EXAMINING THE IMPACT OF ARTIFICIAL INTELLIGENCE ADOPTION ON IMPROVING USER EXPERIENCES OF MOBILE E-COMMERCE

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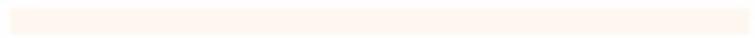
EXAMINING THE IMPACT OF ARTIFICIAL INTELLIGENCE ADOPTION ON IMPROVING USER EXPERIENECES OF MOBILE E-COMMERCE

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LIST OF ABBREVIATIONS

DV	Dependent Variable
IV	Independent Variable
AI	Artificial Intelligence
TAM	Technology Acceptance Model
AIE	Artificial Intelligence Experience
US	User Perception
CB	Customer Behavior
PIOSD	Perceived Impact On Sustainable Development
TIAT	Trust in AI Technology
SPSS	Statistical Package for Social Science
H	Hypothesis

LIST OF SYMBOLS

%	Percent
>	More Than
<	Less Than
=	Equal
&	And
N	Population Size
H	Hypothesis
S	Sample Size
α	Cronbach's Alpha

ABSTRAK

Kajian ini menyelidiki penilaian menyeluruh tentang kesan penggunaan kecerdasan buatan (AI) ke atas meningkatkan dan memperhalusi pengalaman pengguna dalam e-dagang mudah alih. Tumpuan utamanya adalah untuk meneliti dengan teliti kesan dan kesan penyepaduan teknologi AI, terutamanya dalam konteks platform mudah alih, untuk menentukan kesan yang boleh dilihat pada keseluruhan paradigma pengalaman pengguna. Objektif utama kajian ini adalah untuk menentukan hubungan antara persepsi pengguna, tingkah laku pengguna, kesan kesan terhadap pembangunan mampan dan kepercayaan terhadap teknologi AI dalam kalangan responden rawak di Malaysia. Sebanyak 140 soal selidik telah dikumpulkan seterusnya. Menggunakan alat SPSS yang mengandungi analisis deskriptif, kebolehpercayaan, dan analisis korelasi Spearman telah dijalankan. Keputusan menunjukkan bahawa telah disahkan bahawa terdapat hubungan positif dan signifikan antara persepsi pengguna, tingkah laku pengguna, kesan yang dirasakan terhadap pembangunan mampan dan kepercayaan terhadap teknologi AI dalam kalangan responden rawak di Malaysia. Kajian ini mempunyai implikasi terhadap perniagaan, pengalaman pengguna, kepercayaan dan tingkah laku pengguna. Penyelidikan ini bertindak sebagai panduan strategik, menavigasi persimpangan inovasi teknologi dan perdagangan mampan, menawarkan pemahaman yang tepat tentang dinamik rumit yang sedang dimainkan.

Kata kunci: *kecerdasan buatan, pengalaman pengguna, e-dagang mudah alih, tingkah laku pengguna, penggunaan teknologi AI*

ABSTRACT

This study delves into a comprehensive evaluation of the impact of artificial intelligence (AI) adoption on enhancing and refining user experiences in mobile e-commerce. Its primary focus is on meticulously scrutinizing the ramifications and effects of integrating AI technologies, particularly in the context of mobile platforms, to determine the discernible impact on the overall user experience paradigm. The main objective of this study is to determine the relationship between user perception, consumer behaviour, perceived impact on sustainable development and trust in AI technology among random respondents in Malaysia. A total of 140 questionnaires were collected subsequently. Using SPSS tools containing descriptive analysis, reliability, and Spearman correlation analysis were carried out. The result shows that it has been confirmed that there are positive and significant relationships between user perception, consumer behaviour, perceived impact on sustainable development and trust in AI technology among random respondents in Malaysia. This study has implications for businesses, consumers' experience, trust, and consumer behaviour. This research acts as a strategic guide, navigating the intersection of technological innovation and sustainable commerce, offering a precise understanding of the intricate dynamics at play.

Keywords: *artificial intelligence, user experiences, mobile e-commerce, consumer behaviour, AI technology adoption*

CHAPTER 1
INTRODUCTION

1.1 Background of the Study

The rapid evolution of artificial intelligence (AI) technology has profoundly reshaped various sectors of the economy, notably leaving a significant impact on the mobile e-commerce market. As consumers increasingly rely on mobile devices for seamless access and purchases, mobile e-commerce has emerged as a crucial component of modern business (Goralski, M. A., & Tan, T. K. (2020)). This transformation is particularly evident in the integration of AI into mobile e-commerce, introducing a diverse array of innovations geared towards enhancing user experiences. From improved supply chain management to personalized product recommendations and chatbots, the adoption of artificial intelligence is at the forefront of improving user experiences in mobile e-commerce.

This research seeks to delve into the extensive influence of AI technology on the sustained growth of mobile e-commerce, emphasizing the industry's financial and social components while placing a specific focus on its impact on user experiences. The intricate connection between the development of mobile e-commerce and advancements in various technology fields, primarily driven by the proliferation of smartphones and enhanced mobile internet access, underscores the shift towards m-commerce. This transition empowers consumers to shop on-the-go, access instant information, and engage with businesses through diverse applications and websites (Kourouthanassis, P. E., & Giaglis, G. M. (2012)). The centrality of mobile devices in our daily lives underscores the importance of the research topic, aligning with the overarching theme of Artificial Intelligence Adoption on Improving User Experiences on Mobile E-Commerce.

However, the triumph of mobile e-commerce has presented novel challenges in managing the substantial volume of transactions, data, and interactions on mobile platforms

(Akter, S., and Wamba, S. F. (2016)). In response to this complexity, artificial intelligence has emerged as a transformative force, encompassing machine learning, natural language processing, computer vision, and data analytics. These technologies collectively contribute to enhancing the efficiency and efficacy of mobile e-commerce procedures. The research positions AI as the umbrella term that encapsulates these transformative technologies, acknowledging its pivotal role in improving user experiences and shaping the future of mobile e-commerce.

1.2 Problem Statement

In the rapidly evolving landscape of mobile e-commerce, the study focuses on user perceptions of artificial intelligence (AI) technology, aiming to comprehend its impact on user experiences. As artificial intelligence becomes increasingly integrated into mobile e-commerce platforms, the research seeks to investigate how users perceive AI technology and whether these perceptions influence their engagement in online shopping behaviors, with a specific focus on Artificial Intelligence Adoption on Improving User Experiences on Mobile E-Commerce.

The application of artificial intelligence in mobile e-commerce platforms holds the potential to significantly shape consumer behavior. Through a comprehensive analysis of consumer choices, preferences, and decision-making processes within these platforms, the study aims to provide valuable insights into how AI influences various aspects, including user experiences, and its potential for improving the overall shopping journey in the mobile e-commerce domain.

Trust emerges as a fundamental factor in the successful adoption of AI in mobile e-commerce. Understanding the level of trust users place in AI systems becomes crucial, influencing their willingness to rely on AI-driven recommendations and decision support. Therefore, investigating the factors that shape trust in AI technology remains essential for

ensuring a positive user experience, with a particular emphasis on Artificial Intelligence Adoption on Improving User Experiences on Mobile E-Commerce.

The perceived impact of artificial intelligence technology on mobile e-commerce is a complex and multifaceted aspect that necessitates in-depth examination. It is imperative to assess how users and stakeholders perceive AI's contributions, including its environmental, economic, and social dimensions. Understanding these perceptions will offer valuable insights into the real and potential impacts of AI in driving various practices within the mobile e-commerce sector, with a primary focus on enhancing user experiences.

1.3 Research Objectives

The aim of this research is to examine the impact of artificial intelligence integration on the sustainable development of mobile e-commerce.

1. To examine the relationship between user perception and AI integration experience.

2. To examine the relationship between consumer behavior and AI integration experience.

3. To examine the relationship between trust in AI technology and AI integration experience.

4. To examine the relationship between perceived impact on sustainable development and AI integration experience.

1.4 Research Questions

1. Is there any significant relationship between user perception and AI integration experience?

2. Is there any significant relationship between consumer behavior and AI integration experience?

3. Is there any significant relationship between trust in AI technology and AI integration experience?

4. Is there any significant relationship between perceived impact on sustainable development and AI integration experience?

1.5 Scope of Study

This research will be focusing on examining the impact of artificial intelligence integration on the sustainable development of mobile e-commerce. The mobile e-commerce platforms we are going to do research with are Shopee, Lazada, and the newly launched online shopping by media social platform, TikTok, TikTok Shop. This research was involved 120 random respondents.

1.6 Significance of the Study

To comprehensively investigate the dimensions influencing artificial intelligence adoption and its impact on improving user experiences in mobile e-commerce, various aspects, including user perception, consumer behavior, trust in AI technology, and perceived impact, will be examined. This overarching aim sets the stage for a detailed exploration of how these factors interplay in the context of AI integration, contributing to a nuanced understanding of the broader implications and applications of artificial intelligence technologies in the mobile e-commerce landscape.

The research findings have the potential to influence businesses and policymakers to prioritize initiatives in response to the preferences and behaviors of university students. Business practices, influenced by the insights derived from this research, can benefit the environment and enhance the community's quality of life by supporting local economies, reducing waste, and promoting social responsibility.

The industry, particularly the mobile e-commerce sector, stands to gain significantly from this research. By understanding the interplay between AI technology and preferences among university students, businesses can tailor their strategies and offerings to align with consumer preferences. This insight can result in more efficient supply chain management,

product development, and marketing efforts that cater to the student demographic with a focus on AI adoption and its impact on improving user experiences in mobile e-commerce.

The research on AI's impact on preferences in mobile e-commerce among university students contributes to the body of knowledge in several ways. It sheds light on the ever-evolving intersection of technology, user experiences, and consumer behaviour. The findings expand our understanding of the role of AI in shaping the future of commerce, offering insights that can guide future research endeavours.

1.7 Definition of Term

1.7.1 Mobile E-commerce

Mobile e-commerce, often abbreviated as "m-commerce," refers to the buying and selling of goods and services using mobile devices such as smartphones and tablets. It involves online commercial transactions that are conducted over wireless networks and mobile internet connections, allowing users to shop, make payments, and complete various e-commerce activities through mobile applications or mobile-optimized websites. Mobile e-commerce offers consumers the convenience of shopping and conducting financial transactions on-the-go, making it an integral part of the broader e-commerce ecosystem. This form of e-commerce has become increasingly popular as mobile devices have become more accessible and as mobile applications and websites offer user-friendly and secure platforms for shopping and conducting business online.

1.7.2 Artificial Intelligence

Artificial intelligence (AI) refers to the development of computer systems and software that can perform tasks that typically require human intelligence. These tasks may include problem-solving, learning from experience, understanding natural language, recognizing patterns, and making decisions. AI systems are designed to analyse and process large amounts of data, adapt to new information, and, in some cases, exhibit a degree of autonomy in their

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decision-making processes. AI encompasses a wide range of techniques and technologies, such as machine learning, deep learning, natural language processing, and computer vision, all aimed at creating intelligent machines that can simulate human-like cognitive functions.

1.7.3 Consumer Behaviour

Consumer behaviour refers to the study of the processes and activities that individuals, groups, or organizations engage in when searching for, purchasing, using, evaluating, and disposing of products and services. It encompasses the various factors and influences that shape how consumers make decisions, including their motivations, preferences, perceptions, attitudes, and reactions to marketing strategies. Consumer behaviour analysis seeks to understand why and how consumers choose certain products or services, as well as how they are influenced by factors like culture, social norms, personal values, advertising, and economic conditions. This understanding is crucial for businesses and marketers in tailoring their products, services, and marketing efforts to meet the needs and preferences of their target audiences effectively.

1.8 Organization of the Proposal

Chapter 1 provides examples of the research goal, questions, problem statement, and study significance. The literature review will be completed in Chapter 2 by providing a summary and description of previous research conducted by other scholars, along with theoretical models, conceptual frameworks, and hypothesis statements. The third chapter delves deeper into six sections, including data collection, sampling design, data analysis, and research instrument. Furthermore, chapter four provides an interpretation of IBM SPSS Statistics 22 data. Chapter five will contain a summary of the entire study, recommendations for further research, limitations, and potential policy implications.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Kashive, K. (2020) defines user perception as how people understand and make meaning of the things they encounter when using a system, service, or product. It includes the views, sentiments, and subjective experiences that people form as a result of their encounters with a certain entity. The idea of user perception is complex and impacted by many different elements, such as overall user experience, design, usability, functionality, and aesthetics. Emotionally engaging design, efficient functioning, and smooth, intuitive interactions all contribute to a positive user experience. Conversely, unsatisfying user experiences, poor usability, and unclear interfaces may all lead to bad user impression. It is important for designers, developers, and companies to comprehend user perception in order to provide goods and services that satisfy consumers and promote user pleasure, loyalty, and the overall success of the offering. Therefore, in the iterative process of user-centered design, where continuous input and modification assist align the product with user expectations and preferences, user perception is a crucial factor to take into account.

According to Rondi, L. (2022), consumer behavior is the study of the procedures and actions people take to find, choose, buy, use, and assess goods and services in order to fulfill their needs and desires. It explores the various aspects of psychology, society, culture, and economy that affect how consumers make decisions. Businesses need to understand customer behavior in order to predict and adapt to the changing needs and desires of their target market. A wide range of factors, including social influences, brand perception, personal preferences, and economic concerns, are crucial in determining how consumers behave. Marketers frequently use a variety of techniques, including segmentation, advertising, and market research, to better understand customer behavior and develop products and services that successfully satisfy their needs.

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As per Woolley, A. W. (2020), trust in artificial intelligence technology pertains to people's conviction and assurance regarding the dependability, efficiency, and moral application of AI systems. Trust plays a critical role in the acceptance and adoption of AI applications as they are progressively incorporated into our daily lives. AI trust is based on a number of essential components. First and foremost, openness is required. When users comprehend how AI systems operate, including the methods and data sources involved, they are more inclined to trust them. Transparent AI systems enable users understand the reasoning behind AI-generated outputs by offering insights into decision-making processes. Additionally, the design of the user interface and user experience affect AI trust. Positive impressions and increased confidence in technology are fostered by intuitive interfaces, clear communication, and user-friendly interactions.

According to Chen, P. X. (2021), perceived impact on sustainable development is the subjective judgment people or communities make about how a certain action, policy, or initiative will affect the long-term health of the economy, the environment, and society. The goal of sustainable development is to satisfy current demands without affecting the capacity of future generations to satisfy their own. Numerous elements are taken into account when assessing the perceived influence on sustainable development, such as social, economic, and environmental aspects. People can evaluate an initiative's perceived impact by considering how well it tackles environmental preservation, social justice, and financial stability. For instance, if the development of a renewable energy plant lessens the need for non-renewable resources and slows down environmental deterioration, the community may see it favorably. In a similar vein, social initiatives that advance healthcare and education may be perceived as having a good influence on sustainable development by improving a society's inclusion and general well-being.

In this chapter, both Independent Variables (IV) and Dependent Variables (DV) are

covered. The Dependent Variables is AI integration Experience. The Independent Variables such as user perception, the consumer behavioral, the trust in AI technology and perceived impact on sustainable development. Furthermore, based on the researcher framework which is the impact of AI intelligence adoption on improving user experience on mobile e-commerce the researchers will discuss independent and dependent variables in even more detail in this chapter.

2.2 Underpinning Theory

2.2.1 Technology Acceptance Model (TAM)

A few theoretical frameworks can direct the examination of important variables when examining the effects AI adoption experiences. Davis developed the Technology Acceptance Model (TAM) in 1989 to shed light on how people view and embrace technology. It makes the argument that attitudes, and subsequent technology use are strongly influenced by how easy and beneficial something is perceived to be. The Unified Theory of Acceptance and Use of Technology (UTAUT), which builds on TAM, broadens our understanding of the factors influencing consumer behaviour towards AI integration by including elements such as performance expectancy, effort expectancy, social influence, and facilitating conditions.

Figure 2.1: Technology Acceptance Model (TAM)
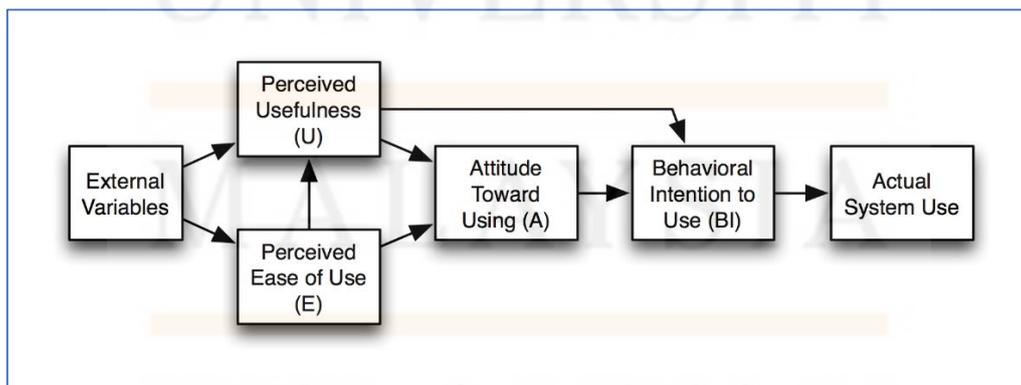
The Technology Acceptance Model (TAM) is a conceptual model that has been widely studied in the literature to help researchers understand users' intentions when they embrace new

information systems in their daily lives (Davis, 1989). The Technology Acceptance Model (TAM) was first presented by Davis and serves as a theoretical framework for information services. It provides insights into how consumers accept and use certain technologies (Dauda et al., 2015). Dauda et al. (2015) claim that TAM is essential for shedding light on the decision-making processes connected to the adoption of new technologies and offers academics a thorough model for examining consumers' acceptance and usage intentions of these technologies. The importance of TAM is further highlighted by Aydin et al. (2016), who point out that it is a widely accepted paradigm with noteworthy expansions in scholarly study.

TAM stands out as being especially well-suited for making judgments on the acceptance of emerging technologies, as explained by Aydin et al. (2016). It may be used to analyse user approval and intention to utilize new technologies in detail. The theory is a useful tool for academics traversing the complicated landscape of technology adoption because of its flexibility and resilience, which enable a detailed understanding of users' attitudes and actions in the face of changing information systems.

Trust plays a pivotal role in the adoption of technology. Trust theories, such as Mayer et al.'s Organizational Trust Theory or Lee and Turban's Trust in Automation, can offer valuable insights into how trust in AI technology impacts its acceptance and usage among students. Additionally, considering the broader societal implications, theories related to sustainability and technology, such as the Triple Bottom Line theory (focusing on people, planet, profit) or the Sustainable Development Goals (SDGs) framework, become relevant in understanding the perceived impact of AI integration on sustainable development.

The Innovation Diffusion Theory, developed by Rogers, provides a lens through which one can study the diffusion of AI integration among students. This theory explains how innovations are communicated and adopted within a social system, offering a framework to analyse how perceptions and behaviours regarding AI integration evolve over time among

UMK FKP's student population.

Furthermore, the Social Cognitive Theory, developed by Bandura, is instrumental in exploring the influence of social factors on individual learning and behaviour. This theory can be applied to investigate how students' perceptions and behaviours towards AI integration are shaped through the observation of others' experiences within the academic community.

In combining these theories, researchers can construct a robust framework that comprehensively examines the multifaceted aspects of AI adoption on improving user experience on mobile e-commerce encompassing user perceptions, behavioural influences, trust dynamics, sustainability considerations, diffusion patterns, and social learning factors.

2.3 Previous Studies

2.3.1 AI Integration Experience

The result variable in this study is the dependent variable, "AI integration experience," which measures how comfortable, familiar, and interactive are with the incorporation of artificial intelligence (AI) technology into the field of mobile e-commerce. According to Chen (2022), this variable considers several factors, such as how students engage with AI-driven features in e-commerce apps, how comfortable they are using the technology, and how they perceive AI's influence on their purchasing experiences. Additionally, Zhou (2020) goes into more detail on the many aspects of AI integration experiences, emphasizing the significance of these aspects in determining user happiness. These aspects include familiarity, comfort, simplicity of use, and the sense of utility.

According to Bingley (2023), an understanding of how people perceive and adjust to AI-driven aspects in particular systems or situations is facilitated by the idea of AI integration experience. According to Lee (2022), this comprehension is essential as it is critical to the acceptability and success of AI technology in a variety of applications, mobile e-commerce being one prominent example. Researchers and practitioners may get insights into user attitudes

towards AI integration and find areas for improvement by measuring AI integration experience. This information can then be used to guide the development and optimization of AI-driven systems going forward.

2.4 Hypothesis Statement

2.4.1 User Perception

In the context of e-commerce, user perception plays a critical role in the adoption and acceptance of AI technology. According to Thamik (2022), consumers' opinions about chatbots, customization, and AI-driven suggestions have a big impact on how integrated they feel. This is consistent with research by Ingaldi (2019), who claimed that while negative user views might function as barriers, favourable user perceptions often improve AI integration experiences. Numerous research works have examined the variables that influence users' opinions, including perceived value, perceived utility, and ease of use of AI-powered features.

Wang (2023) and Faccia (2023) have highlighted the critical role of user perception, particularly when it comes to AI-powered mobile e-commerce systems that incorporate sustainability features. While negative impressions can hinder adoption and undermine faith in these technologies, positive perceptions not only encourage greater adoption but also generate support for sustainable behaviours. Thus, for AI technology to be successfully integrated into mobile e-commerce platforms with a sustainability focus, it is critical to comprehend and address user perception. A healthy cohabitation of AI with sustainable practices is made possible by this knowledge, which enables businesses and organizations to adjust their strategies and communication to better match with the values and expectations of users.

H1: There is a significant relationship between AI integration experience and user perception.

2.4.2 Consumer Behaviour

Within the framework of mobile e-commerce and artificial intelligence (AI) technologies, "consumer behaviour" refers to the diverse range of choices, behaviours, and

decision-making processes that customers make. According to Xie's findings, these behaviours take place when customers engage with sustainable practices and interact with AI-driven systems in the context of mobile e-commerce (2023). According to Wu (2022), artificial intelligence (AI) technology has a significant impact on customer behaviour in mobile e-commerce. The ability of AI to improve the customization of product suggestions and offer a more seamless shopping experience is indicative of its influence.

Moreover, Khan's (2022) research on consumer behaviour explores the ways in which AI-powered features in mobile e-commerce platforms influence many aspects of customer decision-making. These consist of the choices consumers make on what to buy, how frequently they use mobile e-commerce platforms, and the items they choose. Investigating these variables is essential for developing product ideas, marketing plans, and sustainability programs for companies and online retailers. In the end, observing and reacting to customer interactions with AI-driven systems may provide insightful information on how to adjust and satisfy their needs, thereby promoting the fusion of AI with environmentally friendly business practices in the mobile e-commerce industry.

H2: There is a significant relationship between AI integration experience and customer behaviour.

2.4.3 Perceived Impact on Sustainable Development

Ahmad (2023) emphasizes that researching the effects of artificial intelligence (AI) on mobile e-commerce and sustainable development is an important and developing field of study. Artificial Intelligence (AI) has great promise for improving corporate operations through its ability to streamline logistics, enhance supply chain management, lower energy usage, and promote more environmentally friendly business practices. Research is being done to find out how students view AI's contribution to sustainability and how this influences how they integrate AI into mobile e-commerce.

Micu (2021) correctly notes that "Perceived Impact" is crucial when discussing how

AI technology affects sustainable development in mobile e-commerce. It includes the opinions of users, companies, and other relevant parties about the implications and outcomes of integrating AI in the goal of sustainability. The way that attitudes and decisions are made about the adoption and support of sustainable practices in e-commerce is significantly shaped by these beliefs.

According to Muntean (2021), it is critical to consider important aspects of this perceived impact, such as stakeholder participation, alignment with long-term sustainability objectives, the holistic view of total sustainability, and the societal impact of AI technology. It is essential to comprehend how different stakeholders see artificial intelligence (AI) in relation to sustainable development to make well-informed decisions, create strategic strategies, and guarantee efficient communication. While a negative view may call for measures to allay worries and improve current procedures, a good perception of AI's influence might encourage increased support for and adoption of AI-powered sustainable practices. To create more accurate impressions among stakeholders and eventually encourage the peaceful coexistence of AI and sustainability in mobile e-commerce, it is important to communicate effectively and report transparently on the concrete effects of AI-driven sustainability efforts.

H3: There is a significant relationship between AI integration experience and perceived impact on sustainable development.

2.4.4 Trust in AI Technology

When it comes to AI technology adoption, trust is essential. Users must have faith that AI-powered systems will safeguard their data and provide reliable suggestions. Research has indicated that a pleasant integration experience and increased adoption rates might result from confidence in AI. Studies can look at what influences AI technology trust and how it impacts UMK FKP students' integration experiences. In the context of sustainable development in mobile e-commerce, Wu, J. (2022) explained that "Trust in artificial intelligence (AI)

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technology" refers to the degree of trust and reliance that customers, companies, and other stakeholders have in AI systems' capacity to promote and support sustainable practices within the mobile e-commerce environment.

According to Han, H. (2023), AI technology cannot successfully be integrated into sustainability-promoting initiatives unless people have faith in it. In this context, data security and privacy, accuracy and dependability, openness, and ethical concerns are some of the most important components of confidence in AI technology. According to Wang, C., establishing and preserving confidence in AI technology is essential to the effective adoption of sustainable practices in mobile e-commerce. User confidence, adoption, and loyalty are all influenced by trust. Companies and e-commerce sites should make the investment to develop AI systems that are ethical, safe, and transparent to show their dedication to sustainability. Furthermore, they ought to actively engage consumers in these endeavours and request their input to consistently enhance confidence and the efficacy of AI-powered sustainable development programs.

H4: There is a significant relationship between AI integration experience and trust in AI technology.

2.5 CONCEPTUAL FRAMEWORK

A conceptual framework serves as the researcher's synthesis of existing literature to elucidate the factors that impact the intention to engage in online shopping. It delineates the insights gained from prior studies, encompassing the perspectives and observations of other researchers. Figure 2.5 user perception, consumer behaviour, perceived impact on sustainable development and trust AI technology as independent variables, AI integration experience are the dependent variables.

Figure 2.5 Conceptual Framework
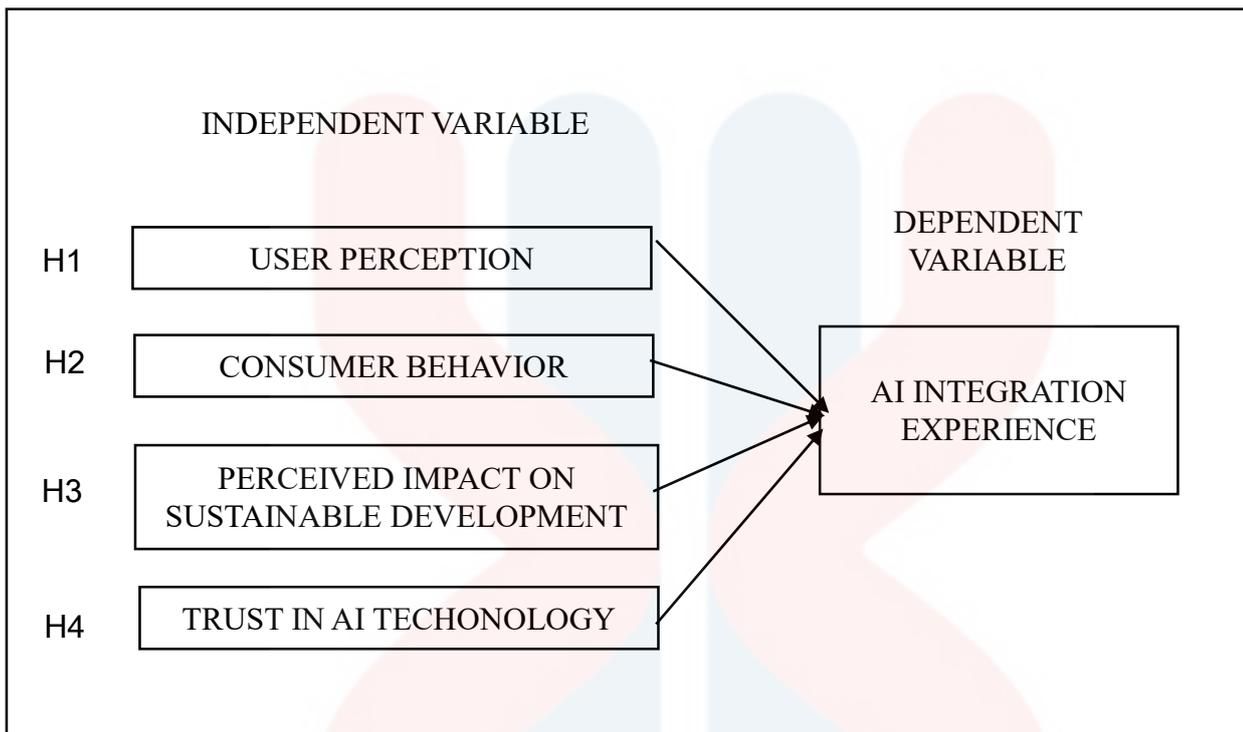
2.6 SUMMARY / CONCLUSION

The dependent variable in this study is "AI integration experience," which gauges how at ease, knowledgeable, and with AI technology in the context of mobile e-commerce. This variable considers variables that have been covered by several academics, including Chen (2022) and Zhou (2020), including how students interact with AI-driven features in e-commerce applications, how comfortable they are using AI technology, and how they perceive AI's impact on their purchasing experiences.

The study investigates a number of correlations between the independent factors and the dependent variable (experience integrating AI), including:

- **AI Integration Experience and User Perception:** The way users perceive AI technology in e-commerce is critical to its adoption. Positive views can boost AI integration experiences, whereas negative perceptions might inhibit them. According to

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Wang (2023) and Thamik (2022), factors affecting user perceptions, such as perceived value and convenience of use, are crucial.

- **AI Integration Experience and Consumer Behavior:** Artificial intelligence (AI) technology has an impact on customer behavior in mobile e-commerce by improving customization and purchasing experiences. As stressed by Xie (2023) and Khan (2022), research into customer behavior aids in understanding how AI-driven features affect purchasing decisions, frequency of usage, and product selections.

- **AI Integration Experience and Trust in AI Technology:** For AI technology to be successfully adopted, trust is necessary. According to Wu (2022) and Han (2023), trust may be developed through data security, dependability, transparency, and ethical concerns. Trust influences user confidence, adoption, and loyalty.

- **AI Integration Experience and Perceived Impact on Sustainable Development:** It is critical to comprehend how AI is considered to affect sustainable development. Stakeholder views about AI's impact on sustainability are included. A number of factors are considered, including social effect, overall sustainability, alignment with long-term sustainability goals, and stakeholder participation. Good opinions foster support for sustainable activities driven by AI, as explained by Muntean (2021) and Ahmad (2023).

To put it briefly, the purpose of this study is to investigate the connections that exist between the AI integration experiences that students have in mobile e-commerce and a number of different variables, such as user perception, consumer behavior, faith in AI technology, and the perceived influence on sustainable development. These connections are essential to comprehending how AI may support sustainable practices and how user attitudes and actions are key factors in the effective integration of AI technology inside the mobile e-commerce space.

CHAPTER 3

RESEARCH METHODS

3.1 Introduction

The procedures or techniques used to identify, select, process, and analyze information about a topic are referred to as research methodology. We thoroughly examine the intricate methods used in data acquisition and analysis within the framework of our rigorous study. In this chapter, we examine the research protocol, the characteristics of the study population, the rationale underlying our sample size determination, the complexities of our chosen sampling technique, the arsenal of research tools used, the precision of our measuring scales, the rigour of our instrument pre-testing procedures, the nuances of data collection, and the intricate landscape of data analysis strategies used to unravel the data.

3.2 Research Design

The research design is a framework for the research methodologies and procedures a researcher chooses to study. The design allows researchers to concentrate on developing research techniques appropriate for the topic and laying the groundwork for successful investigations. A quantitative research design estimated the relationship between the dependent and independent variables. The quantitative approach should be used to analyse raw and numerical data before evaluating it regarding values and variables.

This study will use a quantitative approach for data collection and analysis. The variables are described, their relationships are studied, and their cause-and-effect relationships are determined using this research method. As a result, a set of questionnaires designed and prepared for data collection will be distributed to respondents. This study will employ a quantitative approach to investigate the impact of artificial intelligence adoption on improving user experiences in mobile e-commerce.

3.3 Data Collection Method

Data collection is gathering information from all relevant sources to solve a research problem. Data is essential for any study or systematic collection of observations or measurements. The data collection aimed to determine the impact of artificial intelligence adoption on improving user experiences in mobile e-commerce. The process of gathering data through surveys, interviews, or experiments is primary data collection. The primary data set contains all information collected from the questionnaire of 140 respondents. In addition, a Google Form will be used to distribute a questionnaire.

These questionnaires will be available on the Internet. Google Forms, an Internet software program, will be used to conduct the survey forms. A questionnaire aims to elicit responses from participants about their attitudes, experiences, and perspectives. This method fundamentally incorporates quantitative data collection methods. It is a type of data that has already been collected. It can also help respondents complete the questionnaire without feeling rushed, making it easier to gather results using questionnaire approaches.

3.4 Study Population

The sample is drawn from a selected group of the target respondents known as the study population. Based on the rule of thumb from Roscoe (1975), rules of thumb, which is 'sample sizes larger than 30 and less than 500, are appropriate for most research. This study's population consists of 140 randomly selected Malaysian respondents. These individuals represent a diverse Malaysian population, reflecting the country's various demographics, backgrounds, and geographical distributions. By incorporating this diverse set of respondents, the study aims to capture a comprehensive view of opinions, behaviours, and perspectives relevant to the research objectives within the Malaysian context.

3.5 Sample Size

The sample size is the number of people in the study to represent a population. The sample size refers to the total number of respondents who participate in research, and this

number is frequently divided into sub-groups based on variables such as age, gender, and geography to ensure that the total sample accurately reflects the entire population. Many sampling procedures were used to select the primary respondents to avoid bias in the results. This questionnaire will be distributed to 140 randomly selected respondents.

3.6 Sampling Technique

A sampling technique is a specific term for selecting entities to include in a sample. This study chose a non-probability sampling method, which was divided into four subtypes: convenience sampling, quota sampling, snowball sampling, and sampling, as well as judgmental sampling. The sampling method at a person's convenience is best suited for the investigation in this research paper. The primary goal of this method is to obtain easily obtained information from respondents, and in general, respondents were chosen because they happened to be present in the appropriate location at the proper time.

Convenience sampling is a method in which representatives are chosen randomly based on their accessibility and proximity to the respondent. As a result, this sampling strategy is appropriate for this study and will allow researchers to produce reliable study results. The data collection process is straightforward and readily available. Most convenience sampling considers the current population, and samples are easily accessible to the researcher when gathering data.

3.7 Research Instrument Development

According to Kumar et al. (2013), the study's overarching objectives must illuminate the questionnaire's layout and composition path. The researcher would distribute a built-in questionnaire to the respondents to collect data for this research investigation. As a result, the research tool for this study will be an online survey created with Google Forms.

To collect information from respondents, a questionnaire will be created using Google Forms and distributed via link sharing on social media sites. Online URLs for questionnaires will also need to be transferred to find potential respondents for this study. A survey

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questionnaire was written in Bahasa Malaysia and English to collect the necessary and acceptable data for the investigation. This dual approach to language inclusion broadens the questionnaire's accessibility and inclusiveness. The data collection method, which uses questionnaires, is calibrated to produce quantitative information well aligned with the study's objectives. There are five sections to the survey questions. The demographic information for respondents is requested in section A of the questionnaire.

A set of organized questions, known as a questionnaire, is designed to assist researchers in gathering information from respondents who may differ significantly from one another regarding demographics and other personal characteristics. Section A details the intended respondents' age, gender, race, employment status and other demographic characteristics. Section B investigated the dependent variable, AI integration experience, while Section C investigated the independent variables of user perception, consumer behaviour, perceived impact on sustainable development and trust in AI technology. The measuring technique for this questionnaire is using summated rating scale methodology.

A pilot test was used in this study. The pilot test guides respondents through questionnaires so they can complete them more easily and without problems. A trial run of the questionnaire was conducted to ensure it was suitable for processing. To be more specific, the pilot test will include testing of the research's required subgroups. Thirty questionnaires are being distributed to the intended respondents to conduct a pilot test. After the data has been collected, it will be entered into the Statistical Package for Social Sciences (SPSS) software to determine its reliability.

Table 3.7.1: Overview Questionnaire Design

Section	Factors	References
A	Demographic Profile	
B	AI integration experience	Ingaldi, M., & Ulewicz, R. (2019).

C	• User Perception • Consumer behaviour • Perceived impact on sustainable development • Trust in AI technology	Khan, S., Tomar, S., Fatima, M., & Khan, M. Z. (2022).

Table 3.7.2: Section A (Demographic Profile)

Section	Factor	Content
A	Demographic Profile	• Gender • Age • Race • Employment Status • Primary use of AI integration • AI technology enhancement

Table 3.7.3: Section B (DV- AI Integration Experience)

NO.	ITEM
1.	AI integration has significantly improved the overall user experience in mobile e-commerce platforms, enhancing convenience, personalization, and ease of navigation
2.	AI-driven features and recommendations have positively influenced your purchasing decisions in mobile e-commerce, leading to increased engagement and transactions
3.	AI integration in mobile e-commerce contribute to more sustainable shopping practices by providing eco-friendly product suggestions and promoting responsible consumption
4.	AI integration has reduced the environmental impact of mobile e-commerce activities, such as minimizing unnecessary packaging or encouraging eco-conscious choices

NO.	ITEM
5.	AI-driven mobile e-commerce platforms are more likely to support socially responsible initiatives and ethical business practices, contributing to sustainable economic growth and societal well-being

Table 3.7.4: Section C (IV- User Perception)

NO.	ITEM
1.	AI integration improves mobile e-commerce with personalized recommendations and a seamless shopping experience
2.	AI in mobile e-commerce boosts purchasing decisions, increasing engagement with product and service recommendations.
3.	AI integration fosters sustainable shopping through eco-friendly product promotion and reduced packaging in mobile e-commerce.
4.	AI in mobile e-commerce raises awareness of sustainable products, influencing shopping choices positively
5.	AI in mobile e-commerce aligns with ethical and environmental values, fostering sustainable growth and societal well-being.

Table 3.7.5: Section C (IV- Consumer Behavior)

NO.	ITEM
1.	AI personalization in mobile e-commerce shapes buying decisions and boosts engagement with recommendations and offers.
2.	AI integration improves mobile e-commerce for an efficient and tailored shopping experience.
3.	AI technologies raise awareness of sustainable and socially responsible products in mobile e-commerce shopping.
4.	Does AI integration in mobile e-commerce reduce wasteful consumption and promote sustainability?
5.	AI in mobile e-commerce fosters sustainable growth and responsible consumer behaviour, benefiting the environment and the economy.

Table 3.7.6: Section C (IV- Perceived Impact on Sustainable Development)

NO.	ITEM
1.	AI integration in mobile e-commerce boosts sustainable development by reducing the environmental footprint and promoting responsible consumption.
2.	AI-driven initiatives optimize logistics, reduce energy consumption in mobile e-commerce, and promote sustainable business practices and economic growth.
3.	AI integration enhances mobile e-commerce accessibility and affordability, creating a more inclusive and sustainable marketplace.
4.	AI's personalized mobile e-commerce experiences boost consumer awareness and encourage environmentally responsible choices.
5.	AI integration cultivates social responsibility and ethics in mobile e-commerce, promoting sustainable development.

Table 3.7.7: Section C (IV- Trust in AI Technology)

NO.	ITEM
1.	AI in mobile e-commerce earns trust through accurate recommendations and improved shopping experiences.
2.	AI security measures, like fraud detection and data protection, enhance trust in mobile e-commerce.
3.	AI algorithms responsibly manage personal data, building trust in online shopping privacy.
4.	AI integration ensures trust and security in mobile e-commerce financial transactions.
5.	AI in mobile e-commerce promotes sustainable development and responsible consumer behavior.

3.8 Measurement of the Variable

The scale of measurements refers to the method used by the researcher to measure variables; it influences the types of analytical methods that can be applied to the data and the conclusions that can be drawn from it. According to Kumar et al. (2013), in the realm of research, the spectrum of measurement scale types encompasses four distinct categories:

nominal, ordinal, interval, and ratio. In our research, we use scales to measure things. Getting information in the form of numbers is what measurement entails. A scale is required to assign numbers to things about them. A scale is a tool or system for distinguishing individuals based on differences in the measured variables.

The focus of our investigation. Scaling is creating a smooth surface on which to locate our belongings. Scales are classified into four types: nominal, ordinal, interval, and ratio. This study only employs nominal, ordinal, and interval scales. Previously, researchers used a five-point scale with the following options: strongly agree, agree, neutral, disagree, strongly disagree. Using the five-point Likert scale in the questionnaire, respondents were requested to state answers according to every statement of each variable. Within these sections, respondents had the liberty to select their preferred scale, which spanned from 1 (strongly disagree) to 5 (strongly agree).

Table 3.8: Point Likert scale.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3.9 Procedure for the Data Analysis

As a result, the survey data will be analyzed using SPSS. Each question will be examined separately during descriptive analysis, considering all variables, factors, and supporting data. The dependability test will then calculate the Cronbach's alpha value. Alpha levels of 0.7 or higher are considered adequate. The significance level will remain at 0.05. Data analysis is a procedure that collects and organizes data before deciding whether to accept or reject a hypothesis. This questionnaire will be analyzed using a Likert-style rating scale, with respondents given five options. The three primary methodologies used in this study are descriptive analysis, normality and reliability analysis, and Spearman correlation analysis.

3.9.1 Descriptive Analysis

According to Zikmund (2003), descriptive analysis provides a thorough situation overview, condensing data into actionable insights. This procedure entails presenting respondent demographics using various statistical representations. According to Sidel, J. L., Bleibaum, R. N., & Tao, K. C. (2018), it was a groundbreaking development for its time, and it represented a significant step forward in giving sensory evaluation a scientific basis by producing objective, statistically reliable, and statistically analyzable data. Using this method, researchers can compute critical statistical measures such as the mean, variance, and standard deviation to uncover central tendencies and articulate the fundamental characteristics that define the research.

Descriptive analysis is used to describe or summarize data to be used more efficiently, making it easier for the analyst to act. This instrument is also designed to analyze data in percentages and frequencies by employing three primary measures of central tendency: mode, median, and mean. As a result, gender, age, occupation, primary use of AI integration, and AI technology enhancement are all requested in Section A of the questionnaire, and the measurement unit includes demographic factors. Descriptive analysis aids in the achievement of the study's goal.

3.9.2 Reliability Analysis

For reliability analysis, Cronbach's Alpha analysis measured the reliability of our questionnaire through rigorous testing in our pursuit of robust and dependable data. This analysis protects the integrity of our research. Consider our survey questions organized into scales,' with each question within these scales referred to as an 'item.' Cronbach's Alpha analysis emerges as a robust metric for revealing the relationships that connect these items. It shows the degree of internal consistency within a scale, indicating the strength of its dependability. Cronbach's Alpha assumes values within the range of 0 to 1. This scale mirrors the reliability level, where a higher value signifies greater internal consistency. To

draw a parallel, it's akin to an orchestra where every instrument plays in perfect harmony, producing a symphony of reliable data. Therefore, when Cronbach's Alpha steps onto the stage, it ensures our research makes it in perfect unison.

Cronbach's alpha, which ranges from 0 to 1, measures the internal reliability of a test or scale. Scales are unsuitable or unacceptable when Cronbach's alpha value is less than 0.59. The dependability could be better when the alpha is less than 0.6. Then, fair scale dependability occurs when Cronbach's alpha is greater than or equal to 0.6 but less than 0.7. However, the scale is highly reliable, ranging from 0.7 to less than 0.8. Furthermore, an exceptional dependability scale is greater than or equal to 0.89 and even more significant than 0.9. As a result, the alpha value increases as the pieces are joined.

Table 3.9.2: Cronbach's alpha of internal consistency

Cronbach's Alpha	Strength of Association
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Very Good
$0.8 > \alpha \geq 0.7$	Good
$0.7 > \alpha \geq 0.6$	Moderate
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

3.9.3 Spearman Correlation Analysis

According to Gogtay, N. J., & Thatte, U. M. (2017), Spearman's Correlation is a term used to describe the relationship or association between two (or more) quantitative variables. This analysis is fundamentally based on the assumption that the participant obtained a straight-line score. Spearman's Correlation Coefficient measures the degree of association between two quantitative variables, typically the independent and dependent variables, measured on an ordinal scale.

In statistics, values for the Spearman correlation coefficient range from +1 to -1, with 1 representing a perfect positive correlation, 0 indicating no association, and -1 showing a strong negative one. It is frequently used as a metric for determining the strength of linear dependence between two variables.

Table 3.9.3: Spearman's Strength of Coefficient Relationship

Spearman p	Correlation
> 0.70	Very strong relationship
0.40 – 0.69	Strong relationship
0.30 – 0.39	Moderate relationship
0.20 – 0.29	Weak relationship
0.01 – 0.19	No or negligible relationship

Figure 3.9.3: The spectrum of the correlation coefficient (-1 to 1)
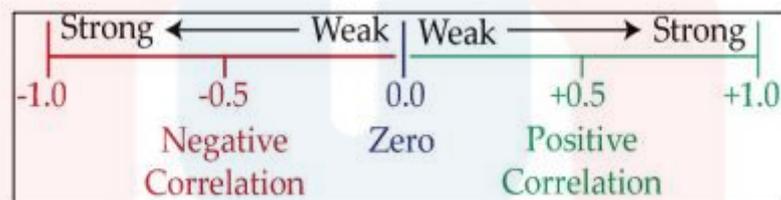
3.9.4 Pilot Test Analysis

The pilot study is an essential part of the research process. It can assist in identifying design issues and evaluating the feasibility, practicability, resources, time, and cost of a project before the start of the main study. Pilot study data can help researchers better understand the potential outcomes of their planned research. Researchers will become more accustomed to the data collection methods they will use by conducting a pilot test, and they will be better prepared to address any issues that may arise in the more extensive study.

3.9.5 Normality Test Analysis

A normality test analysis determines whether a sample or data set fits the bell-shaped, symmetrical normal distribution. It aids in determining whether the distribution or pattern of the data is expected. The results of this statistical test indicate how symmetrically and closely the data points are distributed around the mean. The Anderson-Darling test, the Shapiro-Wilk test, the Kolmogorov-Smirnov test, and graphical techniques like histograms and Q-Q plots are frequently used to evaluate normality. Since some procedures and models require typically distributed data to produce accurate results, normality tests are essential in many statistical analyses.

3.10 Summary/ Conclusion

With its meticulous exegesis, this chapter provides a crystal-clear definition of the methodology and procedures meticulously applied, seamlessly connecting with the stated objectives of the research. Its overarching goal is to provide a systematic justification for the research methodology, which is intricately intertwined with the research aims and objectives, culminating in precisely identifying solutions to the research problems.

The summary in Chapter 3 explains a research methodology to see how raw data obtained is converted into more apparent data through various data collection methods. The purpose of this section is to describe the study design, data collection methods, study population, sample size, sampling techniques, research instrument development, variable measurement, and data analysis procedures. This section assists the analyst in better understanding how to obtain information and evaluating the information that will be gathered to continue the investigation and fulfil the purpose of this study. The study's findings will be discussed in greater depth in Chapter 4.

CHAPTER 4
DATA ANALYSIS AND FINDINGS

4.1 Introduction

This section covered the preliminary analysis, respondent demographics, descriptive analysis, test of validity and reliability, test of normalcy and test of hypotheses. The section also discussed the normality test. A summary of the respondent's demographic profile was included in the descriptive analysis. You must conduct the validity and reliability tests to ascertain whether the samples you collected are, in fact, representative of the entire population. Therefore, Cronbach's Alpha was used as a measurement of reliability throughout the experiment. Therefore, factor analysis would be used to assess the survey's level of validity. The regression tests and the correlation analysis were applied in order to better understand the relationships between the variables.

4.2 Preliminary Analysis

In order to ensure that the questionnaire would be effective with the intended respondent, a pilot test must first be conducted. Using the results of the pilot study, you may determine whether or not your independent and dependent variables can be relied upon to back up your research. Successful research investigations require a well-thought-out experimental design and precise execution if they are to yield reliable results. In addition to helping with sample size calculations, the data gleaned from a pilot project can be used to evaluate any and all areas of the larger study, saving time and effort for both researchers and participants while conserving scarce resources. Researchers can learn the ins and outs of the methods involved in the main study by doing a pilot study, which then informs the choice of which research method will be most effective in answering the research questions.

For a first-order latent variable, Cronbach's alpha quantifies the degree to which items from that variable tend to be reliable indicators of other items in the same variable. Reliability refers to how well measurements consistently and reliably produce accurate results. In organisational research, Cronbach's alpha and coefficient, as well as the composite reliability coefficient, are the most widely used estimators of an instrument's internal consistency dependability (Matkar, 2010). In the first stages of study, an alpha of 0.6 was enough, as stated by Nunnally (1978). According to (Hair et al. (2010), a composite dependability rating of 0.70 is considered minimal. As the internal consistency dependability improves, Cronbach's alpha approaches 1.A reliability test has been done the researches with disturbing questionnaire to 30 random respondents.

Table 4.1: Rules of Thumb about Cronbach's Alpha Coefficient Size Table

Cronbach's Alpha	Strength of Association
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Very Good
0.8 > α ≥ 0.7	Good
0.7 > α ≥ 0.6	Moderate
0.6 > α ≥ 0.5	Poor

Table 4.2: Reliability Analysis

Variables	Cronbach's Alpha	Number of Item(N)
AI Integration Experience (DV)	.885	5
User Perception (IV)	.964	5
Customer Behavior (IV)	.924	5
Perceived Impact on Sustainable Development (IV)	.955	5
Trust in AI Technology (IV)	.909	5

Cronbach's alpha is expressed as a numeric value that can range from 0 to 1; generally speaking, the closer the value is to 1 the more reliable the associated scale is. When conducting research, scientists are more likely to have faith in their findings and conclusions if they use a reliable set of scales. This is something that is reflected in the quality of their work. The major purpose of the reliability test is to ascertain whether or not the data collected are consistent with one another. If the Cronbach Alpha value is higher than 0.6, then the information can be relied upon. In the table 4.2 above shows the reliability of data analysis for both dependent and independent variables of this research about saving behaviors.

All of these data are accurate when the Alpha of the Cronbach is greater than 0.7. As shown in the above table, the AI Integration Experience dependent variables are 0.885. For the independent variables which is user perception with 0.964. Customer behavior with 0.924, perceived impact on sustainable development with 0.955 and trust in AI Technology with .909. This shows that any attribute is very good and outstanding results for each independent variable.

4.3 Demographic Profile of Respondent

The demographic profile of responders is represented by the information in this chapter consisting of gender, age, race, employment status, the primary and widely used AI applications in mobile e-commerce platforms, and does AI technology enhance mobile e-commerce experience.

4.3.1 Gender

Based on table 4.3, it reveals that 55 (39.3%) of respondents are male, with the remaining 85 (60.7%) female.

Table 4.3: Respondent's Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male / Lelaki	55	39.3	39.3	39.3
	Female / Perempuan	85	60.7	60.7	100.0
	Total	140	100.0	100.0	

Sources: Developed from research
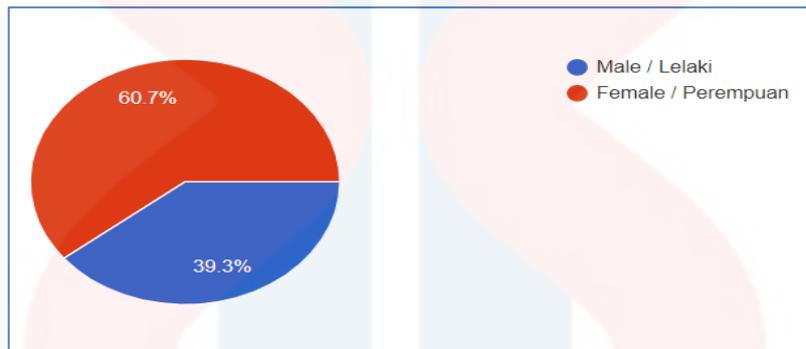
Chart 4.1: Gender

4.3.2 Age

This research involved few different age and they are among from 18 -20, 21-23 and 24-26 and above. Based on the table 4.4, it is shown that the range of age by our respondents. Among the 140 respondents, majority of the respondents from age 21-23 and above with a total of 98 respondents (70%).Continue by 24-26 years old total of 21 respondents (15%) and 18-20 years old total of 13 respondents (9.3%). Other get the lowest number which is 8 respondent (5.7%)

Table 4.4: Respondent's Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 20 years old	13	9.3	9.3	9.3
	21 - 23 years old	98	70.0	70.0	79.3
	24 - 26 years old	21	15.0	15.0	94.3
	Other	8	5.7	5.7	100.0
	Total	140	100.0	100.0	
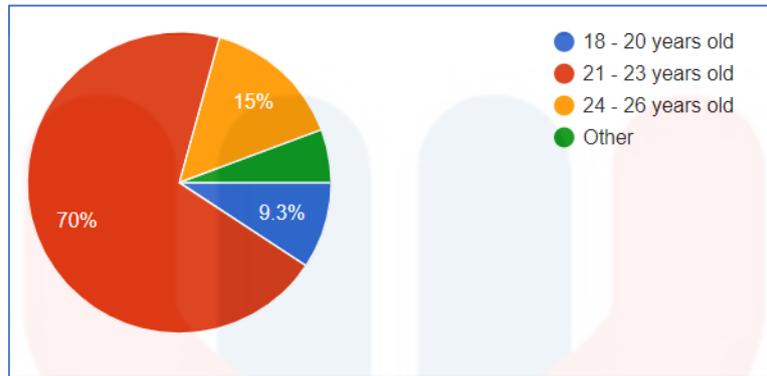
Chart 4.2: Respondent Age

4.3.3 Race

Based on table 4.5 shown below, indicate that majority of the respondents fall into the Malay race which 103 respondents (73.6%). Followed by Chinese 27 respondents (19.3%) and Indian were 9 respondents (6.4%).Meanwhile, other race were only 1 respondent (0.7%) who response.

Table 4.5: Respondents Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay / Melayu	103	73.6	73.6	73.6
	Chinese / Cina	27	19.3	19.3	92.9
	Indian / India	9	6.4	6.4	99.3
	Other	1	.7	.7	100.0
	Total	140	100.0	100.0	
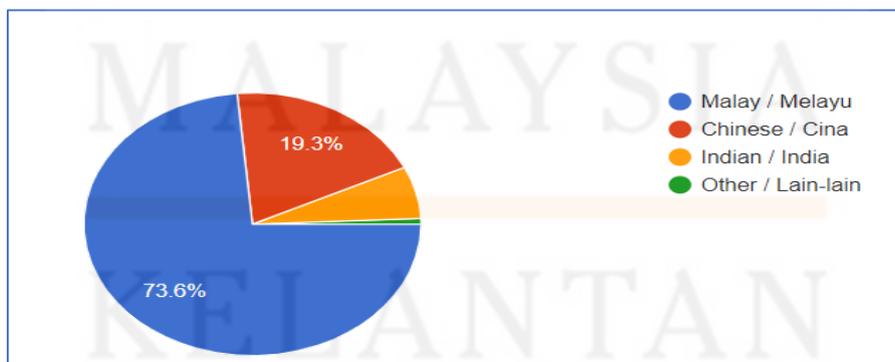
Chart 4.3: Respondents Race

4.3.4 Employment Status

Based on table 4.6 shows that the majority respondents are student which 90 respondents (64.3%).Followed employed 45 respondents (32.1%) while retired are 4 respondents (0.7%). Unemployed just only 1 respondent (0.7%) who is responses.

Table 4.6: Respondents of Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student / Pelajar	90	64.3	64.3	64.3
	Employed / Bekerja	45	32.1	32.1	96.4
	Unemployed / Tidak bekerja	1	.7	.7	97.1
	Retired / Bersara	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Sources: Developed from research
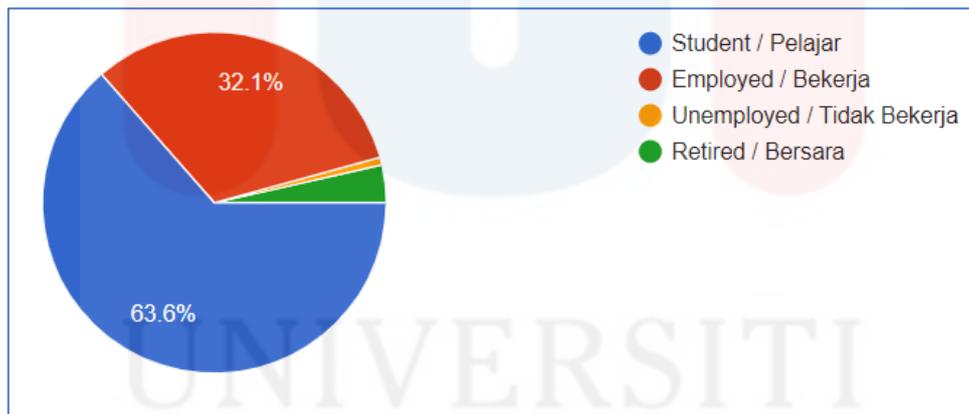
Chart 4.4: Respondents Employment Status

4.3.5 The primary and widely used AI applications in mobile e-commerce platforms

Based on table 4.7, the majority of respondents 86(61.4%) choose Tiktok Shop for the primary and widely used AI applications in mobile e-commerce platform followed by 44 respondents (31.4%) which choose Shoppe and 10 respondents (7.1%) choose Lazada for Shop for the primary and widely used AI applications in mobile e-commerce platform.

Table 4.7: Respondents what are the primary and widely used AI applications in mobile e-commerce platforms?

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Alapplications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Shoppe	44	31.4	31.4	31.4
	Lazada	10	7.1	7.1	38.6
	Tiktok Shop	86	61.4	61.4	100.0
	Total	140	100.0	100.0	

Sources: Developed from research
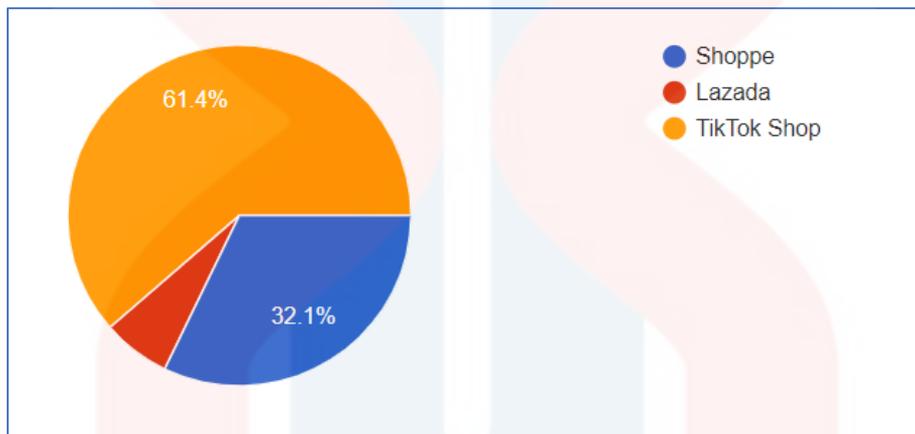
Chart 4.5: Respondents what are the primary and widely used AI applications in mobile e-commerce platforms?

4.3.6 AI technology enhance mobile e-commerce experience

Based on table 4.8, the majority of respondents 127(90.7%) said yes for AI technology enhance mobile e-commerce experience followed by 13 respondents (9.3%) who only said no for AI technology enhance mobile e-commerce experience.

Table 4.8: Respondents does AI technology enhance your mobile e-commerce experience?

Alexperience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes / Ya	127	90.7	90.7	90.7
	No / Tidak	13	9.3	9.3	100.0
	Total	140	100.0	100.0	

Sources: Developed from research
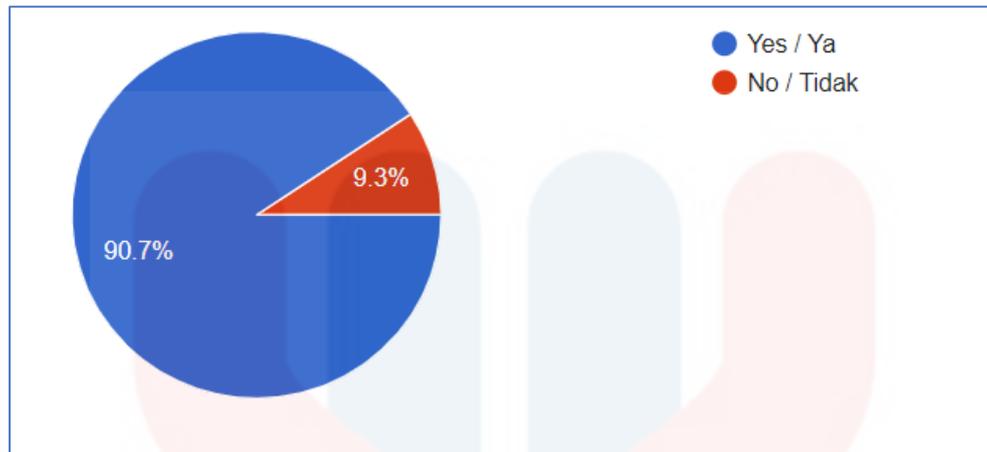
Chart 4.6: Respondents does AI technology enhance your mobile e-commerce experience?

4.4 Descriptive Analysis

According Parampreet Kaur et al (2018), descriptive statistics are used to summarize data in a planned manner by portraying the association between factors in a model or people. This section compute the descriptive statistics of the dependent variable which is AI Integration experience and independent variables which user perception, customer behavior, perceived impact on sustainable development and trust in AI technology . The mean and standard deviation for each question from all variables starting from section B were disclose.

4.4.1 Descriptive Statistic for AI Integration Experience.

Table 4.9 its show the mean and standard deviation for AI integration experience. The highest mean score, 4.09, is shown on number 2 in the chart, when respondents generally agreed that AI-driven features and recommendations have positively influenced their purchasing decisions in mobile e-commerce, leading to increased engagement and transactions. The lowest mean value for this category have 3 which number 1,4 and 5 which was 4.04, indicating that I now understand how AI integration handle more effectively. In addition, the standard deviation for this category demonstrates that the value was more trustworthy due to the less than 1 standard deviation.

Table 4.9 Descriptive Statistics for AI Integration Experience

Descriptive Statistics

	N	Mean	Std. Deviation
AI integration has significantly improved the overall user experience in mobile e-commerce platforms, enhancing convenience, personalization, and ease of navigation	140	4.04	.677
AI-driven features and recommendations have positively influenced your purchasing decisions in mobile e-commerce, leading to increased engagement and transactions	140	4.09	.698
AI integration in mobile e-commerce contribute to more sustainable shopping practices by providing eco-friendly product suggestions and promoting responsible consumption	140	4.06	.770
AI integration has reduced the environmental impact of mobile e-commerce activities, such as minimizing unnecessary packaging or encouraging eco-conscious choices	140	4.04	.781
AI-driven mobile e-commerce platforms are more likely to support socially responsible initiatives and ethical business practices, contributing to sustainable economic growth and societal well-being	140	4.04	.767
Valid N (listwise)	140		

4.4.2 Descriptive Statistics for User Perception

Based on the table 4.10, it shows the mean and standard deviation for user perception. The highest mean is on number 2 and 5 which both are 4.11 where this indicated that respondents agree that AI in mobile e-commerce boosts purchasing decisions, increasing engagement with product and service recommendations and AI in mobile e-commerce aligns

with ethical and environmental values, fostering sustainable growth and societal well-being .

While the lowest mean is 4.04 which is AI integration improves mobile e-commerce with

personalized recommendations and a seamless shopping experience. The standard deviation

for this category shows that the value was more reliable because of less than 1.

Table 4.10 Descriptive Statistics for User Perception

Descriptive Statistics

	N	Mean	Std. Deviation
AI integration improves mobile e-commerce with personalized recommendations and a seamless shopping experience.	140	4.04	.795
AI in mobile e-commerce boosts purchasing decisions, increasing engagement with product and service recommendations.	140	4.11	.811
AI integration fosters sustainable shopping through eco-friendly product promotion and reduced packaging in mobile e-commerce.	140	4.08	.814
AI in mobile e-commerce raises awareness of sustainable products, influencing shopping choices positively.	140	4.07	.736
AI in mobile e-commerce aligns with ethical and environmental values, fostering sustainable growth and societal well-being.	140	4.11	.730
Valid N (listwise)	140		

4.4.3 Descriptive Statistics for Consumer Behavior

Based on the table 4.11, it shows the mean and standard deviation for customer

behavior. From that, the highest mean value is number 2 with 4.12 which is AI integration

improves mobile e-commerce for an efficient and tailored shopping experience. While the

lowest mean value is on number 1 with 4.04 which is AI personalization in mobile e-commerce

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shapes buying decisions and boosts engagement with recommendations and offers. The standard deviation for this category shows is above than 1, the value was reliable.

Table 4.11: Descriptive Statistics for Consumer Behavior

Descriptive Statistics

	N	Mean	Std. Deviation
AI personalization in mobile e-commerce shapes buying decisions and boosts engagement with recommendations and offers.	140	4.04	.734
AI integration improves mobile e-commerce for an efficient and tailored shopping experience.	140	4.12	.714
AI technologies raise awareness of sustainable and socially responsible products in mobile e-commerce shopping.	140	4.10	.723
Does AI integration in mobile e-commerce reduce wasteful consumption and promote sustainability?	140	4.06	.727
AI in mobile e-commerce fosters sustainable growth and responsible consumer behavior, benefiting the environment and the economy.	140	4.09	.684
Valid N (listwise)	140		

4.4.4 Descriptive Statistics for Perceived Impact on Sustainable Development

Based on the table 4.12, it shows the mean and standard deviation for perceived impact on sustainable development. From that, the highest mean value is number 5 with 4.13 which is AI integration cultivates social responsibility and ethics in mobile e-commerce, promoting sustainable development. While the lowest mean value is on number 1 with 3.99 which is AI integration in mobile e-commerce boosts sustainable development by reducing the environmental footprint and promoting responsible consumption. The standard deviation for this category shows is above than 1, the value was reliable.

Table 4.12: Descriptive Statistics for Perceived Impact on Sustainable Development

Descriptive Statistics

	N	Mean	Std. Deviation
AI integration in mobile e-commerce boosts sustainable development by reducing the environmental footprint and promoting responsible consumption.	140	3.99	.754
AI-driven initiatives optimize logistics, reduce energy consumption in mobile e-commerce, and promote sustainable business practices and economic growth.	140	4.12	.734
AI integration enhances mobile e-commerce accessibility and affordability, creating a more inclusive and sustainable marketplace.	140	4.11	.730
AI's personalized mobile e-commerce experiences boost consumer awareness and encourage environmentally responsible choices.	140	4.04	.781
AI integration cultivates social responsibility and ethics in mobile e-commerce, promoting sustainable development.	140	4.13	.748
Valid N (listwise)	140		

4.4.5 Descriptive Statistics for Trust in AI Technology

Based on the table 4.13, it shows the mean and standard deviation for trust in AI technology. From that, the highest mean value is number 5 which is AI in mobile e-commerce promotes sustainable development and responsible consumer behavior. While the lowest mean value is on number 2 with 4.02 which is AI algorithms responsibly manage personal data, building trust in online shopping privacy.The standard deviation for this category shows is above than 1,the value was reliable.

Table 4.13: Descriptive Statistics for Trust in AI Technology

Descriptive Statistics

	N	Mean	Std. Deviation
AI in mobile e-commerce earns trust through accurate recommendations and improved shopping experiences.	140	4.06	.741
AI security measures, like fraud detection and data protection, enhance trust in mobile e-commerce.	140	4.03	.719
AI algorithms responsibly manage personal data, building trust in online shopping privacy.	140	4.02	.754
AI integration ensures trust and security in mobile e-commerce financial transactions.	140	4.04	.767
AI in mobile e-commerce promotes sustainable development and responsible consumer behavior.	140	4.09	.684
Valid N (listwise)	140		

4.5 Validity and Reliability Test

To determine whether the findings in this study are reliable or conform to the conventional assessment for internal consistency, this research applied Cronbach's Alpha. Cronbach alpha is a measure of the inter-item consistency of a first order latent component. Furthermore, the degree to which measurement is error-free and constant in delivering trustworthy data is referred to as dependability. In organizational research, Cronbach's alpha 2and coefficient, as well as the composite reliability coefficient, are the most often used estimators of an instrument's internal consistency dependability (Matkar, 2010). According to (Nunnally (1978), a minimal alpha of 0.6 was sufficient in the early stages of research. According to Hair et al. (2010), the suggested minimal composite reliability value is 0.70. As the internal consistency dependability increases, Cronbach's alpha approaches 1. The reliability

analysis report generated by SPSS for all of the items in the questionnaire is provided in Table 4.14 below.

Table 4.14: Cronbach's Alpha Reliability Test Result

Variables	Cronbach's Alpha	Number of Item(N)	N
AI Integration Experience	.920	5	140
User Perception	.916	5	140
Customer Behavior	.917	5	140
Perceived Impact on Sustainable Development	.926	5	140
Trust in AI Technology	.923	5	140

The reliability test findings for dependent variables and independent variables in this study, which was based on a survey of 140 random respondents, were displayed in Table 4.15 above. According to table 4.14 Cronbach's Alpha Coefficient strength of association value of more than 0.8 is considered good for the reliability test.

In calculating the AI integration experience among the respondent, 5 question were used and the Cronbach's Alpha result for this section's question was 0.920 which result is excellent. Thus, the coefficient obtained for these questions AI integration experience is excellent.

Then, to measure the AI integration experience variable with user perception among random respondent ,5 question were used and the Cronbach's Alpha result for this section's question was 0.916 which results is excellent. Therefore, the coefficient obtained for these question about user perception is excellent.

Next, to measure the AI integration experience variable with customer behavior among random respondent, 5 question were used and the Cronbach's Alpha result for this section's question was 0.917 which results is excellent. Therefore, the coefficient obtained for these question about perceived impact on sustainable development is excellent.

Thus, to measure the AI integration experience variable with perceived impact on sustainable development among random respondent, 5 question were used and the Cronbach's Alpha result for this section's question was 0.925 which results is excellent. Therefore, the coefficient obtained for these question about perceived impact on sustainable development is excellent.

Lastly, to measure the AI integration experience variable with trust in AI technology among random respondent, 5 question were used and the Cronbach's Alpha result for this section's question was 0.923 which results is excellent. Therefore, the coefficient obtained for these question about trust in AI technology is excellent.

4.6 Normality Test

Table 4.15: Result of Normality Test for Dependent Variable and Independent Variable

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DV	.257	140	.000	.873	140	.000
IV1	.248	140	.000	.880	140	.000
IV2	.264	140	.000	.876	140	.000
IV3	.251	140	.000	.886	140	.000
IV4	.275	140	.000	.882	140	.000

a. Lilliefors Significance Correction

The SPSS framework was used to check and evaluate the information's ordinariness. In this review, the ordinariness of the data was examined using the Kolmogorov-Smirnova and Shapiro-Wilk tests. There are two ways to understand circulation: common and unusual appropriation. Any factors with a p-esteem below 0.05 contained information about irregularity. Table 4.16 displays the results of the Kolmogorov-Smirnova and Shapiro-Wilk tests used to determine whether all research variables were normally distributed. The results of each test indicate that all significant p-values are less than 0.05, or 0.000, which indicates that the data is abnormal since it does not follow a normal distribution.

Descriptives

			Statistic	Std. Error
DV	Mean		17.0443	.22659
	95% Confidence Interval for Mean	Lower Bound	16.5963	
		Upper Bound	17.4923	
	5% Trimmed Mean		17.2175	
	Median		16.8000	
	Variance		7.188	
	Std. Deviation		2.68104	
	Minimum		8.20	
	Maximum		21.00	
	Range		12.80	
	Interquartile Range		2.15	
	Skewness		-1.008	.205
	Kurtosis		1.793	.407
IV1	Mean		17.1229	.24449
	95% Confidence Interval for Mean	Lower Bound	16.6395	
		Upper Bound	17.6063	
	5% Trimmed Mean		17.3270	
	Median		16.8000	
	Variance		8.369	
	Std. Deviation		2.89287	
	Minimum		5.20	
	Maximum		21.00	
	Range		15.80	
	Interquartile Range		2.20	
	Skewness		-1.120	.205
	Kurtosis		2.159	.407
IV2	Mean		17.1314	.22336
	95% Confidence Interval for Mean	Lower Bound	16.6898	
		Upper Bound	17.5731	
	5% Trimmed Mean		17.2762	
	Median		16.8000	
	Variance		6.985	
	Std. Deviation		2.64284	
	Minimum		6.40	
	Maximum		21.00	
	Range		14.60	
	Interquartile Range		2.20	
	Skewness		-1.007	.205
	Kurtosis		1.999	.407

IV3	Mean		17.0900	.23493
	95% Confidence Interval for Mean	Lower Bound	16.6255	
		Upper Bound	17.5545	
	5% Trimmed Mean		17.2302	
	Median		16.8000	
	Variance		7.727	
	Std. Deviation		2.77971	
	Minimum		5.40	
	Maximum		21.00	
	Range		15.60	
	Interquartile Range		2.20	
	Skewness		-.890	.205
	Kurtosis		1.741	.407
IV4	Mean		16.9743	.23126
	95% Confidence Interval for Mean	Lower Bound	16.5170	
		Upper Bound	17.4315	
	5% Trimmed Mean		17.1000	
	Median		16.8000	
	Variance		7.488	
	Std. Deviation		2.73636	
	Minimum		6.40	
	Maximum		21.00	
	Range		14.60	
	Interquartile Range		2.15	
	Skewness		-.802	.205
	Kurtosis		1.320	.407

4.7 Hypothesis Testing

There are 4 hypothesis that development earlier in chapter 2 as the ultimate purpose of this study.

4.7.1 User Perception (Hypothesis one)

H1: There is a relationship between AI integration experience and User Perception.

Table 4.16 Hypothesis of user perception

Correlations

			AI Integration Experience (DV)	User Perception (IV)
Spearman's rho	AI Integration Experience (DV)	Correlation Coefficient	1.000	.747**
		Sig. (2-tailed)	.	<.001
		N	140	140
	User Perception (IV)	Correlation Coefficient	.747**	1.000
		Sig. (2-tailed)	<.001	.
		N	140	140

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

The table 4.16 show the outcome result of Spearman Correlation which was run the relationship between AI Integration Experience and user perception has positive correlation between two variables r=0.747,n = 140, p < 0.01.There was statistically significant correlation between AI Integration Experience and user perception. It was positive correlation.

4.7.2 Customer Behavior (Hypothesis two)

H2: There is a relationship between and AI Integration Experience and Customer Behavior.

Table 4.17 Hypothesis of Customer Behavior

Correlations

			AI Integration Experience(DV)	Customer Behavior (1V)
Spearman's rho	AI Integration Experience (DV)	Correlation Coefficient	1.000	.742[**]
		Sig. (2-tailed)	.	<.001
		N	140	140
	Customer Behavior (IV)	Correlation Coefficient	.742[**]	1.000
		Sig. (2-tailed)	<.001	.
		N	140	140

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

The table 4.17 show the outcome result of Spearman Correlation which was the relationship between AI Integration Experience and customer behavior. AI Integration Experience and customer behavior has positive correlation between two variables, r =0.742,n = 140, p < 0.01.There was statistically significant correlation between AI Integration Experience and customer behavior. It was positive correlation.

4.8.3 Perceived Impact in Sustainable Development (Hypothesis third)

H3: There is a relationship between AI Integration Experience and Perceived Impact on Sustainable Development

Table 4.18 Hypothesis of Perceived Impact in Sustainable Development

Correlations

			AI Integration Experience(DV)	Perceived Impact on Sustainable Development (1V)
Spearman's rho	AI Integration Experience (DV)	Correlation Coefficient	1.000	.666[**]
		Sig. (2-tailed)	.	<.001
		N	140	140
	Perceived Impact on Sustainable Development (IV)	Correlation Coefficient	.666[**]	1.000
		Sig. (2-tailed)	<.001	.
		N	140	140

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

The table 4.18 show the outcome result of Spearman Correlation which was run the relationship between AI integration experience and perceived impact on sustainable development. AI integration experience and perceived impact in sustainable development has positive correlation between two variables,r =0.666,n = 140, $p < 0.01$.There was statistically significant correlation between AI integration experience and perceived impact on sustainable development. It was positive correlation.

4.8.4 Trust in AI Technology (Hypothesis fourth)

H4: There is a relationship between AI Integration Experience and Trust in AI Technology

Table 4.19 Hypothesis of Trust in AI Technology

Correlations

			AI Integration Experience(DV)	Trust in AI Technology (1V)
Spearman's rho	AI Integration Experience (DV)	Correlation Coefficient	1.000	.728**
		Sig. (2-tailed)	.	<.001
		N	140	140
	Trust in AI Technology (IV)	Correlation Coefficient	.728**	1.000
		Sig. (2-tailed)	<.001	.
		N	140	140

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

The table 4.19 show the outcome result of Spearman Correlation which was run the relationship between AI Integration Experience and Trust in AI Technology. AI Integration Experience and Trust in AI Technology has positive correlation between two variables,r =0.728,n = 140, p < 0.01.There was statistically significant correlation between AI Integration Experience and Trust in AI Technology. It was positive correlation.

4.9 Summary

The demographic characteristics of respondents were investigated in this chapter using frequency analysis on all four independent variables. The reliability test also demonstrated that all of the construct measures used in this study are capable of delivering consistent results. Meanwhile, the four independent variables and AI Integration experience in this study show a significant relationship. Using the results collected in this chapter, we may investigate the study's key findings, repercussions and limits, and research recommendations in further depth in the next chapter.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

The culmination of critical findings from the research will be presented in this chapter, shedding light on the core contributions to the existing body of knowledge. The implications of these findings and the subsequent recommendations for future research endeavours will be thoroughly examined. Furthermore, a thorough discussion of the limitations encountered during this study will be provided. This section will summarize the critical discoveries made during the research process, emphasizing their importance in expanding our current understanding of the subject. Overall, this chapter aims to capture the comprehensive essence of the research, from its contributions to the implications and recommendations, while acknowledging and discussing the limitations encountered, ensuring a holistic understanding of the study's findings.

5.2 KEY FINDINGS

The overall review is discussed in depth in this chapter. It enables the researcher to obtain additional data and interpret the results based on the findings from all of the knowledge. Aside from that, researchers were able to determine whether they could meet the study's objectives. To comprehensively investigate the dimensions influencing AI integration experience and its impact on various aspects, including user perception, consumer behaviour, trust in AI technology, and perceived impact on sustainable development. This overarching aim sets the stage for a detailed exploration of how these factors interplay in AI integration, contributing to a nuanced understanding of artificial intelligence technologies' broader implications and applications.

The primary goal of this research question is to determine whether predictive factors such as user perception, consumer behaviour, trust in AI technology, and perceived impact

on sustainable development significantly influence the random respondents in Malaysia. The research findings in Chapter 4 confirmed the researcher's hypothesis, demonstrating a strong relationship between the dependent and independent variables. According to the study, user perception, consumer behaviour, trust in AI technology, and perceived impact on sustainable development influence among random respondents in Malaysia. Table 5.2 summarizes the findings related to the study's primary research question, which sought to determine whether user perception, consumer behaviour, trust in AI technology, and perceived impact on sustainable development influenced the random respondent preferences for entrepreneurial performance.

As a result of this research, we are optimistic about identifying the factors influencing the random respondent in Malaysia's attitudes toward artificial intelligence integration of mobile e-commerce. As a result of this research, we will better understand the factors influencing students' opinions about artificial intelligence on the long-term development of mobile e-commerce platforms. After determining the measurement model's validity and reliability, the structural model was evaluated to test the relationships hypothesized in this study.

Research Question	Hypothesis Result	Finding
i. Is there any significant relationship between user perception and AI integration experience?	$p = 0.0000$ $(p < 0.01)$ $r = 0.747$	i. There is positive relationship between user perception and AI integration experience
ii. Is there any	$p = 0.0000$	ii. There is positive

significant relationship between consumer behavior and AI integration experience?	(p < 0.01) r = 0.742	relationship between consumer behavior and AI integration experience
iii. Is there any significant relationship between trust in AI technology and AI integration experience?	p = 0.0000 (p < 0.01) r = 0.666	iii. There is positive relationship between trust in AI technology and AI integration experience
iv. Is there any significant relationship between perceived impact on sustainable development and AI integration experience?	p = 0.0000 (p < 0.01) r = 0.728	iv. There is positive relationship between perceived impact on sustainable development and AI integration experience

5.3 DISCUSSION

This section provides an overview of the findings from Chapter 4, which focuses on the research objective, research question, and hypothesis for this analysis.

5.3.1 Hypothesis 1: Relationship between AI integration experience and user perception.

The hypothesis under examination posits a relationship between AI integration experience and user perception. The statistical analysis reveals a correlation coefficient value of 0.747, which indicates a strong positive correlation between the two variables. A correlation coefficient ranges from -1 to 1, with 1 signifying a perfect positive correlation. In this context, the substantial value of 0.747 suggests a robust and positive linear relationship. Furthermore, the associated p-value being less than 0.05 signifies statistical significance, reinforcing the confidence in rejecting the null hypothesis.

5.3.2 Hypothesis 2: Relationship between AI integration experience and consumer behaviour.

The hypothesis positing a relationship between AI integration experience and consumer behaviour is supported by a strong correlation coefficient of 0.742. This value, falling close to the upper limit of the correlation scale, indicates a robust and positive linear relationship between the two variables. With a sample size (n) of 140 and a p-value less than 0.05, the statistical significance strengthens the confidence in rejecting the null hypothesis, emphasizing the reliability of the observed correlation. The correlation coefficient of 0.742 implies that as consumers accumulate more experience with AI integration, there is a substantial and positive association with changes in their behaviour.

5.3.3 Hypothesis 3: Relationship between AI integration experience and perceived impact on sustainable development.

The hypothesis proposing a relationship between AI integration experience and Perceived Impact in Sustainable Development is substantiated by a correlation coefficient of 0.666, reflecting a moderate to strong positive correlation. With a sample size (n) of 140 and a

p-value less than 0.05, the statistical significance reinforces the rejection of the null hypothesis, underscoring the reliability of the observed correlation. The correlation coefficient of 0.666 suggests a noteworthy association, indicating that as individuals accumulate more experience with AI integration, there is a positive influence on their perceived impact in sustainable development.

5.3.4 Hypothesis 4: Relationship between AI integration experience and trust in AI technology

The hypothesis proposing a relationship between AI integration experience and trust in AI technology is strongly supported by a correlation coefficient of 0.728, indicating a substantial positive correlation. With a sample size (n) of 140 and a p-value less than 0.05, the statistical significance emphasizes the rejection of the null hypothesis and underscores the reliability of the observed correlation. The correlation coefficient of 0.728 implies a robust association, suggesting that as individuals accumulate more experience with AI integration, there is a notable increase in their trust in AI technology.

5.4 IMPLICATIONS OF THE STUDY

This study examines the transformative impact of incorporating Artificial Intelligence (AI) into mobile e-commerce, with a particular emphasis on improving user experiences. The widespread use of smartphones and the burgeoning e-commerce landscape highlight the importance of investigating how AI adoption influences user interactions and perceptions within this dynamic ecosystem. It is possible to dissect the multifaceted implications of AI integration and understand its profound impact on mobile e-commerce. This study aims to delineate the nuanced facets of AI's influence by synthesizing empirical findings and theoretical underpinnings, specifically its effects on user satisfaction, engagement, and conversion rates.

The proliferation of mobile e-commerce platforms has resulted in a paradigm shift in

consumer behaviour, necessitating a better understanding of the role of AI in enhancing user experiences. By investigating the integration of AI-driven technologies such as machine learning, natural language processing, and predictive analytics within mobile e-commerce, this study hopes to uncover how AI creates a personalized, seamless, and efficient user journey. The implications of AI adoption for recommendation systems, personalized content delivery, and conversational interfaces require thorough investigation to determine their profound impact on user satisfaction and loyalty in the mobile e-commerce landscape.

This study highlights the critical role of AI-driven advancements in transforming user experiences on mobile e-commerce platforms. Combining AI algorithms and machine learning mechanisms enables businesses to understand user behaviour, preferences, and patterns with unprecedented precision. This understanding allows for the development of personalized and tailored consumer experiences. Users receive tailored product suggestions via AI-powered recommendation systems, which improves their browsing and purchasing experience, fostering increased customer satisfaction and loyalty. Furthermore, integrating AI-powered chatbots and virtual assistants into mobile e-commerce platforms is essential to improving user experiences. These intelligent systems provide real-time support, streamline customer queries, and personalize assistance, significantly increasing user engagement and satisfaction.

The study examines the overall impact of AI-driven predictive analytics on mobile e-commerce. By leveraging massive amounts of data, AI gives businesses predictive insights into consumer behaviour and market trends. As a result, this proactive approach improves user experiences by ensuring product availability stays ahead in a highly competitive landscape. Furthermore, this study sheds light on the ethical implications of AI adoption in mobile e-commerce. Data privacy, algorithmic bias, and transparency in AI decision-making processes must be carefully considered. Understanding and addressing these ethical concerns is critical to ensuring that AI-driven mobile e-commerce advancements are impactful and ethically

sound, fostering consumer trust and credibility.

In conclusion, the study on the impact of AI adoption on improving user experiences in mobile e-commerce provides a nuanced understanding of the symbiotic relationship between technological advancements and consumer engagement. The findings highlight AI's critical role in providing personalized, efficient, and ethically conscious mobile shopping experiences, influencing the trajectory of digital commerce and consumer interactions in a rapidly changing landscape.

5.5 LIMITATION OF THE STUDY

In academic research, the limitations of a study refer to the factors that may have affected or constrained the research in some way. It's important for researchers to acknowledge these limitations to provide a transparent and honest assessment of the study's scope and potential implications. In this study, we have identified a few areas that needed improvement during the course of the investigation, and we could further develop these parts going forward.

5.5.1 Sample Size and Geographical Constraint

For the study and research purpose, 140 respondents from various age groups with different backgrounds have been asked to fill a google form questionnaire. Although most of the respondents are Universiti Malaysia Kelantan (UMK) students because those target respondents are the easiest to convince to help us collect data. The rest of the respondents are those who have some connection with us, group members, whether they are our friends, family or relatives. The sample and data we can provide are quite small so it might not be very reliable since there are still many more e-commerce users whether they are buyers or sellers percentage wise, so it is impossible for us to collect so much data, especially considering the times we are given.

5.5.2 Cross-sectional Study

The cross-sectional poses inherent limitations. By capturing a single snapshot in time, the research lacks the ability to establish causation or account for temporal changes in the dynamic fields of AI and e-commerce. This limitation calls for caution in making causal inferences and underscores the necessity for future longitudinal studies to unravel the evolving impact of AI integration on sustainability practices. Moreover, the study's findings based on our respondents' responses may lack generalizability due to the diverse nature of mobile e-commerce ecosystems, prompting a need for context-specific investigations to enhance the broader applicability of the research. While valuable, the study's cross-sectional approach necessitates complementary research designs to provide a more nuanced understanding of the intricate relationship between AI integration and sustainable development in mobile e-commerce.

5.5.3 Lack of Cooperation

The study encounters a significant limitation stemming from the lack of cooperation among potential respondents. During the distribution of the Google Form questionnaire, a notable challenge emerged as a substantial number of individuals approached for participation displayed hesitancy or unwillingness to respond. This reluctance could be attributed to various factors, such as survey fatigue, concerns about data privacy, or time constraints faced by participants. The limited response rate poses a potential threat to the study's external validity, as the sample may not be representative of the broader population involved in mobile e-commerce. The findings derived from a subset of respondents may lack generalizability and raise questions about the broader applicability of the study's conclusions. Addressing this limitation requires acknowledging the potential biases introduced by the non-response and exploring strategies to enhance participant engagement in future research endeavours.

5.6 RECOMMENDATIONS/ SUGGESTION FOR FUTURE RESEARCH

There are a few ways to improve the quality and scope of the research on experiences with AI integration in Mobile e-commerce. For example, provide a limited perspective. A broader demographic, such as those from different platforms or different age groups, could provide a more in-depth look at the challenges and opportunities of AI integration. In addition, a longitudinal study could explore how user perceptions and experiences change over time as users gain familiarity with AI technology. This would provide valuable insights on the long-term effects of integration efforts. By combining quantitative data with qualitative interview questions (e.g., focus groups or one on one interviews), users' experiences and perceptions could be further refined, allowing for a more nuanced analysis of the multidimensional aspects of AI integration.

In addition, a comparative study by comparing AI integration experiences within mobile e-commerce to other industries, such as banking and education, could provide interesting contrasts and similarities, revealing sector-specific issues and best practices. Ethical considerations are essential in the rapidly changing landscape of AI technology. Dedicating a section to address these concerns would add an extra layer of detail to the research, focusing on the ethical implications of AI integration in mobile. User education and AI integration experiences determining whether a deeper understanding of AI technology via education changes user perception and behavior could provide valuable insight into the role that education plays in the shaping of user interactions with AI across mobile e-commerce domains. In conclusion, by incorporating these various components, the research can provide a more comprehensive and nuanced understanding of the AI integration experiences within Mobile e-commerce. Case Studies including case studies for successful AI integration in Mobile e-commerce would provide practical insights as well as real-world examples to illustrate theoretical concepts discussed in this research.

Given the constraints that have been highlighted, it is essential to take into account a number of recommendations for further research projects in this field. First and foremost, improving the study's reliability and generalizability requires resolving the sample size and regional representation constraints. In order to increase the number of participants and guarantee a more representative and diverse sample, researchers might work with other universities or other organizations. Furthermore, the utilization of stratified sampling methodologies may facilitate the acquisition of a more comprehensive comprehension of AI integration experiences among diverse populations, therefore mitigating any biases stemming from a restricted sample size.

Future research should use a longitudinal approach, following the growth of AI integration experiences and their influence on sustainable development in mobile e-commerce over an extended period of time, in order to get around the constraint of the cross-sectional study. This would make it easier to analyze causality more thoroughly and allow academics to track changes over time in the dynamic domains of e-commerce and artificial intelligence.

Using proactive tactics to increase participant participation is crucial when it comes to the problem of disobedience. A better response rate should be encouraged by providing clear communication about the importance of the research, being transparent about data protection safeguards, and offering incentives for involvement. In addition, other data gathering techniques like focus groups and interviews should be investigated by researchers in order to obtain deeper insights from those who might be unwilling to fill out surveys. Furthermore, future research might examine newly developed AI applications and their effects on sustainable development in mobile e-commerce, considering the speed at which technology is developing. It would also be beneficial to look at how well educational interventions work to change users' attitudes and actions about AI integration.

Finally, by taking these suggestions into consideration, future research may expand on

the groundwork established by this study, offering a more thorough and nuanced comprehension of the connection between AI integration and sustainable growth in the context of mobile e-commerce.

5.7 SUMMARY

With an emphasis on impact of artificial intelligence adoption on improving user experience on mobile e-commerce this study explores the complex relationship between the integration of artificial intelligence (AI) and the long-term growth of mobile e-commerce. The main focus is on the dependent variable, which is the experience of integrating AI, and the independent factors, which are all related to the community, include user perception, consumer behavior, faith in AI technology, and perceived influence on sustainable development.

This chapter's thorough explanation of the research methodology offers a cogent and organized defence of the study. It aims to answer the specified research challenges and fits in perfectly with the research objectives. The study population, sample size, sampling strategies, research instrument creation, variable measurement, data analysis processes, and study design are all covered in detail in this chapter. This part provides a thorough grasp of how unprocessed data is turned into insightful knowledge, which lays the groundwork for further analysis and interpretation of the results.

Frequency analysis is used to examine the demographic features of respondents, revealing a range of backgrounds among the participants. Furthermore, a reliability test confirms that the construct measures used in the research are consistently applied. The importance of these elements in influencing the improving user experiences in the field of AI and mobile e-commerce is highlighted by the substantial connections found between the four independent variables and AI integration experience.

As the chapter comes to an end, it lays the framework for the following stage of the

investigation, which will delve further into the important discoveries, consequences, and constraints. The results have great potential for offering insightful information on the complex dynamics of AI integration among students. These insights might have ramifications for both academic discourse and real-world applications in the field of mobile e-commerce. The forthcoming chapter is expected to elucidate the complex results of the investigation, providing suggestions for other research projects and useful takeaways for participants in the quickly changing field of artificial intelligence and sustainable growth in mobile e-commerce.

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APPENDIX A (DRAFT OF QUESTIONNAIRE)

SECTION A: DEMOGRAPHIC PROFILE.

Please select of the following answer boxes for each question/ *Sila pilih salah satu kotak jawapan berikut untuk setiap soalan.*

1. Gender/ *Jantina*

   o Male */ Lelaki*

   o Female */ Perempuan*

2. Age/ *Umur*

   o 18 – 20 years old / *18 – 20 tahun*

   o 21-23 years old / *21-23 tahun*

   o 24 – 26 years old / *24 – 26 tahun*

   o Other / *Lain-lain*

3. Race / *Kaum*

   o Malay / *Melayu*

   o Chinise / *Cina*

   o Inddian / *India*

   o Other / *Lain- lain*

4. Employment Status / *Status Pekerjaan*

   o Students / Pelajar

   o Employed / Bekerja

   o Unemployed / Tidak bekerja

5. What are the primary and widely used AI applications in mobile e-commerce platforms? /Apakah aplikasi AI utama dan digunakan secara meluas dalam platform e-dagang mudah alih?

   o Shopee

   o Lazada

   o TikTok Shop

6. Does AI technology enhance your mobile e-commerce experience? /Adakah teknologi AI meningkatkan pengalaman e-dagang mudah alih anda?

   o Yes / *Ya*

   o No / *Tidak*

SECTION B : DEPENDENT VARIABLE (AI INTEGRATION EXPERIENCE).

Please answer the following questions based on the platform you have chosen as your primary shopping platform in Section A (Lazada/Shopee/Tiktok)

Sila jawab soalan berikut berdasarkan platform yang anda pilih sebagai platform beli belah utama anda di Bhagian A (Lazada/Shopee/Tiktok).

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

Sila nyatakan tahap persetujuan anda terhadap pernyataan berikut dengan memilih nombor yang diberikan mulai dari: Sangat Tidak Setuju = 1, Tidak Setuju = 2, Berkecuali = 3, Setuju = 4, Sangat Setuju = 5

	Statement	**Strongly Disagree = 1**	**Disagree = 2**	**Neutral = 3**	**Agree = 4**	**Strongly Agree = 5**
Q1	AI integration has significantly improved the overall user experience in mobile e-commerce platforms, enhancing convenience, personalization, and ease of navigation/*Penyepaduan AI telah meningkatkan pengalaman pengguna keseluruhan dengan ketara dalam platform e-dagang mudah alih, meningkatkan kemudahan, pemperibadian dan kemudahan navigasi.*	1	2	3	4	5
Q2	AI-driven features and recommendations have positively influenced your purchasing decisions in mobile e-commerce, leading to increased engagement and transactions/ *Ciri dan pengesyoran dipacu AI telah mempengaruhi keputusan pembelian anda secara positif dalam e-dagang mudah alih, yang membawa kepada peningkatan penglibatan dan transaksi.*	1	2	3	4	5
Q3	AI integration in mobile e-commerce contribute to more sustainable shopping practices by providing eco-friendly product suggestions and	1	2	3	4	5

	promoting responsible consumption/ *Penyepaduan AI dalam e-dagang mudah alih menyumbang kepada amalan membeli-belah yang lebih mampan dengan menyediakan cadangan produk mesra alam dan menggalakkan penggunaan yang bertanggungjawab.*					
Q4	AI integration has reduced the environmental impact of mobile e-commerce activities, such as minimizing unnecessary packaging or encouraging eco-conscious choices/ *Integrasi AI telah mengurangkan kesan alam sekitar aktiviti e-dagang mudah alih, seperti meminimumkan pembungkusan yang tidak perlu atau menggalakkan pilihan yang mementingkan alam sekitar.*	1	2	3	4	5
Q5	AI-driven mobile e-commerce platforms are more likely to support socially responsible initiatives and ethical business practices, contributing to sustainable economic growth and societal well-being/ *Platform e-dagang mudah alih dipacu AI berkemungkinan besar menyokong inisiatif bertanggungjawab sosial dan amalan perniagaan beretika, menyumbang kepada pertumbuhan ekonomi yang mampan dan kesejahteraan masyarakat.*	1	2	3	4	5

SECTION C: INDEPENDENT VARIABLE.

I.   USER PERCEPTION

Please answer the following questions based on the platform you have chosen as your primary shopping platform in Section A (Lazada/Shopee/TikTok)

Sila jawab soalan berikut berdasarkan platform yang anda pilih sebagai platform beli belah utama anda di Bhagian A (Lazada/Shopee/TikTok).

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

Sila nyatakan tahap persetujuan anda terhadap pernyataan berikut dengan memilih nombor yang diberikan mulai dari: Sangat Tidak Setuju = 1, Tidak Setuju = 2, Berkecuali = 3, Setuju = 4, Sangat Setuju = 5

	Statement	**Strongly Disagree = 1**	**Disagree = 2**	**Neutral = 3**	**Agree = 4**	**Strongly Agree = 5**
Q1	AI integration improves mobile e-commerce with personalized recommendations and a seamless shopping experience. / *Penyepaduan AI meningkatkan e-dagang mudah alih dengan pengesyoran yang diperibadikan dan pengalaman membeli-belah yang lancar.*	1	2	3	4	5
Q2	AI in mobile e-commerce boosts purchasing decisions, increasing engagement with product and service recommendations. / *AI dalam e-dagang mudah alih meningkatkan keputusan pembelian, meningkatkan penglibatan dengan cadangan produk dan perkhidmatan.*	1	2	3	4	5
Q3	AI integration fosters sustainable shopping through eco-friendly product promotion and reduced packaging in mobile e-commerce. / *Penyepaduan AI memupuk beli-belah yang mampan melalui promosi produk mesra alam dan*	1	2	3	4	5

	Statement	Strongly Disagree = 1	Disagree = 2	Neutral = 3	Agree = 4	Strongly Agree = 5
	pembungkusan yang dikurangkan dalam e-dagang mudah alih.					
Q4	AI in mobile e-commerce raises awareness of sustainable products, influencing shopping choices positively. / *AI dalam e-dagang mudah alih meningkatkan kesedaran tentang produk yang mampan, mempengaruhi pilihan membeli-belah secara positif.*	1	2	3	4	5
Q5	AI in mobile e-commerce aligns with ethical and environmental values, fostering sustainable growth and societal well-being. / *AI dalam e-dagang mudah alih sejajar dengan nilai etika dan alam sekitar, memupuk pertumbuhan mampan dan kesejahteraan masyarakat*	1	2	3	4	5

II.   CONSUMER BEHAVIORAL

	Statement	Strongly Disagree = 1	Disagree = 2	Neutral = 3	Agree = 4	Strongly Agree = 5
Q1	AI personalization in mobile e-commerce shapes buying decisions and boosts engagement with recommendations and offers. / *Pemperibadian AI dalam e-dagang mudah alih membentuk keputusan pembelian dan meningkatkan penglibatan dengan pengesyoran dan tawaran.*	1	2	3	4	5
Q2	AI integration improves mobile e-commerce for an efficient and tailored shopping experience. / *Penyepaduan AI meningkatkan e-dagang mudah alih untuk pengalaman membeli-belah yang cekap dan disesuaikan.*	1	2	3	4	5

Q3	AI technologies raise awareness of sustainable and socially responsible products in mobile e-commerce shopping. / *Teknologi AI meningkatkan kesedaran tentang produk yang mampan dan bertanggungjawab secara sosial dalam membeli-belah e-dagang mudah alih*	1	2	3	4	5
Q4	Does AI integration in mobile e-commerce reduce wasteful consumption and promote sustainability? / *Adakah integrasi AI dalam e-dagang mudah alih mengurangkan penggunaan membazir dan menggalakkan kemampanan?*	1	2	3	4	5
Q5	AI in mobile e-commerce fosters sustainable growth and responsible consumer behavior, benefiting the environment and the economy. / *AI dalam e-dagang mudah alih memupuk pertumbuhan yang mampan dan tingkah laku pengguna yang bertanggungjawab, memberi manfaat kepada alam sekitar dan ekonomi.*	1	2	3	4	5

III.   PERCEIVED IMPACT ON SUSTAINABLE DEVELOPMENT

		Statement	Strongly Disagree = 1	Disagree = 2	Neutral = 3	Agree = 4	Strongly Agree = 5
Q1		AI integration in mobile e-commerce boosts sustainable development by reducing the environmental footprint and promoting responsible consumption. / *Penyepaduan AI dalam e-dagang mudah alih meningkatkan pembangunan mampan dengan mengurangkan jejak alam sekitar dan menggalakkan*	1	2	3	4	5

	penggunaan yang bertanggungjawab					
Q2	AI-driven initiatives optimize logistics, reduce energy consumption in mobile e-commerce, and promote sustainable business practices and economic growth. / *Inisiatif dipacu AI mengoptimumkan logistik, mengurangkan penggunaan tenaga dalam e-dagang mudah alih, dan menggalakkan amalan perniagaan yang mampan dan pertumbuhan ekonomi.*	1	2	3	4	5
Q3	*AI integration enhances mobile e-commerce accessibility and affordability, creating a more inclusive and sustainable marketplace. / Penyepaduan AI meningkatkan kebolehcapaian dan keterjangkauan e-dagang mudah alih, mewujudkan pasaran yang lebih inklusif dan mampan.*	1	2	3	4	5
Q4	AI's personalized mobile e-commerce experiences boost consumer awareness and encourage environmentally responsible choices. / *Pengalaman e-dagang mudah alih AI yang diperibadikan meningkatkan kesedaran pengguna dan menggalakkan pilihan yang bertanggungjawab terhadap alam sekitar.*	1	2	3	4	5
Q5	AI integration cultivates social responsibility and ethics in mobile e-commerce, promoting sustainable development. / *Penyepaduan AI memupuk tanggungjawab sosial dan etika dalam e-dagang mudah alih, menggalakkan pembangunan mampan*	1	2	3	4	5

IV. TRUST IN AI TECHNOLOGY

	Statement	Strongly Disagree = 1	Disagree = 2	Neutral = 3	Agree = 4	Strongly Agree = 5
Q1	AI in mobile e-commerce earns trust through accurate recommendations and improved shopping experiences. / *AI dalam e-dagang mudah alih memperoleh kepercayaan melalui pengesyoran yang tepat dan pengalaman membeli-belah yang dipertingkatkan*	1	2	3	4	5
Q2	AI security measures, like fraud detection and data protection, enhance trust in mobile e-commerce. / *Langkah keselamatan AI, seperti pengesanan penipuan dan perlindungan data, meningkatkan kepercayaan dalam e-dagang mudah alih.*	1	2	3	4	5
Q3	AI algorithms responsibly manage personal data, building trust in online shopping privacy. / *Algoritma AI mengurus data peribadi secara bertanggungjawab, membina kepercayaan dalam privasi membeli-belah dalam talian*	1	2	3	4	5
Q4	AI integration ensures trust and security in mobile e-commerce financial transactions. / *Penyepaduan AI memastikan kepercayaan dan keselamatan dalam transaksi kewangan e-dagang mudah alih.*	1	2	3	4	5
Q5	AI in mobile e-commerce promotes sustainable development and responsible consumer behavior. / *AI dalam e-dagang mudah alih menggalakkan pembangunan mampan dan tingkah laku*	1	2	3	4	5

	pengguna yang bertanggungjawab					
			73			
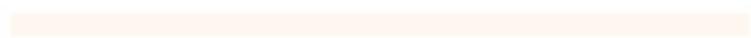
APPENDIX B (GANT CHART)

Description	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Chapter 1: Introduction														
Background of the study														
Problem statement														
Research question														
Research objective														
Scope of the study														
Significance of study														
Definition of term														
Organization of the proposal														
Chapter 2 Literature Review														
Introduction														
Underpinning theory														
Previous studies														
Hypothesis statement														

Task																
Conceptual framework					▓	▓										
Summary					▓	▓										
Chapter 3: Research Methods																
Introduction							▓	▓								
Research design							▓	▓								
Data collection methods							▓	▓								
Study population							▓	▓								
Sample size							▓	▓								
Sampling techniques							▓	▓								
Research instrument development							▓	▓								
Measurement of the variable							▓	▓								
Procedure for data analysis							▓	▓								
Summary							▓	▓								
Chapter 4: Data Analysis and Finding																
Introduction									▓	▓	▓	▓				
Preliminary analysis									▓	▓	▓	▓				
Demographic profile of respondent									▓	▓	▓	▓				
Descriptive analysis									▓	▓	▓	▓				
Validity and Reliability Test									▓	▓	▓	▓				
Normality Test									▓	▓	▓	▓				
Hypothesis Testing									▓	▓	▓	▓				

Summary/Conclusion															
Chapter 5: Discussion and conclusion															
Introduction															
Key Finding															
Discussion															
Implication of the Study															
Limitation of the Study															
Recommendation/ Suggestion for Future Research															
Overall Conclusion of the Study															