised in this investigation were divided and examined in further detail. A variety of statistical approaches, including descriptive statistics and inferential analyses, were employed to explore the relationships among this study construct and provide answers to the research questions. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to validate the hypotheses, evaluate the models, and examine the correlations between variables. Additionally, multivariate analysis was conducted to identify differences in technology usage across generations.

Cronbach's alpha was applied in the initial phase of the research, which involved a pilot study, to assess the reliability of the data and the validity of the measurements. Subsequently, descriptive statistics and sample frequency analyses were performed using SPSS 27.0 to determine the demographic characteristics of the participants. During the investigation, Harman's single-factor test was employed to assess instrument bias and common method bias (CMB). Finally, structural equation modeling was conducted to analyse the proposed model in two stages.

Table 3.11
Data Analysis Procedures

Test	Purpose	Name of Analysis/ Analysis Test	Criteria/ Rule of Thumb	References
Data cleaning	To detect any errors in data entry and screen for wrong input and missing data.	Descriptive statistic > Frequency analysis > Min and max.	All values must be within the Likert scale range.	Ahmad@Mohamad (2016)
Missing data	To decide a missing value and omit by evaluating the missing data pattern. It is only applicable if the missing value is minimal and randomly occurring.	Missing Complete at Random (MCAR) > Expectation-Maximization (EM)	$P > .05$.	Talib (2018)
Outlier (multivariate)	To detect and discharge outliers.	Box plot analysis	Remove the data that lies outside the upper or lower fence lines.	Kwak & Kim (2017)
Common method bias	To confirm that variation in response is not caused by the instrument but respondents' actual predispositions (instrument introduces bias).	Harman's Single-Factor test through unrotated exploratory factor analysis	Total variance for one factor is < 50%.	Eichhorn (2014) and Kock (2020)
Multicollinearity - collinearity	To measure the extent to which the f parameter estimate variances are inflated. Multicollinearity occurs when two or more explanatory variables in a multiple regression model are highly linearly correlated. It is a state of high intercorrelations	Variance Inflation Factor (VIF)	VIF < 10.	Denis (2019)

among independent variables that disrupts the data.

Descriptive statistic	To assess respondents' demographic information and instrument items.	Frequency, mean, percentage, and standard deviation.	-	Denis (2019) and Talib (2018)
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Evaluation of the Measurement Model

Internal consistency	To confirm the internal consistency of the measured construct (reliability).	Composite reliability (CR)	Value >.70.	Awang et al. (2018) and Hair et al. (2017)
Convergent validity	To measure a construct that should be theoretically related and is achieved when all construct items are statistically significant,	Average variance extracted (AVE): The percentage of variance extracted by the items to measure the construct.	AVE >.50.	Awang et al. (2018) and Hair et al. (2017)
Discriminant validity	To confirm zero redundancy on the constructs measuring the model.	Heterotrait-Monotrait Ratio (HTMT) of the correlations.	HTMT <.85.	Hair et al. (2017)

Evaluation of the Structural Model

Path coefficient	To assess the significance of the hypothesis structural path between exogenous and endogenous variables. The path	Path coefficient + bootstrapping at a 95% confidence interval.	t-value > 1.96 (2 tailed).	Hair et al. (2017)
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	coefficient strength linking the variables indicates the validity of tapping the interest being studied through the constructs.			
Coefficient determination on (R^2)	Measure model predictive power and all construct coefficients in the model. It also indicates the percentage of variables that can be explained by the model.	R^2	.26 (substantial). .13 (moderate). .03 (weak).	Cohen (1988) and Hair et al. (2017)
Effect size (f^2)	To assess whether an omitted construct affects the endogenous construct.	f^2	.35 (large effect). .15 (medium effect). .02 (small effect).	Cohen (1988) and Hair et al. (2017)
Blindfolding and predictive relevance (Q^2)	To measure path Q^2 and how well the path model can predict the originally observed value.	Stone-Geisser's Q^2 value.	Q^2 value > 0 for reflective endogenous variable indicates the path model Q^2 for the construct (exogenous variable implies Q^2 over endogenous counterpart).	Hair et al., (2017) and Kamarudin et al. (2021)
Predictive power (Q^2)	To assess exogenous construct contributions to the endogenous latent variable (either exogenous construct implies a Q^2 impact on the endogenous construct Q^2).	Comparison between PLS-SEM and LM scores of relevant items.	Predictive power if PLS-SEM < LM is based on number of indicators: None = No; Minority = Low; Majority = Medium; All = High.	Hair (2021) and Shmueli et al. (2019)

Moderation analysis	To assess the effect of third variables on the relationship between two constructs.	High and low-level moderators with constrained and unconstrained models	t-value > 1.645 (1 tailed).	Memon et al. (2019) and Ramayah et al. (2018)
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3.11 Summary

This chapter summarises the appropriate research framework, design, and methods. The quantitative study adopted a positive approach to achieve the proposed research objectives. The research instrument used for data collection was adapted and modified from previous studies. Additionally, a pilot study was conducted to investigate the data. Finally, the proposed data analysis plan was finalised.

CHAPTER 4

DATA ANALYSIS

4.1 Chapter Overview

This chapter provides an in-depth overview of the analyses conducted, which includes data cleaning, outlier detection, common method bias, multicollinearity, descriptive statistics, reliability, validity, and the measurement and structural models. The data were analysed using Statistical Package for the Social Sciences (SPSS) version 27 and PLS-SEM with SmartPLS software. The hypotheses of this study were tested and confirmed at the conclusion of the chapter.

4.2 Data Preparation

The data collection for this study was conducted between 10th August 2024 and 29th October 2024. A total of 270 responses were obtained. The gathered data underwent several essential procedures to ensure data validity that would lead to authentic and reliable outcomes.

4.2.1 Data Cleaning and Preparation

Data cleaning was meticulously performed to identify potential data entry errors and exclude non-target respondents based on demographic characteristics, ensuring the reliability of the findings. Descriptive statistics, including maximum and minimum frequency analyses, were conducted to confirm the absence of typographical errors and to interpret the data accurately. All values were validated to fall within the appropriate Likert scale range, in accordance with Ahmad@Mohamad (2016). The data were thoroughly cleaned before proceeding with the analysis.

4.2.2 Missing Data Analysis

The MCAR (Missing Completely at Random) analysis with EM (Expectation-Maximization) was conducted to ensure the absence of missing values in the dataset (Talib, 2018). As a result, no missing values were found in the dataset.

4.3 Outlier

Descriptive statistics, specifically box plot analysis (also known as a box-and-whisker plot), were employed to identify outliers that needed to be removed (Kwak & Kim, 2017; Sekaran & Bougie, 2016). Outliers can lead to non-normal data distribution and negatively impact the results, necessitating their removal (Kamarudin et al., 2021). Extreme scores were marked with a ° (circle) symbol on the box plot, indicating that they were removed from the dataset. Consequently, outliers were eliminated, and the analysis was repeated multiple times until the box plot analysis was free of anomalies. From the initial 309 valid responses, 39 outliers were removed, resulting in a final sample size of 270 valid responses used for the analysis.

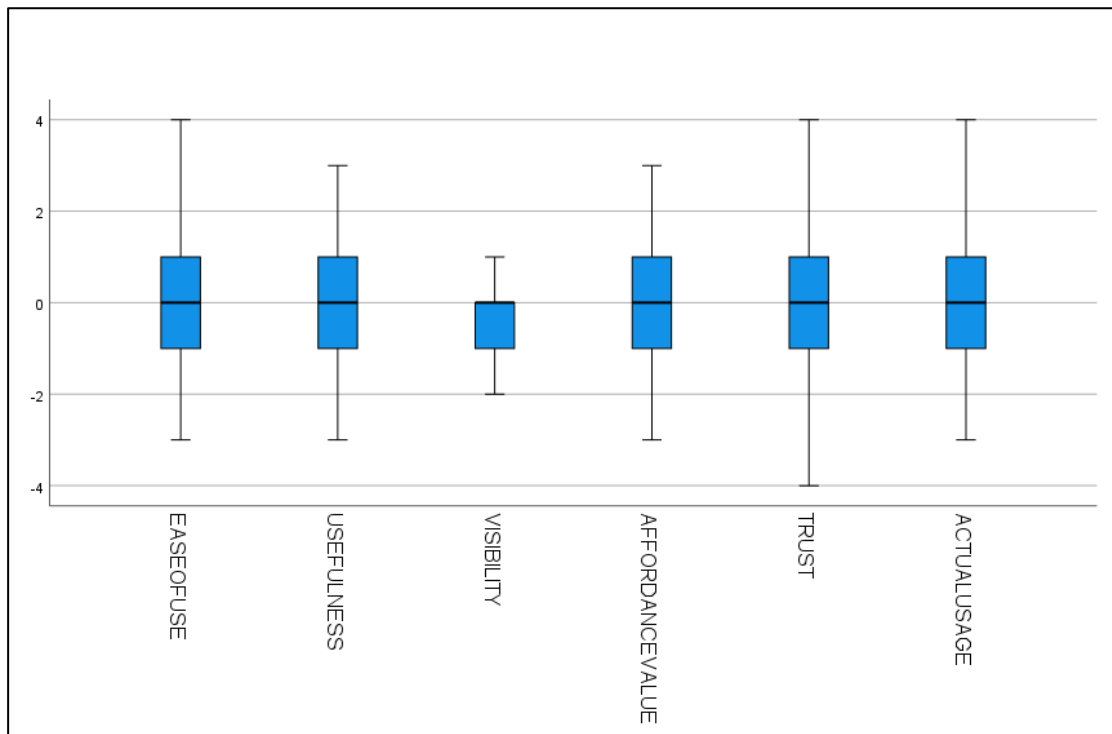


Figure 4.1 Box Plot Analysis

4.4 Common Method Bias (Harman's Single-Factor Test)

Harman's Single-Factor test was conducted to confirm that the instrument did not cause variations in response, but actual respondent predispositions intended to be measured by the instrument. The total variance score of this study reflected 27.44% (in bold). Conclusively, the single factor could only justify 27.44% (under 50%). No standard method bias problem was identified as the variance scored below 0.50 (Eichhorn, 2014; Kock, 2020).

Table 4.1
Harman's Single-factor Test

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.939	27.439	27.439	4.939	27.439	27.439
2	1.507	8.374	35.813			
3	1.162	6.453	42.266			
4	1.061	5.895	48.161			
5	0.982	5.456	53.617			
6	0.887	4.929	58.546			
7	0.866	4.812	63.358			
8	0.824	4.580	67.938			
9	0.773	4.294	72.232			
10	0.734	4.080	76.312			
11	0.668	3.710	80.022			
12	0.634	3.520	83.542			
13	0.606	3.369	86.911			
14	0.539	2.993	89.905			
15	0.519	2.886	92.790			
16	0.474	2.632	95.422			
17	0.447	2.481	97.903			
18	0.377	2.097	100.000			

4.5 Multicollinearity Analysis

Multicollinearity analysis was conducted to determine the extent of inflation in the variance of parameter estimates. Multicollinearity occurs when two or more explanatory variables in a multiple regression model are highly linearly related, leading to potential data disruption. The analysis also ensured that no variables were hypothesised to measure the same constructs in a causal relationship (Ramayah et al., 2018). The Variance Inflation Factor (VIF) was evaluated (see results in Table 4.2), and

no multicollinearity issues were found, as all constructs had VIF values below 10, in line with the guidelines set by Denis (2019). Ultimately, no identical items were used to measure more than one construct (Kamarudin et al., 2021).

Table 4.2
Multicollinearity Analysis

No	Constructs	Collinearity Tolerance	VIF Statistics
1	PEOU	.655	1.527
2	PU	.679	1.472
3	V	.758	1.320
4	AV	.648	1.543
5	TR	.685	1.460

4.6 Descriptive Analysis

Descriptive analysis was conducted on all study constructs and the respondents' demographic profiles.

4.6.1 Demographic Profile of Respondents

A background analysis of the respondents was conducted to understand their characteristics and demographic profiles (refer to Table 4.3 for a summary). Based on the analysis, most respondents were female (71.5%), compared to males (28.5%). Age-wise, the largest group of respondents (28.9%) were aged between 36 and 40 years, followed by 21.9% between 31 and 35, 19.6% between 18 and 25, 13.3% between 26 and 30, 10.7% between 41 and 45, 3.0% between 46 and 50, 1.5% between 50 and 60, and the remaining 1.1% aged 61 and above.

Regarding academic level, most respondents (51.5%) had completed secondary school, followed by 43.0% with tertiary education, 2.2% with primary school education, 1.5% with no formal education, and 1.9% in the "Others" category. In terms of occupation, most respondents (69.6%) were employed in the private sector, followed by 13.0% who were self-employed, 6.7% employed in the government sector, 6.3% who were students, 3.7% who were unemployed, and 0.7% who were retired.

For monthly income, most respondents (57.0%) earned between RM2,501 and RM5,000, followed by 19.3% earning between RM5,001 and RM7,500, 11.5% earning

between RM1,501 and RM2,500, 4.8% who had no income, 3.3% earning less than RM1,500, 2.2% earning more than RM10,000, and 1.9% earning between RM7,501 and RM10,000. Regarding marital status, most respondents were single (76.3%), followed by those who were married (21.9%), and a small percentage were divorced or separated (1.9%). In terms of usage frequency of food delivery applications, most respondents (50.4%) used the applications 3–5 times a week, followed by 21.1% using them 2–3 times a month, 14.8% using them 1–2 times a week, 10.4% using them once a month or less, and the remaining 3.3% using them more than 5 times a week.

Table 4.3
Demographic Profile of the Study

Variable		Frequency	Percent %
Gender	Male	77	28.5
	Female	193	71.5
Age	18 – 25	53	19.6
	26 – 30	36	13.3
	31 – 35	59	21.9
	36 – 40	79	28.9
	41 – 45	29	10.7
	46 – 50	8	3.0
	50 – 60	4	1.5
	61 and above	3	1.1
Academic Level	No formal education	4	1.5
	Primary school	6	2.2
	Secondary school	139	51.5
	Tertiary education	116	43.0
	Others	5	1.9
Occupation	Employed Citizen- Government Sector	18	6.7
	Employed Citizen- Private Sector	188	69.6
	Self-employed citizen	35	13.0
	Retired	2	7
	Unemployed	10	3.7
	Student	17	6.3
Monthly Income	Less than RM1,500	9	3.3
	RM1,501 – RM2,500	31	11.5
	RM2,501 – RM5,000	154	57.0
	RM5,001 – RM7,500	52	19.3
	RM7,501 – RM10,000	5	1.9
	More than RM10,000	6	2.2
	No salary	13	4.8
Marital Status	Single	206	76.3
	Married	59	21.9
	Divorced or separated	5	1.9
Usage Frequency	Once a month or less	28	10.4
	2-3 times a month	57	21.1
	1-2 times a week	40	14.8
	3-5 times a week	136	50.4
	More than 5 times a week	9	3.3
	Total	270	100

4.6.2 Descriptive Analysis of Instrument Items

A descriptive analysis was conducted to evaluate the mean and standard deviation of the pertinent study items. Based on the results in Table 4.4, the statement "It is easy to navigate the menus on the food delivery apps" obtained the highest mean score ($M = 3.96$, $SD = 1.06$), reflecting a strong agreement among respondents regarding ease of navigation. Conversely, the statement "Generally, food delivery apps are easy to use" recorded the lowest mean score ($M = 3.75$, $SD = 1.08$). The mean scores for the PEOU items in Table 4.4 ranged from 3.75 to 3.96, with an average of 3.86, suggesting that respondents generally found food delivery applications to be straightforward and user-friendly.

Table 4.4
Descriptive Statistics for PEOU Items

Label	PEOU Items	Mean (M)	Std.D.(SD)
PEOU1	Learning to use food delivery apps is easy for me.	3.87	0.90
PEOU2	It is easy to navigate the menus on the food delivery apps.	3.96	1.06
PEOU3	Generally, food delivery apps are easy to use.	3.75	1.08
	Total	3.86	

The item "Using food delivery apps saves my time, reflecting on my productivity in doing my other daily tasks" was identified as the most significant PU indicator ($M = 3.74$, $SD = 0.99$) (see Table 4.5). On the other hand, the item "Using food delivery apps enables me to find nearby food more quickly than buying at a restaurant" displayed the lowest mean ($M = 3.61$, $SD = 1.06$). Overall, the mean scores of PU items in Table 4.5 ranged from 3.61 to 3.74. The average mean score for PU was 3.68, indicating that respondents found food delivery applications to be beneficial in saving time and enhancing convenience.

Table 4.5
Descriptive Statistics for PU Items

Label	PU Items	Mean (M)	Std.D.(SD)
PU1	Using food delivery apps enables me to find nearby food more quickly than buying at a restaurant.	3.61	1.06
PU2	Using food delivery apps enables me to get my food faster than buying it at a restaurant.	3.70	1.08
PU3	Using food delivery apps saves my time, reflecting on my productivity in doing my other daily tasks.	3.74	0.99
Total		3.68	

According to the outcomes in Table 4.6 , the item “I have seen others use food delivery apps frequently” had the highest mean among the Visibility indicators ($M = 3.91$, $SD = 0.98$). Meanwhile, the item “All my friends are using food delivery apps” reflected the lowest mean ($M = 3.62$, $SD = 0.99$). Summarily, the mean scores of Visibility items in Table 4.6 ranged from 3.62 to 3.91. The average mean of visibility was 3.79, indicating that respondents generally perceived food delivery applications as highly visible and widely used.

Table 4.6
Descriptive Statistics for Visibility Items

Label	Visibility Items	Mean (M)	Std.D.(SD)
V1	All my friends are using food delivery apps.	3.62	0.99
V2	I have seen others use food delivery apps frequently.	3.91	0.98
V3	I saw various promotional materials for food delivery applications, which influenced my decision to use them.	3.83	1.09
Total		3.79	

The item “I would use food delivery apps more often if better promotional incentives were offered” denoted the highest mean score among the AV construct ($M = 3.84$, $SD = 1.00$) (see Table 4.7). Meanwhile, the item “I would use food delivery apps more often if they reduced the delivery time” reflected the lowest mean score ($M = 3.62$, $SD = 1.11$). Conclusively, the mean scores of AV items listed in Table 4.7 ranged from 3.62 to 3.84. The average mean score of AV was 3.71, indicating respondents generally agree that improvements in delivery charges, promotional incentives, and delivery time could encourage greater use of food delivery applications.

Table 4.7

Descriptive Statistics for AV Items

Label	AV Items	Mean (M)	Std.D.(SD)
AV1	I would use food delivery apps more often if they reduced the delivery charges.	3.6741	1.09
AV2	I would use food delivery apps more often if better promotional incentives were offered.	3.84	1.00
AV3	I would use food delivery apps more often if they reduced the delivery time.	3.62	1.11
Total		3.71	

Based on Table 4.8 , the highest mean score of the TR construct was for the item “The information provided by the food delivery apps is reliable” ($M = 3.63$, $SD = 1.12$), while the item “I believe food delivery apps keep customers’ interests in mind” had the lowest mean score ($M = 3.49$, $SD = 1.11$). Overall, the mean scores of TR items in Table 4.8 ranged from 3.49 to 3.63. The average mean of TR was 3.57, indicating that respondents generally trust food delivery applications.

Table 4.8

Descriptive Statistics for TR Items

Label	TR Items	Mean (M)	Std.D.(SD)
TR1	I believe food delivery apps keep customers’ interests in mind.	3.49	1.11
TR2	I felt secure receiving food ordered through the food delivery apps.	3.57	1.08
TR3	The information provided by the food delivery apps is reliable.	3.63	1.12
Total		3.57	

4.7 Measurement Model Analysis

The measurement model analysis was performed to evaluate the reliability and validity of the model. Composite reliability (CR) and convergent validity were assessed using the average variance extracted (AVE), while discriminant validity was examined through the Heterotrait-Monotrait ratio (HTMT).

4.7.1 Outer Loading, Reliability Analysis, and Convergent Validity

The measurement model was conducted to assess construct reliability and validity using Confirmatory Factor Analysis (see Figure 7). The outer loading scores of

the pertinent study items are presented in Table 4.9. The analysis revealed that most study items demonstrated satisfactory factor loadings of 0.7 and above, consistent with the threshold recommended by Hair et al. (2017). Notably, four items (PU3 and AV3) reflected outer loading factors below 0.7 (PU3 = 0.657; AV3 = 0.564; AU2 = 0.695; AU3 = 0.672). However, according to Hair et al. (2017), a factor loading between 0.4 and 0.7 can be retained provided the measurement model achieves convergent validity through AVE analysis. As indicated in Table 4.9, the AVE values of all constructs surpassed the recommended threshold of 0.50, thereby confirming convergent validity (Hair et al., 2017; Awang et al., 2018). Consequently, items PU3 and AV3 were retained in the measurement model.

Table 4.9
Outer Loading of Measurement Model

Constructs	No	PEOU	PU	V	AV	TR	AU
PEOU	PEOU1	0.701					
	PEOU2	0.792					
	PEOU3	0.713					
PU	PU1		0.840				
	PU2		0.746				
	PU3		0.657				
V	V1			0.773			
	V2			0.767			
	V3			0.715			
AV	AV1				0.802		
	AV2				0.826		
	AV3				0.564		
TR	TR1					0.725	
	TR2					0.727	
	TR3						0.705
AU	AU1						0.778
	AU2						0.695
	AU3						0.672

Reliability and convergent validity were evaluated through the measurement model. As indicated in the table below, all constructs exhibited strong internal reliability, with composite reliability (CR) values exceeding 0.70 (Hair et al., 2017). The reliability analysis ensured the internal consistency of the measured constructs. Additionally, the average variance extracted (AVE) values for the measurement model exceeded the 0.50 threshold, with the lowest being 0.513 (AU) and the highest being

0.565 (V). These results confirm the convergent validity of the measurement model, ensuring that the constructs were appropriately related, consistent with the guidelines provided by Hair et al. (2017).

Table 4.10
Reliability and AVE Scores of the Measurement Model

	CR	AVE
PEOU	0.780	0.548
PU	0.794	0.543
V	0.796	0.565
AV	0.780	0.547
TR	0.763	0.564
AU	0.759	0.513

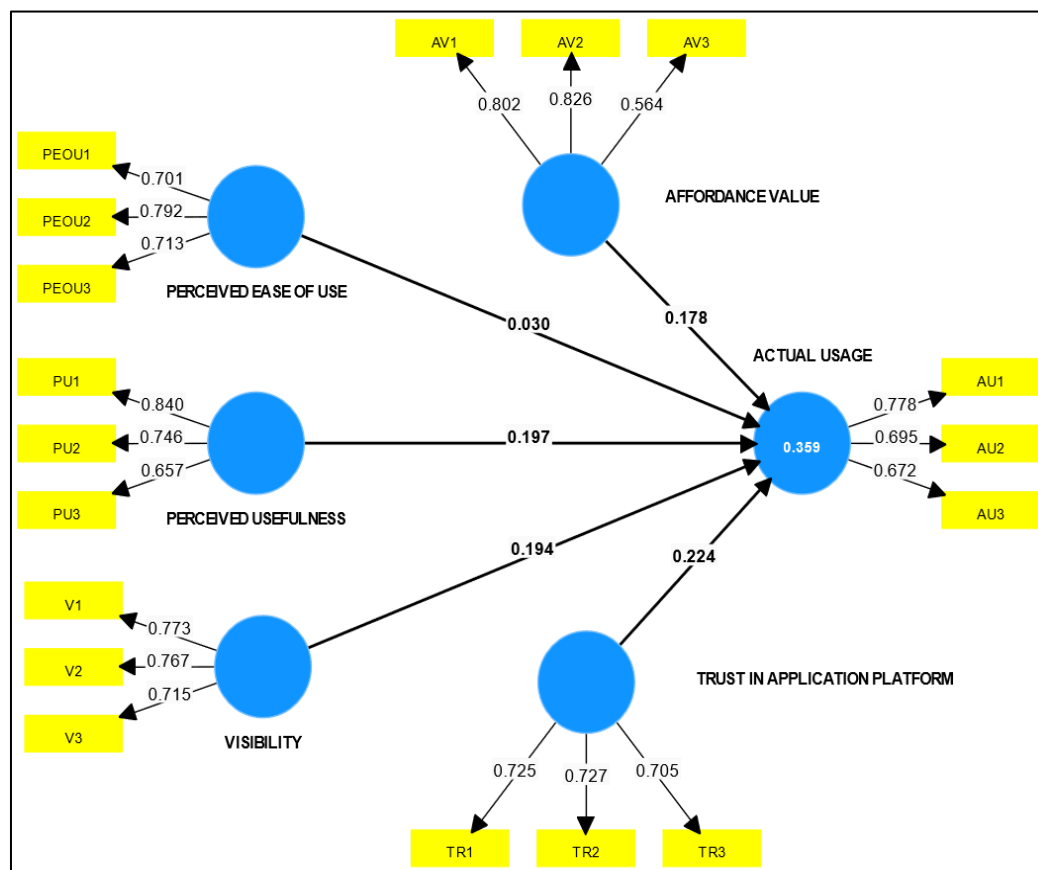


Figure 4.2 The Measurement Model with Outer Loading and Standardised R²
Note: PEOU = Perceived ease of use; PU = Perceived usefulness; V = Visibility; AV= Affordance Value; TR = Trust in application platform, AU = Actual usage

4.7.2 Discriminant Validity

The measurement model was applied to evaluate construct discriminant validity through item cross-loading and HTMT analysis. Table 4.11 shows the cross-loading of items for each construct. Specifically, each item demonstrated the highest cross-loading value for its respective construct, compared to the cross-loadings of other constructs, with the highest values indicated in bold.

Table 4.11
Cross-loading of Construct Items

Items	PEOU	PU	V	AV	TR	AU
PEOU1	0.701	0.237	0.269	0.297	0.303	0.202
PEOU2	0.792	0.372	0.374	0.282	0.263	0.296
PEOU3	0.713	0.317	0.357	0.341	0.298	0.291
PU1	0.329	0.840	0.266	0.353	0.364	0.401
PU2	0.298	0.746	0.219	0.293	0.318	0.314
PU3	0.347	0.657	0.292	0.352	0.285	0.291
V1	0.374	0.237	0.773	0.374	0.232	0.271
V2	0.376	0.274	0.767	0.376	0.258	0.315
V3	0.289	0.257	0.715	0.289	0.155	0.298
AV1	0.240	0.299	0.158	0.802	0.407	0.359
AV2	0.358	0.340	0.243	0.826	0.340	0.368
AV3	0.351	0.364	0.307	0.564	0.327	0.244
TR1	0.259	0.325	0.211	0.314	0.725	0.344
TR2	0.323	0.347	0.165	0.373	0.727	0.279
TR3	0.261	0.267	0.232	0.354	0.705	0.361
AU1	0.308	0.359	0.316	0.407	0.396	0.778
AU2	0.169	0.322	0.186	0.286	0.344	0.695
AU3	0.296	0.286	0.337	0.240	0.240	0.672

Table 4.12 presents the results of the HTMT analysis, which was conducted to assess discriminant validity. In line with the guidelines provided by Hair et al. (2017), the HTMT analysis is considered a robust test for evaluating discriminant validity in PLS-SEM reflective models, as applied in this study. Consequently, all correlations were below the threshold of 0.90, confirming construct discriminant validity (Henseler et al., 2015).

Table 4.12
The HTMT Analysis for Discriminant Validity

Constructs	AU	AV	PEOU	PU	TR	V
AU						
AV	0.775					
PEOU	0.626	0.738				
PU	0.780	0.770	0.706			
TR	0.839	0.874	0.701	0.756		
V	0.677	0.534	0.752	0.560	0.488	

4.8 Assessment of Structural Model

This section describes the evaluation of the structural model, conducted after confirming that the measurement model met the necessary reliability and validity standards. The steps for assessing the structural model using PLS-SEM are as follows:

1. Evaluating the significance of path analysis within the structural model.
2. Evaluating the significance of mediator analysis within the structural model.
3. Analysing the R^2 value.
4. Assessing the f^2 effect size.
5. Examining the Q^2 predictive relevance.
6. Evaluating the significance of moderator analysis within the structural model.

4.8.1 Direct Path Analysis

The paths were analysed following the proposed study hypotheses outlined in Section 2.13. Since PLS-SEM denotes a non-parametric analysis that does not require distributional assumptions, the bootstrapping procedure was conducted in line with Ramayah et al. (2018) and Hair et al. (2017). The path analysis was based on 5,000 bias-corrected bootstrapped subsamples with a 95% confidence interval. The path coefficient values, representing the hypothesised relationships, were standardised between -1 (indicating a strong negative relationship) and +1 (indicating a strong positive relationship), as outlined by Ramayah et al. (2018). Several indicators were implemented to assess the statistical significance of the path coefficients. First, a significance level of 0.05 demonstrated a statistically significant path relationship. As the critical values for a significance level of 5% ($\alpha = 0.05$) are 1.96 in a two-tailed test

and 1.645 in a one-tailed test, t-values exceeding 1.96 (two-tailed) and 1.645 (one-tailed) indicate a statistically significant relationship. In line with Hair et al. (2017), a confidence interval of the lower limit (LL) and upper limit (UL) excluding zero (0) implies a significant effect.

4.13 summarises the direct paths of this study hypothesis. Based on the performed analysis, four out of five path relationships were statistically significant, as indicated by t-values (1.645 and above, one-tailed) and p-values (0.05 and below). Based on the analysis, H2 (PU → AU) was statistically significant ($\beta = 0.197$, $t = 3.144$, $p = 0.002$), indicating that perceived usefulness (PU) has a positive influence on actual usage (AU). The AU would increase by 0.197 when PU increased by 1 standard deviation, thus supporting H2. Similarly, H3 (V → AU) was statistically significant ($\beta = 0.194$, $t = 3.313$, $p = 0.001$), confirming that visibility (V) has a positive effect on actual usage (AU). H4 (AV → AU) was also supported ($\beta = 0.178$, $t = 2.584$, $p = 0.010$), showing that a higher affordance value (AV) leads to greater AU. Additionally, H5 (TR → AU) was significant ($\beta = 0.224$, $t = 3.424$, $p = 0.001$), confirming that trust in the platform (TR) has a positive impact on AU.

However, H1 (PEOU → AU) was statistically insignificant ($\beta = 0.030$, $t = 0.481$, $p = 0.631$), as the confidence interval included zero (LL = -0.088, UL = 0.162), leading to the rejection of H1. In conclusion, the results suggest that perceived usefulness (PU), visibility (V), affordance value (AV), and trust in the platform (TR) positively influence the actual usage of food delivery applications, while perceived ease of use (PEOU) does not have a statistically significant impact on usage.

Table 4.13
Summary of Direct Path Coefficient

H	Path	Path Coefficient (β)	Std.D.	t-value	p-value	Confidence Interval		Decision
						LL	UL	
1	PEOU → AU	0.030	0.063	0.481	0.631	-0.088	0.162	Not supported
2	PU → AU	0.197	0.063	3.144	0.002	0.074	0.319	Supported
3	V → AU	0.194	0.059	3.313	0.001	0.082	0.311	Supported
4	AV → AU	0.178	0.069	2.584	0.010	0.040	0.308	Supported
5	TR → AU	0.224	0.065	3.424	0.001	0.096	0.350	Supported

Note: t-value > 1.645 = significant (1 tailed)

H= Hypothesis; PEOU= Perceived ease of use; PU=Perceived usefulness;

V=Visibility; AV=Affordance value; TR=Trust in application platform; AU=Actual Usage

4.8.2 The R^2

Table 4.14
Summary R^2 Score in the Study

Constructs	R^2
AU	0.359

Note: 0.02 (weak); 0.13 (medium); 0.26 (substantial) (Cohen, 1988)

AU: Actual usage

The R^2 explains how much variance in the dependent variables can be explained by the research model (Hair et al., 2017). The R^2 value for Actual Usage (AU), as shown in Table 4.14, indicated that the model could justify only 35.9% of the variance, leaving 64.1% of the variance unexplained by the factors within this study context. According to Cohen (1988), an R^2 value of 0.359 suggests a substantial level of predictive accuracy for Actual Usage (AU) ($0.26 < R^2$), which reflects a stronger explanatory power than medium. Thus, while the model explains a significant portion of the variance in AU, considerable variance remains attributed to factors outside this study's scope.

4.8.3 The f^2

The f^2 statistic evaluates the relative contribution of an independent variable to explaining the variation in a dependent variable (Ramayah et al., 2018). It specifically measures the strength of an exogenous construct's effect on the R^2 of the endogenous construct. The formula for calculating f^2 is as follows (Ramayah et al., 2018):

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

Based on the summary score of f^2 in this study, the f^2 values for the constructs related to Actual Usage (AU) were as follows: PEOU (0.001) denoted an extremely small f^2 , PU (0.041) and V (0.044) reflected small f^2 , AV (0.033) indicated a small f^2 , and TR (0.054) indicated a small f^2 . According to Cohen (1998) and Hair et al. (2017),

an f^2 value of 0.02 or less is considered small, 0.15 is medium, and 0.35 is high. The results suggest that the effects of these constructs on Actual Usage (AU) are generally small, as indicated by the f^2 values.

Table 4.15
Summary Score of f^2 in the Study

Construct	AU
PEOU	0.001
PU	0.041
V	0.044
AV	0.033
TR	0.054

Note: 0.02 (small); 0.15 (medium); 0.35 (high) (Cohen, 1998; Hair et al., 2017)

PEOU = Perceived ease of use; PU = Perceived usefulness; V = Visibility; AV = Affordance Value; TR = Trust in application platform.

4.8.4 The Q^2

The Q^2 test was conducted using a blindfolding procedure, a resampling technique that systematically deletes and predicts every data point of the indicators in the endogenous constructs within the reflective measurement model (Ramayah et al., 2018). This method compares the original values with predicted ones to evaluate the predictive relevance of the endogenous constructs in the model (Kamarudin et al., 2021; Ramayah et al., 2018). According to the fundamental rule of thumb for Q^2 assessment, values must exceed zero to demonstrate predictive model relevance (Kamarudin et al., 2021). Based on the analysis, the Q^2 score of AU was 0.162, indicating predictive relevance.

Table 4.16
Summary Result of Q^2

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
PEOU	810.000	810.000	-
PU	810.000	810.000	-
V	810.000	810.000	-
AV	810.000	810.000	-
TR	810.000	810.000	-
AU	810.000	678.694	0.162

The predictive power of Q^2 was evaluated by comparing the PLS-SEM and LM scores of relevant items, following the approach of Shmueli et al. (2019) and Hair (2021). Based on Figure 8, the Q^2 exceeded zero (> 0) and was duly affirmed. A summary of the score is presented in Table 4.17. Resultantly, most items (RMSE = 03 out of 03; MAE = 03 out of 03) scored highest on LM compared to PLS-SEM. The RMSE score is primarily referred to following the highly symmetrical distribution of prediction errors. Thus, the model denoted high predictive power (Shmueli et al., 2019).

Table 4.17

Analysis of Q^2 Predictive Power Value

PLS-SEM				LM		
Items	Q^2_{predict}	RMSE	MAE	Items	RMSE	MAE
AU1	0.228	0.905	0.724	AU1	0.940	0.744
AU2	0.128	0.895	0.682	AU2	0.907	0.701
AU3	0.120	1.026	0.852	AU3	1.066	0.867
Total Items scored on LM bigger than PLS =					3/3	3/3

Note: PLS = Partial least square; LM = Linear regression model; RMSE = Root mean squared error; MAE = Mean absolute error

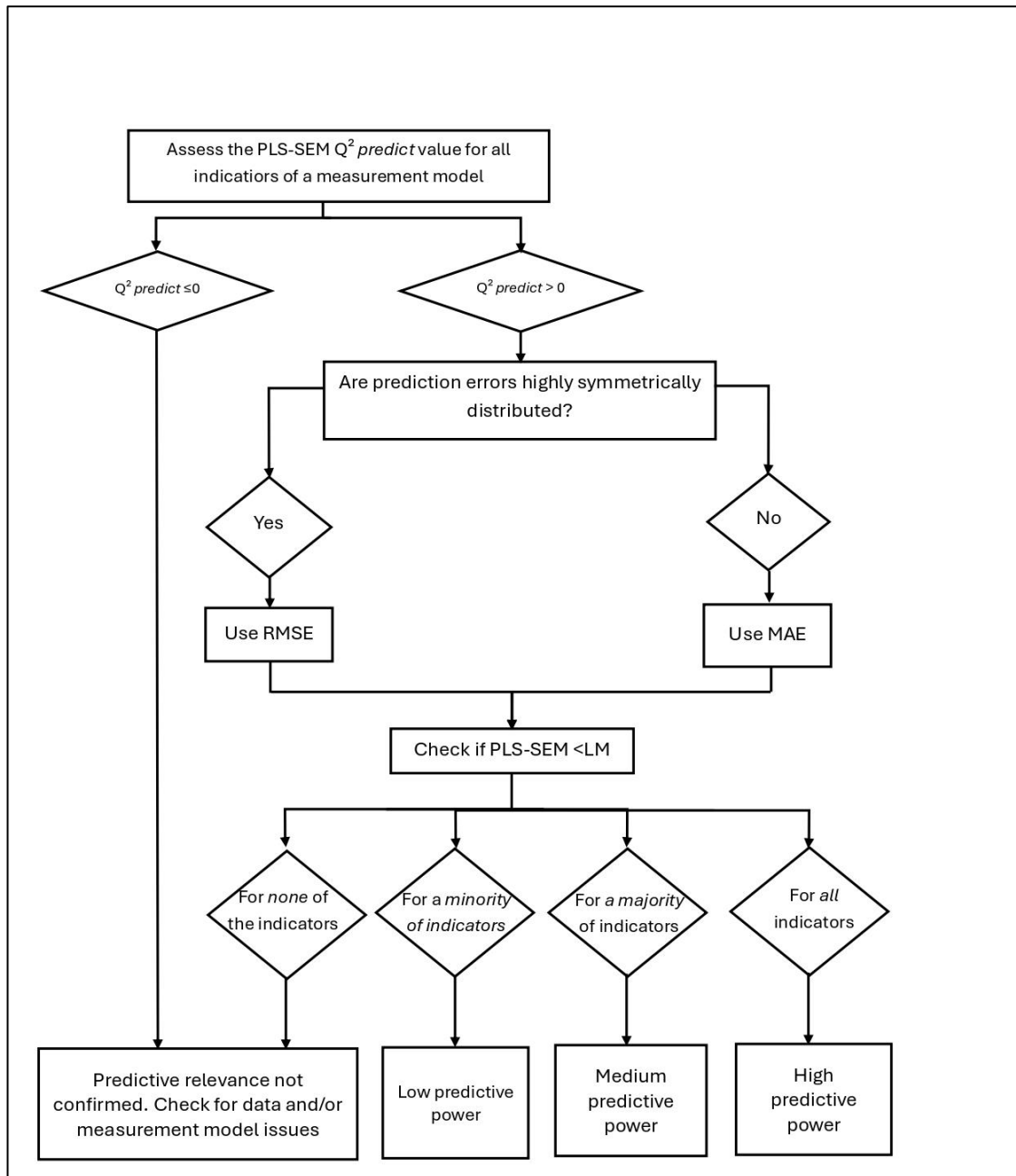


Figure 4.3 Guideline Of PLS-SEM Q² Predictive Power
Source: (Shmueli et al., 2019)

4.8.5 Moderator Analysis

i) Moderating Effect of Generations on Actual Usage

To examine whether generations moderates the relationships between key constructs and actual usage, a Multi-Group Analysis (MGA) using the bootstrapping method was conducted. The sample was divided into two generational groups: Group 1

(18–35 years old) and Group 2 (36–65 years old). Path coefficients were compared to assess whether generations significantly moderates these relationships. This analysis aimed to determine whether generational differences influence the relationships between the identified factors and the use of food delivery applications. The results showed no significant moderating effect of generations, indicating that these relationships remain consistent across generations. This suggests that the factors influencing the usage of food delivery applications are not substantially affected by generational differences.

Table 4.18
Moderating Effect of the Generations

Path	Difference (Group_1 - Group_2)	1-tailed p- value	2-tailed p- value
Perceived Ease of Use → Actual Usage	-0.019	0.560	0.879
Perceived Usefulness → Actual Usage	0.204	0.053	0.106
Visibility → Actual Usage	-0.145	0.892	0.216
Affordance Value → Actual Usage	-0.186	0.908	0.183
Trust in Application Platform → Actual Usage	0.029	0.418	0.835

Group 1 (18–35 years old); Group 2 (36–65 years old)

From Table 4.18 , it is evident that none of the path differences reached statistical significance at the conventional 0.05 level in the two-tailed test, indicating no strong moderating effect of generations on the examined relationships. However, the path from perceived usefulness to actual usage shows a marginal difference with a one-tailed p-value of 0.053, suggesting a potential trend where the effect of perceived usefulness on actual usage may be stronger for younger users (18–35 years old) compared to older users (36–65 years old). This directional hypothesis aligns with prior literature positing that younger generations tend to have higher technology adoption and perceived usefulness in digital applications. Nevertheless, this effect remains marginally insignificant and should be interpreted with caution. In summary, the results from the bootstrapped multi-group analysis suggest that generations does not significantly moderate the influence of the independent variables (Affordance Value, Perceived Ease of Use, Perceived Usefulness, Trust in Application Platform, and

Visibility) on Actual Usage. This implies that the proposed relationships hold consistently across generational differences in the current sample.

4.9 Summary

This chapter outlines the analysis of this study data. Prior to analysis, data cleaning and preparation were completed. Following the removal of significant outliers, an assessment of normality was conducted. Descriptive analysis was also performed to examine the demographic profiles of the respondents and the items of the instrument. The reliability and validity of the instrument were evaluated through measurement analysis. Additionally, the structural model was assessed, including studies of mediators and moderators, to test the hypotheses. A summary of the findings is presented below in Table 4.19.

Table 4.19
Summary of Hypothesis Finding and Result

No.	Hypothesis	Decision
H1	Perceived ease of use positively influences actual usage of FDAs.	Not supported
H2	Perceived usefulness positively influences actual usage of FDAs.	Supported
H3	Visibility positively influences actual usage of FDAs.	Supported
H4	Affordance value positively influences actual usage of FDAs.	Supported
H5	Trust in application platform positively influences actual usage of FDAs.	Supported
H6	There is a moderating effect of generations between perceived ease of use, perceived usefulness, visibility, affordance value and trust in application platform.	
H6a	The effect of perceived ease of use on actual usage of FDAs is stronger for the younger generation than the older generation.	Not supported
H6b	The effect of perceived usefulness on actual usage of FDAs is stronger for the younger generation than the older generation.	Not supported
H6c	The effect of visibility on actual usage of FDAs is stronger for the older generation than the younger generation.	Not supported
H6d	The effect of affordance value on actual usage of FDAs is stronger for the younger generation than older generation.	Not supported
H6e	The effect of trust in application platform on actual usage of FDAs is stronger for the older generation than the younger generation.	Not supported

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Chapter Overview

This final chapter synthesises the discussion of this study, grounded in the findings derived from data analysis and prior research. This chapter further details this study's implications, limitations, and recommendations for future research.

5.2 Discussion of Findings

The present study was designed to explore the factors influencing the actual usage of FDAs across different generations. This study employed the TAM as its theoretical framework to understand how specific customers' characteristics, such as perceived ease of use and perceived usefulness, influence their interactions with FDAs. In addition to examining the state of FDA usage, this study aimed to investigate the impact of these variables on customers' usage of FDAs. Specifically, this study sought to answer whether the variables derived from TAM could effectively explain consumer decisions to use FDAs.

To summarise, the research questions of this study sought to answer include:

- I. **RQ 1:** What are the influences of perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform on the actual usage of FDAs?
- II. **RQ 2:** To what extent do the factors affecting customers' actual usage of FDAs moderated by generations?

5.2.1 Research Question 1

Research question 1 corresponds to research objective 1; (RQ1) What are the influences of perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform on the actual usage of FDAs? This research question relates to Hypotheses H1 to H5, which aim to examine the direct effects of key predictors on the actual usage of food delivery applications (FDAs)

H1: Perceived ease of use positively influences actual usage of FDAs.

Contrary to the assumptions of the TAM and the proposed Hypothesis 1 (H1), this study found that PEOU did not significantly influence the actual usage of food delivery applications (FDAs). While PEOU is typically associated with adoption technology, particularly during the initial stages, its diminished influence in this context suggests that once users become familiar with an application, ease of use becomes less of a determining factor for continued engagement. This outcome aligns with previous findings that suggest ease of use is most impactful during early adoption phases, but its effect diminishes as users adapt to a platform's functionality (Castillo & Bigne, 2021). In other words, habitual users may no longer perceive ease of use as a significant value driver because it has already become a baseline expectation. Instead, more strategic factors such as PU, trust, or visibility begin to dominate decision-making and behavioural patterns in continued usage (Chotigo & Kadhalik, 2022). Argue that the FDAs interface is become intuitive and so standardized that “ease of use” is no longer competitive advantage or a driver of use as it is a “must have” hygiene factor (Chotigo & Kadhalik, 2022).

From a cultural perspective, this finding also reflects characteristics of collectivist societies, such as Malaysia, where group-oriented norms and shared experiences shape user behaviour. In such contexts, individuals are more likely to be influenced by social proof, group trust, and communal benefits than by their individual perceptions of interface simplicity. As ease of use becomes normalised across platforms, users may rely more on community-driven factors such as recommendations, popularity among peers, or suitability for group ordering over personal effort reduction when choosing and continuing to use a food delivery application. Interestingly, although PEOU was not a statistically significant predictor of actual usage in this study, the descriptive data show a relatively high overall perception of ease among users. The highest mean score was recorded for PEOU2: “It is easy to navigate the menus on the food delivery apps” ($M = 3.96$). This indicates that while users generally find the FDA user-friendly, the prevalence of ease may neutralise its effect as a differentiating factor in usage behaviour. That is, when ease of use is already well-established across platforms, it may no longer significantly influence usage variance.

These findings diverge from earlier research by Kang and Namkung (2019), Chakraborty (2022), which emphasised the importance of PEOU in adoption and

behavioural outcomes. However, they are consistent with Castillo & Bigne (2021), who suggested that ease of use might lose significance in technologically mature contexts, where users are accustomed to intuitive application interfaces. For practitioners, these results underscore the importance of shifting their strategic focus beyond interface simplicity to sustaining engagement through perceived utility, trust-building mechanisms, and enhanced app visibility, particularly in collectivist settings where communal trust and group preferences often outweigh individual usability concerns.

H2: Perceived usefulness positively influences actual usage of FDAs.

As hypothesised, PU was found to have a significant and positive impact on the actual usage of FDAs. This finding supports Hypothesis 2 (H2) and aligns with the Technology Acceptance Model, which identifies usefulness as a key determinant of behavioural intention and technology adoption (Venkatesh & Davis, 2000). Perceived usefulness refers to the extent to which users believe that using a particular technology will enhance their performance or efficiency (Igbaria et al., 2007). In the context of FDAs, this translates into users valuing features that save time, offer convenience, and streamline the food ordering process. As confirmed by Leung et al. (2023), users often cite quick delivery, simplified payment processes, and responsive customer service as key factors in their positive experiences, all of which contribute to a high sense of usefulness.

The highest mean score among PU items was recorded for PU3: “Using food delivery apps saves my time, reflecting on my productivity in doing my other daily task” ($M = 3.74$). This reinforces the notion that efficiency and time-saving capabilities are key motivators behind sustained use of FDAs. Users gravitate towards platforms that not only facilitate food purchases but also complement their broader lifestyle and productivity needs. These findings align with prior research by Hong et al. (2021) and Arora et al. (2023), all of whom have emphasised the central role of PU in driving continued engagement with digital services. When customers perceive an application as applicable, they are more inclined to view it as essential to their daily routines and are thus more likely to use it consistently. Additionally, features such as food variety, application interface quality, and information accuracy were also cited by An et al. (2023) as critical contributors to perceived usefulness.

From a practical standpoint, these results indicate that emphasising utility in design, marketing, and service delivery should be a strategic priority for FDA providers. Ensuring that the application continues to meet user needs in a reliable, time-saving, and efficient manner will strengthen user retention and encourage habitual use. Moreover, marketing efforts should highlight these benefits, as they align with users' decision-making criteria when choosing between competing platforms.

H3: Visibility positively influences actual usage of FDAs.

The findings of this study confirm Hypothesis 3 (H3), revealing that visibility has a significant and positive influence on the actual usage of food delivery applications (FDAs). This suggests that individuals are more likely to use FDAs when they observe their usage among peers, such as family, friends, or broader social circles, and are exposed to related promotional content. In the context of food delivery applications, visibility encompasses both observational exposure, which refers to observing others use the service, and advertising exposure, which involves promotional materials and social media content. Recent studies have demonstrated that visibility offers epistemic value by providing cues about a service's perceived usefulness, credibility, and social acceptance (Xu et al., 2021). Individuals often interpret observed usage and advertisements as endorsements, which helps reduce uncertainty and encourages adoption (Talwar et al., 2020).

The highest mean score among visibility items was for V2: "I have seen others use food delivery apps frequently" ($M = 3.91$). This high rating suggests that peer usage is particularly influential in shaping consumer behaviour, more so than advertisements or general awareness. Observing others using the acts of FDAs as a behavioural signal that these platforms are convenient, socially acceptable, and beneficial. This aligns with research conducted by Tandon et al. (2021), which asserts that mobile service adoption is strongly driven by visibility. Marketers frequently leverage this insight through influencer partnerships and user-generated content that amplify visibility and perceived popularity (Kopplin & Rosch, 2021). Moreover, visibility can enhance not only adoption but also perceived social value, especially among younger users who align usage behaviours with their digital identity and peer trends. Thus, platform developers and marketers should continue to invest in visibility-enhancing strategies such as social

media campaigns, influencer collaborations, and referral programmes that showcase real user interactions. This can effectively normalise and encourage adoption, ultimately boosting actual usage in a competitive digital food service landscape.

H4: Affordance value positively influences actual usage of FDAs

The findings of this study confirm Hypothesis 4 (H4), indicating that affordance value has a significant and positive impact on the actual usage of food delivery applications (FDAs). This supports the view that specific functional and interactive features embedded in FDAs, such as live tracking, personalised menus, user reviews, and real-time notification, enhance user engagement and drive sustained usage. These results align with affordance theory, which posits that the perceived benefits and capabilities offered by technology influence how it is used. In this study, the total mean score for affordance value was 3.71, indicating a relatively strong level of agreement among respondents regarding the usefulness of these functional features. Although not the highest among all constructs, this shows that affordance-related aspects continue to be a central driver of FDA usage behaviour.

In this context, affordance value encompasses not only the core functions of ordering food but also additional utilities that make the application more beneficial and enjoyable for users. Prior studies have emphasised the importance of platform features in shaping customer satisfaction and loyalty. For instance, Wells et al. (2011) highlighted that users perceive higher product quality when digital platforms offer rich and accessible information, particularly in environments characterised by information asymmetry, such as online food ordering, where users cannot physically inspect the product. Jadhav et al. (2023) examined platform attributes, including user interface design and feature accessibility, and found these to be significant predictors of customer satisfaction and loyalty. In Malaysia, Tarmazi et al. (2023) similarly found that perceived ease of use, reliable functionality, and transparency in delivery information directly affect satisfaction and loyalty intentions.

The literature further supports the role of features like discounts, coupons, and customization options in enhancing perceived value. Leung et al. (2023) found that many users were particularly motivated by free delivery offers and promotional incentives, which served as meaningful cost-saving benefits, thereby adding another

dimension to affordance value. This finding is consistent with Wang et al. (2021) and Choe et al. (2021), who emphasise that user interface quality, ease of navigation, and platform reliability are crucial elements for enhancing every user's satisfaction and promoting ongoing use. Importantly, this study found that actual usage of FDAs increased significantly when users perceived the application as offering practical, flexible, and interactive features beyond basic ordering. These affordances enable users to experience a greater sense of control, thereby enhancing the platform's interactivity and personalization. The resulting positive experiences contribute not only to initial adoption but also to repeat usage and long-term platform loyalty. Thus, developers and marketers should prioritise delivering meaningful, user-centric features that address convenience, control, and personalization to enhance user satisfaction and encourage continued use.

H5: Trust in application platform positively influences actual usage of FDAs.

The findings of this study confirm Hypothesis 5 (H5), indicating that trust in application platform has a significant and positive influence on the actual usage of FDAs. This result aligns with existing literature in the fields of e-commerce and information systems, which consistently identifies trust as a foundational determinant of consumer behaviour in online environments. Recent cross-market research by Quintus et al. (2024) found that company reputation, perceived security, and website quality have a significant and positive influence on consumer trust, which directly boosts purchase intentions across both advanced and emerging markets. A comprehensive meta-analysis by Handoyo (2024) further confirmed that trust uniquely reduces perceived risk and serves as the most influential factor shaping online purchasing decisions. Similarly, Kim et. al (2017) emphasised that trust plays a central role in forming purchase intentions and mediates relationships with perceived value and website credibility.

Trust, in this context, reflects users' perceptions of the safety, security, and reliability of FDAs in handling sensitive information such as payment credentials and personal data, as well as their ability to deliver services accurately and consistently. Given the intangibility of food products in online environments where consumers cannot physically examine or taste the food before purchase, trust becomes a crucial

substitute for direct product experience (Ashfaqa et al., 2020; Dong et al., 2021). The limited sensory input increases uncertainty, which consumers seek to mitigate through indicators of platform reliability, such as interface quality, clear product information, and consistent service performance. Supporting this, the descriptive statistics revealed that the trust item “The information provided by the food delivery apps is reliable” had the highest mean score of $M = 3.63$, indicating that users particularly value the accuracy and dependability of the information presented on these platforms. This significant influence of trust also aligns with prior empirical findings that link higher trust levels to increased behavioural intention and actual usage of FDAs (Jun et al., 2021; Muangmee et al., 2021; Zhao & Bacao, 2020). As consumers encounter fewer issues with data security, delivery reliability, and service transparency, they are more inclined to continue using and even recommend the platforms. Furthermore, platforms that emphasise user interface quality, transparent vendor practices, and hygiene assurances foster deeper consumer trust, thereby enhancing platform stickiness and repeat usage (Wang et al., 2021; Zhuang et al., 2021).

Nevertheless, despite widespread trust in FDAs, lingering privacy and security concerns remain, particularly regarding the sharing of personal information such as home addresses and credit card details (Leung et al., 2023). In Malaysia, although the Personal Data Protection Act (PDPA) has been in place for several years, its scope is limited to commercial transactions. Several high-profile data breaches involving public sector data have highlighted the country's ongoing challenges in data governance and protection (Cheryl et al., 2021). These incidents may contribute to users' underlying concerns about how well digital platforms, including those of the FDA, can safeguard sensitive personal information.

Therefore, operators and developers should prioritise building and maintaining consumer trust through technological reliability, secure infrastructure, transparent communication, and quality user experiences. Addressing residual concerns around privacy and security is equally critical to sustaining customer engagement and loyalty in the highly competitive food delivery market.

5.2.2 Research Question 2

Research question 2 corresponds to research objective 2; (RQ2) To what extent do the factors affect customers' actual usage of FDAs moderated by generations? Despite theoretical expectations based on generational technology adoption models (Morris & Venkatesh, 2000), none of the moderation effects were statistically significant.

H6: There is a moderating effect of generations between perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform.

The results of this study revealed that generations did not significantly moderate the relationships between perceived ease of use, perceived usefulness, visibility, affordance value, trust in application platform, and actual usage of food delivery applications (FDAs). This suggests that both younger and older users exhibit similar behavioural responses to these influencing factors, indicating that generational differences are not as pronounced in this context as hypothesised.

The only path that almost approached statistical significance was H6b (Perceived Usefulness → Actual Usage), with a path difference of 0.204 and a one-tailed p-value of 0.053. While this result suggests a potential trend toward generational divergence in how perceived usefulness affects actual FDA usage, it does not meet conventional significance thresholds. Therefore, no substantial evidence was found to support generational moderation across the specified constructs.

These findings may reflect the increasing digital convergence in Malaysia, where both younger and older generations are becoming more accustomed to using digital services, especially mobile applications. The widespread accessibility of smartphones, improved internet connectivity, and the normalization of online services during and after the COVID-19 pandemic have likely minimised digital divides traditionally observed between generations cohorts. This aligns with the observation that digital literacy has been expanding across generations in the country.

The collaboration between the public, businesses, and government agencies is crucial in supporting the growth of digital economies, particularly within the food delivery sector. Businesses have a unique opportunity to reduce poverty and increase

profitability by adapting their models to serve individuals at the base of the economic pyramid. The widespread use of mobile devices and internet connectivity in the digital era has enabled access to large, previously untapped markets comprising billions of low-income consumers. As a result, e-commerce has emerged as a key competitive strategy for many enterprises. In Malaysia, where 84.2% of the population has internet access and 88.3% use shopping applications monthly, food delivery applications (FDAs) recorded 6.86 million takeout orders in 2020 (Tan et al., 2024).

It is also essential to consider that this study was conducted in the Klang Valley, a highly urbanised and digitally mature region where food delivery services are well-established, and technology adoption is relatively high across all generations. The early introduction and widespread use of FDAs in this area may have contributed to the uniformity in users' behaviour, thus reducing observable generational differences. The high exposure to digital platforms and internet services in Klang Valley, especially post-pandemic, supports the convergence of digital habits among different generations of cohorts.

Despite the insignificant moderating effects, the literature has consistently emphasised the role of generations in technology adoption, digital behaviour, and trust in online platforms. Younger generations, particularly Generation Z and Millennials, are often portrayed as "Digital Natives" with high exposure to technology and a natural inclination towards using innovative services, such as FDAs (Yulius et al., 2022; Vancia et al., 2023). In contrast, older adults have traditionally exhibited more conservative usage patterns and greater concerns around safety, privacy, and ease of use (Rudolph & Zacher, 2020; Zhuang et al., 2021).

Nonetheless, this study suggests that these generational differences may be narrower in the context of FDA usage. The findings challenge assumptions rooted in generational cohort theory by showing minimal variation in behavioural response across generational differences. This could be due to the accelerated digital adoption triggered by necessity during the pandemic, which exposed older generations to online services they may not have otherwise used.

Additionally, the growing presence of trust-building mechanisms on digital platforms, such as secure payment systems, real-time tracking, and user reviews, may have contributed to more uniform trust levels among users across different generations brackets (Rodrigues et al., n.d.; Madiawati & Wijaksana, 2023). Trust, a pivotal factor

in online purchasing and service adoption, has become a shared priority for both younger and older consumers, thereby reducing its differentiation across generations.

In summary, while previous research emphasised generational contrasts in digital behaviour, this study's results suggest a converging trend in FDA usage behaviours, where generational lines may be less significant than once presumed. Businesses and platform developers can interpret these findings as an opportunity to adopt a more integrated approach when designing user experiences and marketing strategies, rather than segmenting strictly by age. However, they should remain attentive to emerging nuances, such as the near-significant effect in H6b, which may warrant further exploration in future research with larger or more diverse samples.

5.3 Study Novelty and Gap Fulfilment (Academic Implications)

This study offers several novel contributions to the literature on FDAs and technology adoption. First, it uniquely examines the moderating effect of generations on FDA usage, an area that has been largely unexplored in existing research. By considering generations, this study reveals any potential significant generational differences in the factors that influence FDA adoption, providing a more nuanced understanding of user behaviour. Additionally, this research incorporates the concept of visibility, particularly in terms of marketing and social influence, as a predictor of FDA usage and an aspect that has received minimal attention in previous studies. The integration of multiple constructs from the TAM, such as perceived ease of use, perceived usefulness, and trust in the application, adds further depth by offering a comprehensive model for understanding FDA adoption.

This study also addresses several critical gaps in existing literature. It fills the void in research regarding the influence of generations on technological acceptance in the food delivery sector, a topic that has been underexplored despite its practical relevance. Furthermore, this study contributes to a better understanding of the post-pandemic landscape, where consumer behaviour towards FDAs has evolved due to factors such as trust, safety concerns, and increased demand for convenience. By examining these shifts, this study offers valuable insights into how the pandemic has influenced consumer attitudes and FDA usage. Additionally, the focus on affordance

value and trust as key drivers of FDA usage offers a new perspective on user interactions with mobile food delivery platforms, expanding the scope of existing adoption models.

In conclusion, this research makes significant theoretical and practical contributions to the field of food delivery services and the adoption of technology. By addressing gaps in the literature on generation-related differences, FDA visibility, and post-pandemic changes, this study enhances our understanding of the factors that influence FDA usage. The findings offer practical implications for businesses and developers in optimising their services to better cater to the evolving needs of consumers, particularly in terms of trust, usability, and targeted marketing strategies. Moreover, it sets the stage for future research in the area, particularly in terms of extending TAM and integrating additional contextual factors in the study of mobile application adoption.

5.4 Study Implications (Practical)

This study highlights several key implications for businesses and service providers in the FDA industry. The findings emphasise that perceived usefulness, visibility, affordance value, and trust significantly influence FDA usage across generations, while perceived ease of use has become less impactful among experienced users. This suggests that FDA providers should shift their focus from simplifying interfaces to enhancing features that improve everyday convenience, such as fast delivery, order tracking, secure transactions, and personalised recommendations. Emphasising these practical benefits in marketing strategies, especially in urban, digitally connected areas like Klang Valley, can lead to stronger customer retention and habitual use. The high digital literacy in Klang Valley, supported by widespread smartphone usage and post-pandemic digital normalization, further justifies the need for value-driven service design that matches the expectations of tech-savvy consumers.

Moreover, this study found that generational differences did not significantly moderate FDA usage behaviour, indicating a convergence in digital adoption trends among generations. Businesses can therefore apply integrated marketing strategies across demographics, while still leveraging visibility as a key driver. Social media platforms like Instagram, TikTok, and Facebook should be used to amplify FDA visibility through influencer collaborations, user-generated content, and referral

incentives. These low-cost yet high-impact tools can normalise application usage and boost consumer engagement. Trust-building efforts must also be prioritised, including transparency in service quality, vendor hygiene, and customer support. Given that Klang Valley represents a digitally mature market, these practical applications are crucial for scaling platform success and capturing a broader consumer base through tailored, trustworthy, and socially visible digital services. Given Klang Valley's role as a digitally advanced region, the successful implementation of these action-oriented strategies was instrumental in enhancing platform competitiveness, broadening consumer reach, and ensuring sustainable growth within the food delivery ecosystem.

5.5 Study Limitations and Future Recommendations

This study offers valuable insights into the factors influencing the actual usage of FDAs across different generational cohorts. However, several limitations must be acknowledged. Firstly, the research predominantly focuses on specific geographic regions, which may limit the generalisability of the findings to other countries or cultural contexts. Consumer behaviour towards FDAs can vary significantly based on regional factors, including technological infrastructure, cultural attitudes toward technology, and socioeconomic conditions. Consequently, future research could benefit from expanding the geographical scope to include diverse regions, which would provide a more comprehensive understanding of FDA usage across different cultural and socioeconomic contexts. Moreover, the sample in this study may not fully capture the diversity within generational cohorts, which could affect the representativeness of the findings. For instance, the experiences of older generations may vary significantly based on factors such as digital literacy or access to technology, which were not fully accounted for in this study. To address this, future studies could utilise more diverse and representative samples to ensure the findings are generalisable to a broader demographic.

Another limitation of this study is the reliance on a cross-sectional research design, which provides only a snapshot of consumers' actual usage at a single point in time. This approach limits the ability to observe trends and changes in FDA usage over an extended period, especially in the aftermath of the COVID-19 pandemic. Longitudinal studies can offer deeper insights into how consumer behaviour evolves,

particularly as the pandemic's influence diminishes and new patterns of technology adoption emerge. Additionally, this study primarily relies on self-reported data, which may introduce biases such as social desirability bias or inaccuracies in reporting actual usage. To mitigate these limitations, future research could incorporate objective data, such as application usage logs or transaction records, to capture more accurate and real-time usage patterns. Furthermore, this study assumes that all respondents have equal access to technology, but disparities in digital access, especially among older generations, may influence FDA usage. A more nuanced examination of access to technology could provide a more accurate understanding of how digital literacy and access affect FDA adoption across generational differences.

Lastly, while this study focuses on factors such as perceived ease of use, perceived usefulness, visibility, affordance value, and trust, it does not explore all possible variables influencing FDA usage. Future research could consider additional factors, such as consumer attitudes toward food sustainability, environmental consciousness, or the role of social media influencers in shaping consumer behaviour. These variables may particularly impact the younger generations, who are often more attuned to social and environmental issues. Moreover, the role of cultural and regional differences in influencing FDA adoption remains an underexplored area. The impact of factors such as privacy concerns, digital payment preferences, and cultural attitudes toward technology could vary significantly across regions, suggesting that a more localised approach to studying FDA usage could yield richer insights.

5.6 Conclusion

In conclusion, this study provides valuable insights into the factors influencing the usage of FDAs across different generational groups. It highlights how perceived ease of use, perceived usefulness, visibility, affordance value, and trust in application platform significantly affect FDA usage. This study also emphasises the role of generations as a moderating factor, with younger generations prioritising ease of use and technology-related features. In comparison, older generations focus more on trust and security. The findings successfully identified that Perceived Usefulness (PU), Visibility (V), Affordance Value (AV), and Trust (TR) are significant positive predictors of FDA usage. Notably, Perceived Ease of Use (PEOU) was found to be non-

significant, suggesting that in a mature digital market like the Klang Valley, a user-friendly interface is a baseline expectation rather than a primary motivator for increased use. The study conclusively achieved this study objective by conducting a Multi-Group Analysis (MGA) between younger (18–35) and older (36–65) cohorts. The results demonstrated that generational differences do not significantly moderate the relationship between the identified factors and actual usage. This indicates a "digital convergence" where both groups now exhibit similar behavioral patterns in response to platform utility and trust. These findings offer important implications for businesses in the food delivery industry, suggesting the need to tailor their services to meet the specific preferences of different generations. Future research can build on these findings by exploring other factors and expanding this study's scope to gain a deeper understanding of consumer behaviour in this sector.

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APPENDICES

APPENDIX 1

Demographic Profile

Demographic Profile – Gender

Variables		Frequency	Percent %
Gender	Male	77	28.5
	Female	193	71.5
	Total	270	100

Demographic Profile – Age

Variables		Frequency	Percent %
Age	18 – 25	53	19.6
	26 – 30	36	13.3
	31 – 35	59	21.9
	36 – 40	79	28.9
	41 – 45	29	10.7
	46 – 50	8	3.0
	50 – 60	4	1.5
	61 and above	3	1.1
	Total	270	100

Demographic Profile – Academic Level

Variables		Frequency	Percent %
Academic Level	No formal education	4	1.5
	Primary school	6	2.2
	Secondary school	139	51.5
	Tertiary education	116	43.0
	Others	5	1.9
	Total	270	100

Demographic Profile – Occupation

Variables		Frequency	Percent %
Occupation	Employed Citizen-Government Sector	18	6.7
	Employed Citizen-Private Sector	188	69.6
	Self-employed citizen	35	13.0
	Retired	2	7
	Unemployed	10	3.7
	Student	17	6.3
	Total	270	100

Demographic Profile – Monthly Income

Variables		Frequency	Percent %
Monthly Income	Less than RM1,500	9	3.3
	RM 1,501 – RM 2,500	31	11.5
	RM 2,501 – RM 5,000	154	57.0
	RM 5,001 – RM 7,500	52	19.3
	RM 7,501 – RM 10,000	5	1.9
	More than RM 10,000	6	2.2
	No salary	13	4.8
Total		270	100

Demographic Profile – Marital Status

Variables		Frequency	Percent %
Marital Status	Single	206	76.3
	Married	59	21.9
	Divorced or separated	5	1.9
Total		270	100

Demographic Profile – Usage Frequency

Variables		Frequency	Percent %
Usage frequency	Once a month or less	28	10.4
	2-3 times a month	57	21.1
	1-2 times a week	40	14.8
	3-5 times a week	136	50.4
	More than 5 times a week	9	3.3
Total		270	100

APPENDIX 2

SURVEY QUESTIONNAIRE – ENGLISH VERSION

Survey Questionnaire

Survey Questionnaire – English version



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Pengurusan Hotel
dan Pelancongan

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Tel: (+603) 3258 7678
Fax: (+603) 3258 4868**

Dear Respondents,

I am a master's candidate from the Faculty of Hotel and Tourism Management at Universiti Teknologi MARA. For my master's thesis, I am engaging in a research study "Factors Influencing the Usage of Food Delivery Applications Across Generations". I am inviting you to participate in this research study. The survey should take within 15 minutes to complete. Your participation is purely voluntary and there are no risks and obligations in taking part in this study. You are free to withdraw from the research at any time without any consequences.

Therefore, your valuable responses are essential to the usefulness of this research in promoting greater use of FDAs among different age generations. All information collected will be kept strictly confidential by the researcher and not be identified in the reporting of the research.

Your cooperation and support are much appreciated. Thank you.

If you have any inquiries about the research, please contact:

Nurul Syahirah Binti Idris
Master Candidate
Faculty of Hotel and Tourism Management
Universiti Teknologi MARA,
Bandar Puncak Alam, Selangor
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Screening Question

The following statements are the screening questions assessing your eligibility as a respondent for this study.

Items		
Where do you live now?	Klang Valley	Other urban area
I have experienced ordering food and beverages using the food delivery apps (e.g Grab, FoodPanda, Jom Makan and others) within the last six months?	Yes	No

Study Variables

Please choose your level of agreement for each statement below:

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

PERCEIVED EASE OF USE						
NO	STATEMENT	1	2	3	4	5
PEOU1	Learning to use food delivery applications would be easy for me.					
PEOU2	I would find it easy to navigate the menu of food delivery applications.					
PEOU3	In general, food delivery applications are easy to use.					

PERCEIVED USEFULNESS						
NO	STATEMENT	1	2	3	4	5
PU1	Using food delivery applications enables me to find nearby food more quickly than buying at a restaurant.					
PU2	Using food delivery applications enables me to get my food faster than buying it at a restaurant.					
PU3	Using food delivery applications saves my time, which in turn improves my productivity in completing other daily tasks.					

VISIBILITY						
NO	STATEMENT	1	2	3	4	5
V1	All my friends are using food delivery applications.					
V2	I have seen others use food delivery applications frequently.					
V3	I saw various promotional materials for food delivery applications, which influenced my decision to use them.					

AFFORDANCE VALUE						
NO	STATEMENT	1	2	3	4	5
AV1	I would use food delivery applications more often if they reduced the delivery charges.					
AV2	I would use food delivery applications more often if better promotional incentives were offered.					
AV3	I would use food delivery applications more often if they reduced the delivery time.					

TRUST IN APPLICATION PLATFORM						
NO	STATEMENT	1	2	3	4	5
TR1	I believe food delivery applications keep customers' interests in mind.					
TR2	The information provided by the food delivery applications is reliable.					
TR3	I prefer food delivery applications because they provide a safer option compared to dining at a restaurant, with reduced personal contact and secure food packaging.					

ACTUAL USAGE						
NO	STATEMENT	1	2	3	4	5
AU1	I bought the food of my choice from food delivery applications.					
AU2	I bought from food delivery applications because they follow hygiene and safety protocols.					
AU3	I used food delivery applications frequently.					

Demographic Profile

1. Gender

- ☐ Male
- ☐ Female

2. Age

- ☐ 18-25
- ☐ 26-30
- ☐ 31-35
- ☐ 36-40
- ☐ 41-45
- ☐ 46-50
- ☐ 50-60
- ☐ 61 and above

3. Academic Level

- ☐ No formal education
- ☐ Primary school
- ☐ Secondary school
- ☐ Tertiary education
- ☐ Others

4. Occupation

- ☐ Employed Citizen- Government Sector
- ☐ Employed Citizen- Private Sector
- ☐ Self-employed citizen
- ☐ Retired
- ☐ Unemployed
- ☐ Student

5. Monthly Income

- ☐ Less than RM1,500
- ☐ RM 1,501 – RM 2,500
- ☐ RM 2,501 – RM 5,000
- ☐ RM 5,001 – RM 7,500
- ☐ RM 7,501 – RM 10,000
- ☐ More than RM 10,000
- ☐ No salary

6. Marital Status

- ☐ Single
- ☐ Married
- ☐ Divorced or separated

7. Usage Frequency

- ☐ Once a month or less
- ☐ 2-3 times a month
- ☐ 1-2 times a week
- ☐ 3-5 times a week
- ☐ More than 5 times a week

APPENDIX 3

Survey Questionnaire

Survey Questionnaire – Malay Version



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Fax: (+603) 3258 4868**

Responden yang dihormati,

Saya adalah calon Master dari Fakulti Pengurusan Hotel dan Pelancongan di Universiti Teknologi MARA, Cawangan Selangor. Untuk tesis master, saya terlibat dalam kajian penyelidikan mengenai "Faktor Penggunaan Aplikasi Penghantaran Makanan Mengikut Generasi".

Saya menjemput anda untuk mengambil bahagian dalam kajian penyelidikan ini. Tinjauan ini hanya mengambil masa selama 15 minit untuk diselesaikan. Penyertaan anda adalah secara sukarela dan tiada ada risiko dan kewajiban untuk mengambil bahagian dalam kajian ini. Anda bebas menarik diri dari penyelidikan pada bila-bila masa.

Oleh yang demikian, maklum balas berharga anda adalah sangat mustahak untuk kegunaan dalam penyelidikan ini dalam mempromosikan penggunaan robot yang lebih meluas di restoran di seluruh negara. Semua maklumat yang dikumpul akan dirahsiakan oleh penyelidik dan tidak dikenal pasti dalam pelaporan penyelidikan.

Kerjasama dan sokongan anda amat dihargai.

Sekian, terima kasih.

Sekiranya anda mempunyai sebarang pertanyaan mengenai penyelidikan ini, sila hubungi:

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Calon Master
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Soalan Saringan

Pernyataan berikut merupakan soalan saringan bagi menilai kelayakan anda sebagai responden dalam kajian ini.

Items		
Dimanakah anda menetap sekarang?	Lembah Klang	Kawasan bandar lain-lain
Saya mempunyai pengalaman memesan makanan dan minuman menggunakan perkhidmatan penghantaran makanan (contohnya: Grab, FoodPanda, JomMakan dan lain-lain) dalam enam bulan terakhir.	Ya	Tidak

Study Variables

Please choose your level of agreement for each statement below:

Sangat Tidak Setuju	Tidak setuju	Tidak Pasti	Setuju	Sangat Bersetuju
1	2	3	4	5

PERSEPSI TERHADAP KEMUDAHAN PENGGUNAAN						
NO	STATEMENT	1	2	3	4	5
PEOU1	Belajar menggunakan aplikasi penghantaran makanan adalah mudah bagi saya.					
PEOU2	Saya rasa mudah untuk menavigasi menu aplikasi penghantaran makan.					
PEOU3	Secara umumnya, aplikasi penghantaran makanan mudah digunakan.					

PERSEPSI TERHADAP KEGUNAAN						
NO	STATEMENT	1	2	3	4	5
PU1	Menggunakan aplikasi penghantaran makanan membolehkan saya mencari makanan berdekatan dengan lebih cepat berbanding membeli di restoran.					
PU2	Menggunakan aplikasi penghantaran makanan membolehkan saya mendapatkan makanan saya dengan lebih cepat daripada membelinya di restoran.					
PU3	Menggunakan aplikasi penghantaran makanan menjimatkan masa saya serta memudahkan saya dalam menjalankan tugas harian saya.					

TAHAP KETERLIHATAN						
NO	STATEMENT	1	2	3	4	5
V1	Semua rakan-rakan saya menggunakan aplikasi penghantaran makanan.					
V2	Saya kerap melihat orang lain menggunakan aplikasi penghantaran makanan.					
V3	Saya melihat pelbagai bahan promosi untuk aplikasi penghantaran makanan dan ianya telah mempengaruhi keputusan saya untuk menggunakannya.					

NILAI KEBERFUNGSIAN						
NO	STATEMENT	1	2	3	4	5
AV1	Saya akan menggunakan aplikasi penghantaran makanan dengan lebih kerap jika mereka mengurangkan caj penghantaran.					
AV2	Saya akan menggunakan aplikasi penghantaran makanan dengan lebih kerap jika mereka menawarkan insentif promosi yang lebih baik.					
AV3	Saya akan menggunakan aplikasi penghantaran makanan dengan lebih kerap jika mereka mengurangkan masa penghantaran.					

KEPERCAYAAN TERHADAP PLATFORM APLIKASI						
NO	STATEMENT	1	2	3	4	5
TR1	Saya percaya aplikasi penghantaran makanan mengambil berat tentang minat pelanggan.					
TR2	Maklumat yang diberikan oleh aplikasi penghantaran makanan boleh dipercayai.					
TR3	Saya lebih suka aplikasi penghantaran makanan kerana saya fikir ia menyediakan pilihan yang lebih selamat berbanding makan di restoran kerana penjarakan sosial dan pembungkusan makanan yang lebih selamat.					

PENGUNAAN SEBENAR						
NO	STATEMENT	1	2	3	4	5
AU1	Saya membeli makanan pilihan saya melalui aplikasi penghantaran makanan.					
AU2	Saya berniat untuk membeli makanan melalui aplikasi penghantaran makanan kerana mereka mengikut protokol kebersihan dan keselamatan.					
AU3	Saya kerap menggunakan aplikasi penghantaran makanan.					

Profil Demografi

1. Jantina

- ☐ Lelaki
- ☐ Perempuan

2. Umur

- ☐ 18-25
- ☐ 26-30
- ☐ 31-35
- ☐ 36-40
- ☐ 41-45
- ☐ 46-50
- ☐ 50-60
- ☐ 61 dan keatas

3. Tahap Akademik

- ☐ Tiada pendidikan formal
- ☐ Sekolah rendah
- ☐ Sekolah menengah
- ☐ Pendidikan tinggi
- ☐ Lain-lain

4. Pekerjaan

- ☐ Pekerja sektor kerajaan
- ☐ Pekerja sektor swasta
- ☐ Bekerja sendiri
- ☐ Bersara
- ☐ Tidak bekerja
- ☐ Pelajar

5. Pendapatan Bulanan

- ☐ Kurang daripada RM1,500
- ☐ RM 1,501 – RM 2,500
- ☐ RM 2,501 – RM 5,000
- ☐ RM 5,001 – RM 7,500
- ☐ RM 7,501 – RM 10,000
- ☐ Lebih daripada RM 10,000
- ☐ Tiada pendapatan

6. Status Perkahwinan

- ☐ Bujang
- ☐ Berkahwin
- ☐ Berceraai atau berpisah

7. Kekerapan penggunaan perkhidmatan penghantaran makanan

- ☐ Sebulan sekali atau kurang
- ☐ 2-3 kali sebulan
- ☐ 1-2 kali seminggu
- ☐ 3-5 kali seminggu
- ☐ Lebih daripada 5 kali seminggu

APPENDIX 4

RESEARCH ETHIC FORM

www.uitm.edu.my	
 UNIVERSITI TEKNOLOGI MARA	Pejabat Timbalan Naib Canselor (Penyelidikan dan Inovasi)
Reference : 600-TNCPI (5/1/6)	
Our reference : REC/07/2024 (PG/MR/298)	
Date : 1445H محرم 12 18 July 2024	
Ms Nurul Syahirah Idris - 2023142199 (Supervisor: Ts. Dr Noradzhar Baba) Faculty of Hotel and Tourism Management UiTM Campus Puncak Alam 42300 Bandar Puncak Alam SELANGOR	
and Greetings سلام عليكم ورحمة الله وبركاته	
Ms	
APPROVAL LETTER - UiTM RESEARCH ETHICS COMMITTEE	
Thank you for submitting your research proposal to the Research Ethics Committee (REC). After considering your application, the Committee approved your proposal titled "Factors Influencing Usage of Food Delivery Apps Across Various Age Generations" in the Klang Valley. Details of the approval are as follows:	
Ref. number:	REC/07/2024 (PG/MR/298)
Approval Period:	18 July 2024 until 10 March 2025
Authorised personnel:	1. Nurul Syahirah Idris 2. Ts. Dr Noradzhar Baba 3. Dr Muhammad Safuan Abdul Latip
The UiTM Research Ethics Committee operates in accordance to the ICH Good Clinical Practice Guidelines, Malaysian Good Clinical Practice Guidelines and the Declaration of Helsinki. The approval of this project is conditional upon your continuing compliance with these guidelines and declaration.	
We draw to your attention the requirement that a report on this research, must be submitted every 12 months from the date of the approval or on the completion of the project, whichever occurs first. Failure to submit reports will result in withdrawal of consent for the project to proceed. Amendments, if any, to the study documents are to be submitted to the REC for approval.	
If you require further information, please contact the REC Secretariat at 03-5544 2846/2794 or email at recsecretariat@uitm.edu.my.	
اوسها، تقوى، موليا "MALAYSIA MADANI" "BERKHIDMAT UNTUK NEGARA"	
Yours sincerely,	
	
(EMERITUS PROFESSOR/DATO' DR RAYMOND AZMAN ALI) Chairman UiTM Research Ethics Committee	
c.c.: Deputy Dean (RI), Faculty of Hotel and Tourism Management, UiTM	
Universiti Teknologi MARA Aras 3, Bangunan Wawasan 40450 Shah Alam, Selangor, MALAYSIA Tel: (+603) 5544 2004/2255 Faks: (+603) 5544 2070	
 ISO 9001:2015 No. Sijil: 10120156 UITM di hatiku	

APPENDIX 5
CERTIFICATE OF PROOFREAD

EDITORIAL CERTIFICATE

This is to certify that the paper titled

**FACTORS INFLUENCING THE USAGE OF FOOD
DELIVERY APPLICATIONS ACROSS GENERATIONS**

written by

NURUL SYAHIRAH IDRIS

Faculty of Hotel and Tourism Management, Universiti Teknologi
MARA (UiTM) Selangor, Puncak Alam Campus

under the supervision of

TS. DR. NORADZHAR BABA

DR. MUHAMMAD SAFUAN ABDUL LATIP

has been professionally proofread and edited for clarity, grammar, sentence structure, punctuation, spelling, and academic style. The research content and authors' original intentions were not altered, and any revisions were made solely to improve language quality. The authors retain the right to accept or reject suggested changes.

Issued by



30 August 2025

AUTHOR'S PROFILE



Nurul Syahirah Binti Idris obtained a Diploma in Foodservice Management in 2017 from Universiti Teknologi MARA (UiTM), Permatang Pauh. Then she received a Bachelor of Science (Hons.) in Foodservice Management in 2019 from Universiti Teknologi MARA (UiTM) Dungun. Her master's thesis title 'Factors Influencing The Usage of Food Delivery Applications Across Generations'.

LIST OF PUBLICATIONS:

- Idris, N. S., Abdul Latip, M. S., & Baba, N. (2024). Cultivating usage and word-of-mouth in food delivery applications: A conceptual study. *Voice of Academia*, 20(2), 245–258. <https://www.researchgate.net/publication/382694164>
- Idris, N. S., Abdul Latip, M. S., & Baba, N. (2024). Investigating the impact of affordance value and trust on the usage of food delivery applications: A conceptual study. *Journal of Tourism, Hospitality and Environment Management*, 7(30), 238–250.