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DETERMINANTS THAT AFFECT USAGE INTENTION ON CHATGPT AMONG UNIVERSITY STUDENTS IN MALAYSIA

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DEBORAH & KI	USAGE INTENTION ON CHATGPT	BMK (HONOURS)	APRIL 2024

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BY

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A final year project submitted in partial fulfilment of the requirement for the degree of

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DECLARATION

We hereby declare that:

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

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

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

(4) The word count of this research report is 9146.

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DEDICATION

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
ATT	Attitudes Towards Using on Technology
DV	Dependent Variable
INT	Intention to Use
IV	Independent Variable
PEoU	Perceived Ease of Use
PP	Perceived Personalization
PT	Perceived Trustworthiness
PU	Perceived Usefulness
SPSS	Software Package for Social Sciences
TAM	Technology Acceptance Model
UI	Usage Intention
UT	Usage of a Technology

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PREFACE

This research project was undertaken to fulfil the requirements for obtaining a Bachelor of Marketing (Hons) degree from Universiti Tunku Abdul Rahman (UTAR) Kampar Campus. The study focuses on exploring the determinants that influence usage intention of ChatGPT among university students in Malaysia. The dependent variable for this study is Intention to Use and the four independent variables examined are Perceived Ease of Use, Perceived Personalization, Perceived Trustworthiness, and Perceived Usefulness. Moreover, the Malaysian populace plays a crucial role in determining these determinants of usage intention on ChatGPT among university students in Malaysia. This research aims to provide future researchers and AI developers with a better understanding of Malaysian university students' perspectives and to facilitate improvements in the trustworthiness of AI chatbots.

ABSTRACT

This study aims to examine the determinants that influence usage intention on ChatGPT among university students in Malaysia by incorporating the Technology Acceptance Model (TAM). Meanwhile, Perceived Usefulness (PU), Perceived Ease of Use (PEoU), Perceived Trustworthiness (PT), and Perceived Personalization (PP) are the independent variables (IVs) of this study. These IVs employed to determine whether they could significantly influences the dependent variable (DV) – Intention to Use (INT) of ChatGPT.

Apart from that, altogether 382 participants were collected as part of the data. Tool like Statistical Software Package for Social Sciences (SPSS) was utilized to evaluate the gathered data. Besides, the relationship between four IV and DV was illustrate using Internal Consistency Analysis such as Reliability Test, in addition to Inferential Analysis including Pearson Correlation Coefficient as well as Multiple Regression Analysis.

Moreover, the study's findings had demonstrated that PU, PEoU, and PP have a significant impact toward the Intention to Use (INT) of ChatGPT, while PT has an insignificant influence toward the usage intention on ChatGPT.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Study problem as well as background pertaining to Malaysian university students' usage intention on ChatGPT will be covered in Chapter 1. Besides, research objectives, questions in addition to study significance will be formed.

1.1 Research Background

As mentioned by Fitria (2023), Artificial Intelligence (AI) is a technology which could simulate human intelligence and apply into a machine to perform variety task for any purpose. Nicolas (2022) with the statistic showing that 64% of global population have the basic knowledge about what AI is, which had proved the trend of AI toward society: High Popularity. By 2027, the global AI market's value will grow at approximately $267 billion, and it is projected to contribute $15.7 trillion to the word economy in year 2030 (Bojan, 2023). This is because over 60% of organization highly believe AI could benefit on their business performance such as improving customer relationship and increasing productivity. Additionally, survey which conducted by Forbes Advisor had shown 65% of customers believe companies who adopt AI are trustworthy even though they concerned about its usage (Kathy, 2023).

Without a doubt, one of the best AI chatbots that significantly shows the power of AI is ChatGPT (Mashable SEA, 2023). Sabrina (2023) stated that ChatGPT known as an AI chatbot which developed by OpenAI and published on 30 November 2022, with the function to respond further inquiries, admit its mistakes, correct false assumptions, and reject improper requests. As of May 2023, ChatGPT with 13 million of daily visitors and total 1.8 billion of website visitors, it able to reached

over 173 million of active users and expected to grow up to 514 million users in the year 2024 (Fabio, 2023). As mentioned by Yaqub (2023), ChatGPT was trained by including about 570 GB of data sourced from various form such as Wikipedia, websites, articles, e-books, research journal and other, and nearly 300 billion words in its system. With these databases, ChatGPT can provide users a personalized and informative content or conversation.

The launch of ChatGPT has achieved incredible success, rapidly achieving popularity, drawing in over one million users within mere days after launch. (Cousins, 2023). This availability has resulted in heightened the expansion and demand of ChatGPT in various fields, especially in the educational field. Consistent with this trend, more and more worldwide students have flocked to adopt ChatGPT to complete their homework (Adiguzel et al., 2023). Additionally, the percentage of students who adopt ChatGPT will grow exponentially as they learn more about using this loophole for homework (Editorial, 2023).

Moreover, Malaysia embraces ChatGPT in the educational field. As proof, according to Malaymail (2023), Malaysia's Higher Education Minister mentioned that Malaysia would not band ChatGPT in the educational field. Besides, he encourages students to utilize ChatGPT for educational purposes properly and ethically. Additionally, the lecturer at University Utara Malaysia (UUM), Dr Nasir noted that ChatGPT can improve education and enhance the capability of students. Therefore, he stressed that educators and students should integrate ChatGPT into the learning process (Ali, 2023). Moreover, the government motivates and encourages educational institutions such as MMU, UKM, UMK and et cetera to adopt ChatGPT by providing training for utilizing the functionalities of ChatGPT in the educational field (Amir, 2023). Besides that, many higher institutions such as UTAR (Centre for Learning and Teaching, 2023), UUM (UUM, 2023), UKM (UKM,2023), et cetera provide talk to students in order to increase the awareness of ChatGPT for educational purposes. However, Malaysian university students' intention to adopt ChatGPT is low compared to United States university students.

Lastly, Bonsu & Baffour-Koduah (2023) noted that the understanding of how university students are attracted to ChatGPT is currently limited. Therefore, considering the significance of ChatGPT usage, it is crucial to grasp the determinants that affect the intention to adopt among Malaysian university students.

1.2 Research Problem

The launch of ChatGPT had gained world attention. Within 5 days, it able to attract one million users and acquired 100 million of active users within a span of four months (Wu et al., 2023) and 173 million of them in April 2023 (Nerdynav, 2023). However, 'Internet Users' amounted 5.18 billion of the worldwide population as of April 2023 (Ani, 2023), had proved the main issues of ChatGPT: Low Usage Rates.

'University Students' are the person who falls under 18 to 50 years old and even older, currently pursuing their academic journey (Urban Locker, 2022). Malik et al. (2021) mentioned that university students are more inclined to adopt AI Chatbots for educational purposes, however, only 46% of them were aware and started to use ChatGPT for generating text (Fabio, 2023).

As of July 2023, Malaysia ranks 45th with a global population of 33,609,608 (Worldometers, 2023), including 1,270,000 students enrolled in higher education programs at over 590 institutions (EasyUni Sdn Bhd, 2023). However, Rahim et al. (2022) stated that Malaysia's educational system had not yet fully include or widely using chatbots for academic purposes, therefore, it is important to further understand Malaysian university students' perspectives on the usage of ChatGPT.

Research from Lo (2023) mentioned that the drawback of ChatGPT's response to inaccurate information has affected users' perceived usefulness. Javid et al. (2023) further elaborated that inaccurate information generated by ChatGPT can result in user confusion and affect the quality of the job. For example, mathematical problems still failed to solve by AI system (Lametti, 2022; Frieder et al., 2023)

which have proved the statement from Surameery & Shakor (2023) who mentioned that ChatGPT' accurateness level only consist of 64.33%.

Besides, ChatGPT stood out with its unique ability which is ease-of use featured, by able to provide a smooth and natural interactions with the public via a user-friendly web interface at no cost (Kevin, 2022). Lucas (2022) further elaborated that it is not too difficult to use ChatGPT as users may get information by just typing in their text. This had result most of the users primarily utilize ChatGPT purely for searching information instead of generating coding and image due to lack of knowledge. Hence, the intention of user and perceived ease of use toward ChatGPT are low because of inadequate training and support available for effectively utilizing the functionalities of ChatGPT (Iqbal et al., 2022).

Apart from that, ChatGPT currently has acquired more than 100 million users after launching in November 2022 due to its impressive capability to generate information (Ruby, 2023). Nevertheless, ChatGPT has continuously faced criticism and scepticism from professors, authors, lawyers, doctors, and many influential people (Sample, 2023). Undoubtedly, negative criticism directly affected user's intention to adopt ChatGPT. In addition, Malaysia's Higher Education Minister mentioned that many higher learning institutions in Malaysia are concerned about the credibility and transparency of ChatGPT. Therefore, many local universities have issued guidelines on the adoption of ChatGPT to students (Sharifah, 2023).

Additionally, the implementation of ChatGPT in an academic setting may involve data privacy and security issues (Islam & Islam, 2023) which might lead users to feel insecure. Steven (2023) explained that ChatGPT was temporarily offline on March 20 due to the leak of personal data caused by its service and OpenAI had admitted to the statement. For instance, ChatGPT Plus costs users $20 per month by providing them the benefit of quicker response time and higher accessibility during peak hours of its service (Natalie, 2023). Unfortunately, 1.2% of them was unintentionally suffered from personal data breach such as username, email and payment address, credit card's last four digits number and etcetera (OpenAI, 2023).

Moreover, Baidoo-Anu & Ansah (2023) stated that ChatGPT acts as an adaptable conversational agent which can provide a highly personalized learning experience and feedback to users. As evidence, ChatGPT tailors and adapts its replies based on user's proficiency level, specific needs, and preferences by employing various structures and tones (Biswas, 2023). In addition, ChatGPT can respond to complex inquiries and provide relevant answers in a manner that emulates human interaction (Sallam, 2023). However, according to Shen et al. (2023), the knowledge and training data of ChatGPT is limited up to 2021. Therefore, ChatGPT may not be aware of current events, news, or developments that have occurred after 2021. Undoubtedly, this issue affects ChatGPT's capability to provide current information and personalized answers. The research from Kalla (2023) stated that ChatGPT does not have emotional intelligence, which led to issues with understanding emotional cues such as sarcasm and humour. Hence, ChatGPT might provide irrelevant and inappropriate responses that affect the quality of personalized responses.

Based on the previous research which carried out by Iqbal et al. (2022); Bonsu & Baffour-Koduah (2023); Shahsavar & Choudhury (2023); Rahaman (2023); Andersson & Marshall (2023), it can be clearly observed that Technology Model Acceptance (TAM) that had been widely use in the ChatGPT-related studies. However, most of the researchers did not include Perceived Trustworthiness and Perceived Personalization. Additionally, TAM with the limitation of utilising the original TAM without expanding it is seen as generic theory and may not give a comprehensive explanation of how people adopt technology (Alshammari & Rosli, 2020). Based on the above justification, it had strongly proved that research which similar to this topic is limited available and the expanding of TAM theory is still yet to be research. Hence, this research can be the benchmark or point of reference to researchers for further understanding about the specified topic.

1.3 Research Objectives & Research Questions

1.3.1 General Objective

The main objective of this study aims to achieve a thorough understanding of the factors that influence Malaysian university students' usage intention toward ChatGPT.

1.3.2 Specific Objectives

i. To study the impact of Perceived Usefulness affect Usage Intention on ChatGPT among Malaysian university students.

ii. To study the impact of Perceived Ease of Use affect Usage Intention on ChatGPT among Malaysian university students.

iii. To study the impact of Perceived Trustworthiness affect Usage Intention on ChatGPT among Malaysian university students.

iv. To study the impact of Perceived Personalization affect Usage Intention on ChatGPT among Malaysian university students.

1.3.3 Research Questions

i. Does Perceived Usefulness significantly influences Usage Intention on ChatGPT among Malaysian university students?

ii. Does Perceived Ease of Use significantly influences Usage Intention on ChatGPT among Malaysian university students?

iii. Does Perceived Trustworthiness significantly influences Usage Intention on ChatGPT among Malaysian university students?

iv. Does Perceived Personalization significantly influences Usage Intention on ChatGPT among Malaysian university students?

1.4 Research Significance

From a practitioners' perspective, this research would prove beneficial for technology firms, it helps technology companies uncover the determinants that affect the usage intention on ChatGPT and avoid riskier decisions such as the design and functionality of AI-based educational technologies. Besides, it will aid developers and marketers of artificial intelligence in applying strategies as well as recognizing and creating appropriate strategies and methods that enhance the inclination of Malaysians to utilize artificial intelligence chatbots, encouragege them to try and adopt the latest or newest version of artificial intelligence chatbots. By enhancing their services, developers of artificial intelligence chatbots can foster credibility and trust among users, thereby gaining a competitive advantage in the Malaysian market.

Moreover, this research enables educators, and educational institutions, to possess a clearer inclination towards exploring the determinants that affected the intention of Malaysia's university students to adopt ChatGPT, which helped Malaysia's government and educators have an idea to utilize and integrate ChatGPT in education institutions. Additionally, this research helps Malaysia's educators better equip themselves and their students for the technological environment and to furnish them with the essential knowledge and skills to thrive in a society propelled by artificial intelligence. As a result, educators may find this research useful. Specifically, it provides a foundation for future research that focusing on artificial intelligence chatbots.

From an academic perspective, this study offers comprehensive knowledge and further insights into the TAM model.By incorporating additional variables like Perceived Trustworthiness as well as Perceived Personalization, the research's framework offers broader understanding of the determinants affecting the usage intention of university students toward ChatGPT. Clearly, the study could provide valuable recommendations for the advancement of AI chatbots and contribute to the concept in collaboration with future researchers.

1.5 Conclusion

The background of study, research issue, objectives, study questions in addition to study significance which related to this study had been dicussed. Chapter 2 will covered more on the relevant theoretical model and past research.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Previous research of TAM Model and research variables will be reviewed in Chapter 2. In order to assess the determinants that affect the usage intention toward ChatGPT among Malaysian university students, the research framework and research hypotheses are formulated.

No.	Author (s) and Year	Title	Theory/ Model/ Variables	Approach (Quantitative / Qualitative)	Unit of Analysis/ respondents
1.	Iqbal et al. (2022)	Exploring teachers' attitudes towards using ChatGPT	TAM	Quantitative	20 faculty members from a Pakistan private university
2.	Bonsu & Baffour-Koduah (2023)	From the Consumers' Side: Determining Students' Perception and Intention to Use ChatGPT in Ghanaian Higher Education	TAM	Quantitative	107 units of Ghanaian university students.
3.	Shahsavar & Choudhury (2023)	User Intentions to Use ChatGPT for Self-Diagnosis and Health-Related Purposes: Cross-sectional Survey Study	UTAUT & TAM	Quantitative	607 unit of participants who used ChatGPT at least once per month.

4.	Rahaman (2023)	Can ChatGPT be your friend? Emergence of Entrepreneurial Research	TAM	Qualitative	N.A.
5.	Andersson & Marshall (2023)	ChatGPT as a Supporting Tool for System Developers: Understanding User Adoption.	TAM	Quantitative	31 unit of system developers who located in the Sweden northern region

Table 2.0: Literature Review Matrix

2.1 Underlying Theories

The Technology Acceptance Model (TAM) was constructed by Davis (1989) in Management Information Systems (MIS) Quarterly, had been recognized as a highly influential research framework for the investigation of determinants that influence the acceptance of information systems in addition to technology. Purpose of applying TAM aims to have a better prediction on individuals' usage intention and acceptance toward such technology (Chen et al., 2011). The reason for TAM's existence in 1985 was first proposed by Fred Davis's doctoral thesis at MIT Sloan School of Management (Davis, 1985) in order to solve the issue of the rising of system adoption failure in organizations due to the increasing demand for technology and prediction of system use having high interest for many researchers in the 1970s.

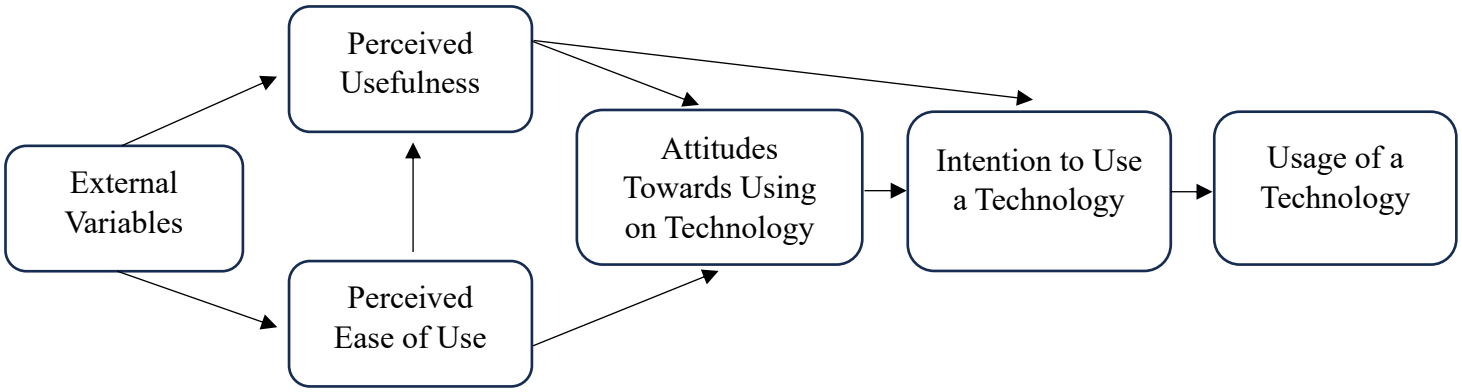

Figure 2.1: The Technology Acceptance Model (TAM) (Davis, 1989)

Figure 2.1 shown the necessity components which have to be included in TAM. TAM consist of five main constructs such as Perceived Usefulness (PU), Perceived Ease of Use (PEoU), Attitudes Towards Using on Technology (ATT), Intention to Use a Technology (INT), and Usage of a Technology (AU). All the constructs play an important role in investigating the technology and applications' acceptance among users (Alshammari & Rosli, 2020). According to Davis (1989), PU reflect the level to someone who thinks that the utilization of technology could enhanced job performance; PEoU reflect the extent to someone who thinks that the utilization

of technology could necessitate less effort; ATT reflects a person's positive or negative perspective toward doing the required action when using a particular system; INT is the degree to which certain users have formed an intention to either continue or not using a specific technology in their future behaviour; UT is the degree to usage of a certain technology by users, by considering the usage frequency and quantity each time.

Besides, TAM is suitable to apply when the research is to study about how user feel toward adoption of a new technology (Robert, 2020) which could provide the benefit of easy to understand and able to demonstrated a strong predictive ability across different situations, however, the information provide by both determinants such as PU and PEoU might be too general and limited for researchers to further study about the way to enhance technology usefulness and ease of use (Innovation Acceptance Lab, n.d.). In this study, TAM is being applied as our research intends to assess the factors that influence the usage intention on ChatGPT among Malaysian university students which align to requirement for applying TAM. However, ATT would be exclude in this research framework as the relationship between PU and INT is strong while the relationship between ATT and INT is weak (Alshammari & Rosli, 2020). Furthermore, Davis et al. (1989) further clarified that PEoU as well as PU are the constructs that could significantly influenced INT and lead to the Usage of a Technology (UT), but not ATT. Therefore, statements highly proved that the action of removing ATT construct from TAM could proceed.

2.2 Review of variables

2.2.1 Dependent Variable (DV) – Intention to Use

According to Durodolu (2016), the intention to use pertains to the willingness and purpose of a user to utilize new technology. In simple terms, intention reflects an individual's understanding of technology adoption, specifically towards AI chatbots which subsequently lead to their actions (Kasilingam, 2020). Users who are anticipated to utilize the AI chatbots when provided with the chance are closely linked to their intention (Malik, 2021). Intention is a crucial factor that gauges the potential actions individuals may choose to pursue (Hsiao & Chen, 2021). Usually, users are based on their intention to make the final adoption decision (Yang et al., 2022).

2.2.2 Independent Variable (IVs) – Perceived Usefulness

Perceived usefulness (PU) reflect the degree to which the utilization of systems and technology can enhance effectiveness and productivity (Caffaro et al., 2020). PU, in academic context, define as the confidence a person in the capacity of a particular system to enhance academic performance (Al-Maatouk et al, 2020). Kumar et al. (2020) explained that PU of technology is evaluated based on its usefulness in everyday interactions. Additionally, Foroughi et al. (2023), have identified accuracy, reliability, productivity, and effectivity as factors influencing a user's assessment of PU. PU might be considered to be a person's conviction toward a particular system could enhance their productivity while engaging in a specific activity (Chatterjee et al., 2021). AI chatbots provide complementary resources, clear explanations, and well-structured responses that can increase users' perceived usefulness (Abdulhadi, 2023). Besides, users will perceive an AI chatbot that provides inaccurate, biased, and outdated information as unuseful and may abandon it (Chen et al., 2022).

2.2.3 Independent Variable – Perceived Ease of Use

Perceived Ease of Use (PEoU) refers to how a system presents itself as effortless and with an intelligible sense of ease (Alkarney & Almakki, 2022). It defines as the level to which individuals perceive their ability to adopt a new technology seamlessly and without facing difficulties (Caffaro et al., 2020). PEoU also encompasses the level of simplicity in obtaining information (Sallam et al., 2023). According to Rezvani (2022), user-friendliness, accessibility, and navigation are the key attributes of the evaluations of users in PEoU. These attributes determine how well a user understands how to utilize the AI chatbots to acquire information. Clearly, users undoubtedly demand AI chatbots that are easy to navigate, user-friendly, effective, and provide valuable information. (Abdulhadi Shoufan, 2023).

2.2.4 Independent Variable – Perceived Trustworthiness

Perceived Trustworthiness (PT) refers to the user's subjective belief that the system will behave in an integrated, trustworthy, and dependable manner (Anderson & Griffith, 2022). Likewise, PT is the thoughtful considerations one holds regarding another party about honesty, benevolence, as well as competency (Di Battista et al., 2020). PT is characterized by the user's eagerness to embrace and expose the technology (Faqih, 2022). Security and privacy, transparency, and trust in the technology are the key components of PT (Vorm & Combs, 2022). AI chatbots that are secure, provide credible and dependable responses and exhibit transparency can enhance its trustworthiness (Choudhury & Shamszare, 2023).

2.2.5 Independent Variable – Perceived Personalization

Perceived Personalization (PP) is the process of offering personalized content to the users based on their needs (Min et al., 2021). It is essential to state that key components of PP are the language style, relevance, and performance (Elsholz et al., 2019). Abdelkader (2023) further elaborated that language style refers to ChatGPT has been trained to be more engaging by able to generate human-like text; relevance refers to ChatGPT would only provide suggestions which tailored to users' requirements; performance refers to the result for ChatGPT to achieve personalize message such as improving customer experience and enhancing user satisfaction.

2.3 Conceptual Framework

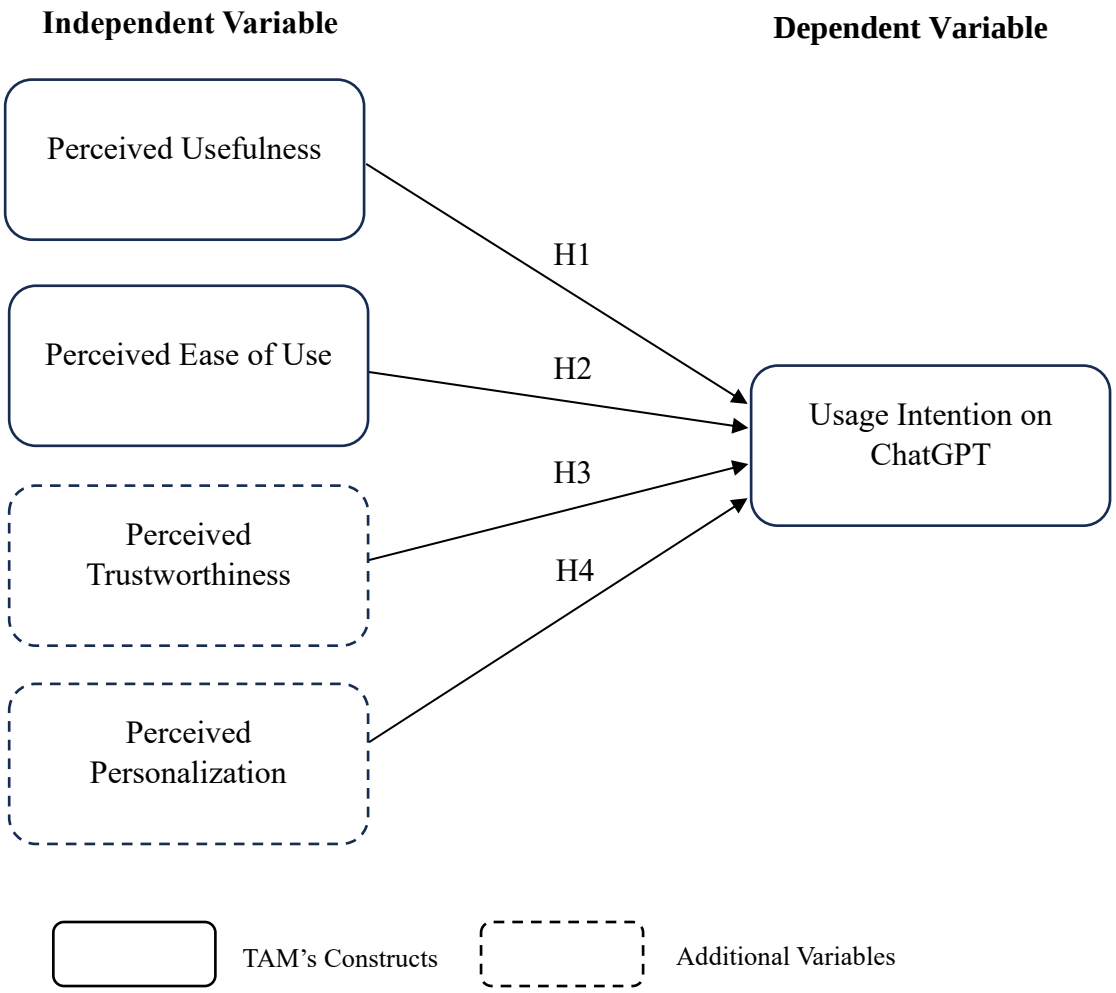

Figure 2.3: Conceptual framework

2.4 Hypothesis Development

Research by Worthington & Burgess (2021) proved that perceived usefulness had a positive correlation with usage intention. An individual with greater PU is more inclined to adopt ChatGPT (Ma & Huo, 2023). As proof, if students perceived ChatGPT as a useful tool which can help them find relevant information quickly, provide clear explanation, and well-structured responses, they are more inclined to adopt ChatGPT for academic purposes (Firat, 2023). Besides, if users perceive new technology as beneficial and simple to handle, the adoption intention will increase (Ho et al., 2020). As evidence, according to Foroughi et al (2023), ChatGPT makes academic content more accessible by providing explanations and summaries in plain language, thereby aiding students who struggle with complex texts and topics. Hence, the usefulness of ChatGPT in education enhances the intention of users to adopt it. In addition, Foroughi et al. (2023) demonstrated that individuals are more willing to utilize ChatGPT if they think it able to increase their academic productivity and enhance performance. Likewise, ChatGPT which provides accurate and updated information to the user will significantly impact its PU (Foroughi et al., 2023). Meanwhile, ChatGPT's biased, incorrect, and outdated information unquestionably reduced users' adoption intention for academic purposes (Enriquez et al., 2023). Herein, the following hypothesis has been proposed:

H1: Perceived Usefulness (PU) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

As mentioned by Foroughi et al. (2023), Perceived Ease of Use (PEoU) and Intention to Use (INT) is having a positive relationship. This is because ChatGPT act as an attractive education tool by having user-friendly feature which could significantly encourage students' usage intention toward ChatGPT. Additionally, the simplicity of ChatGPT may benefit students in reducing cognitive burden (Chen et al., 2021) which allow them to concentrate on the learning context instead of struggling with the complex technology. For example, Melody, a Form Five student uses ChatGPT for the first time in order to get the information about her debate topics, Chinese essay prompts and samples of job application letter in English version. She ended up with positive experience toward the usage of ChatGPT by saying that the replies from ChatGPT was 'super detailed' (Kelly, 2023) due to ease-of-use features and even free accessibility (OpenAI, 2023). Thus, the following hypothesis is put forward:

H2: Perceived Ease of Use (PEoU) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

According to Choudhury & Shamszare (2023), trustworthiness is a crucial factor that influences inclination of people to utilize AI chatbots. Additionally, Choung et al. (2022) have empirically verified that the reliability, safety, and competency of AI chatbots can increase its trustworthiness. In addition, Choudhury & Shamszare (2023) mentioned that credible and accurate information is regarded as ChatGPT's trustworthiness by the users. With that said, according to Avishek & Hamid (2023), the users' level of trust in ChatGPT positively influences users' intentions to adopt ChatGPT. According to Salah et al. (2023), the greater the level of trust, the greater the inclination to the adoption of ChatGPT. In other words, a lack of trust in ChatGPT can have deleterious effects such as underuse or hesitancy to the adoption of ChatGPT. Besides, Zhao & Bação (2021) mentioned that users are more willing to trust and adopt a new technology when recommended by experts and their close connections, such as family and friends. Therefore, the greater the positive word-of-mouth, the more likely users perceive the AI chatbots to be reliable, leading to an increased intention to adopt them. Hence, the following hypothesis has been proposed:

H3: Perceived Trustworthiness (PT) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

As stated by Foroughi et al. (2023), personalized learning experiences which provided by ChatGPT could enhance students' confidence in achieving better performance and encourage them to often utilize the tool. This statement had highly proved the positive association between perceived personalization and usage intention. The reason is because the desired information able to access by users in a short time frame (Srinivasan et al., 2002). Additionally, users would be more likely to utilise chatbots if they received personalised content which tailored with their preferences (De Cosmo et al., 2021) as its communication way is interesting that able to grab users' attention toward the services easily (Ansari & Mela, 2003). Chen et al. (2023) further explained that AI system with the personalization feature by providing the content based on students' needs which could significantly enhanced learning experiences and quality of education, and result to higher usage intention of chatbots (Kasneci et al., 2023). Therefore, the following hypothesis is put forward:

H4: Perceived Personalization (PP) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

2.5 Conclusion

Underlying theories are explored in this Chapter. A research framework is presented, along with constructed hypotheses that demonstrate the association between variables.

CHAPTER 3: METHODOLOGY

3.0 Introduction

The employed research methodology for this research will be covered in Chapter 3. Preliminary investigation will carried out by a pilot study, involving a sample size of 30 participants. Meanwhile, detail explanation of proposed data analysis tool will included.

3.1 Research Design

Quantitative research is employed for this research. The purpose is to further understand the determinants that affect usage intention on ChatGPT among university students in Malaysia. Adedoyin (2020) explained that quantitative research is a methodical study of a phenomenon through the collection of numerical data and the apply of computer, statistical, or mathematical techniques. It is essential to mention that quantitative research is suitable to apply in this research because it allows us to to surpass quantitative data as well as provides us a full comprehension of the participants' ideas, beliefs, and view, which we can utilise to improve our comprehension of the research topic (Iqbal et al., 2022).

Besides, there are many different kinds of quantitative research such as descriptive, correlational, experimental, causal research (Muhammad Hassan, 2023) and etcetera. Since Håkansson (2013) stated that one of the most often used quantitative research design are survey, which is the major method of descriptive research, therefore, this study will solely focus on descriptive research. Shona (2019) further elaborated that descriptive research can respond to inquiries about what, where, when and how question, utilized many research techniques to examine multiple variables. Additionally, it often needs a sample of hundreds or even thousands of people to accurately assessed the variables' relationship (Mehrad and Zangeneh,

2019). In order to support the above statement, the past studies that done by Bonsu and Baffour-Koduah (2023); Shahsavar & Choudhury (2023); Strzelecki (2023); Choudhury & Shamszare (2023) are also applying descriptive research in their study context.

Apart from that, one of the observational studies, cross-sectional study will be chosen as the further classification of descriptive research. Cross-sectional study is a particular type of survey where standardised data is gathered from a cross-section of the pre-determined population at a specific moment in time (Pandis, 2014). Cross-sectional study is more desirable than longitudinal study as it usually affordable and simple to carry out (Pandis, 2014).

3.2 Sampling Design

3.2.1 Target Population

University students, age from 18 to 50 years old and even older, currently pursuing their academic journey (Urban Locker, 2022) in Malaysia, have been selected as the target population. Since the authors are currently living in Malaysia, therefore, this study will solely concentrate on respondents who live in Malaysia which is easier for the authors to carry out the survey. Furthermore, the sampling frame for this research will be available but not accessible as of the large target population which the list of respondents might available but not accessible due to the privacy concern.

3.2.2 Sampling Technique

One of the method, non-probability sampling is employed in the participant selection process. This is because participants are chosen in term of easy to access rather than at random (Showkat & Parveen, 2017). Thus, quota sampling is implemented as the major sampling method that will be focused on this study.

Quota sampling refers to a predetermined number or proportion units of target respondents are selected based on specific characteristics including age, income, gender, education and etcetera (Yang & Banamah, 2014). It used for the purpose of collecting selected participants that represent the population of interest (Muhammad Hassan, 2023). This sampling is widely in market research as it can be conducted in a quick way whereby researchers are allowed to select anyone as long as the selected individual able to meet the specific requirement (Yang & Banamah, 2014).

Quota sampling will be applied in the sector of 'Type of Malaysia Universities' whereby this study will solely focus on 5 type of Malaysia Universities such as Universiti Tunku Abdul Rahman (UTAR), Tunku Abdul Rahman University of Management and Technology (TAR UMT), University of Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), and Universiti Utara Malaysia (UUM). The reason is because these are the universities that frequently conducted webinar or talk which related to ChatGPT context and the statement had been proved by the newspaper or magazine that written by UTAR (2023); TAR UMT (2023); UPM (2023); UKM (2023); UUM (2023).

With 382 respondents in the sample size for this study, a predetermined number of 76 respondents will be collected for each university.

3.2.3 Sample Size

As stated by Stephanie (2023), sample size refer to a fraction of target population which selected to take part in a survey. Krejcie and Morgan table which developed in 1970 helps researchers choose an appropriate number of participants from a population group (Krejcie & Morgan, 1970). The table act as one of the efficient methods for determining the sample size as the researchers no longer require to do research on each sample separately (Syed Abdul Rehman Bukhari, 2021).

According to Population Pyramid (2023), population of Malaysia amounted 34.31 million, whereby university students who studying in UTAR accounted for more than 20,000 (UTAR, 2023); TAR UMT university students accounted for more than 28,000 (TAR UMT, 2023); UPM university students accounted for 29,060 (UPM, 2023); UKM university students accounted for 25,525 (UKM, 2023); and UUM university students accounted for 32,819 (UUM, 2023).

With the total of 135,404 university students in all the selected universities, it have proved that our target population have exceed 75,000. Therefore, sample size of respondents for the study is 382 to represent the target population *(refer to Appendix 2.0)*.

3.3 Data Collection Methods

Data collection serve as an important part of obtaining and evaluating information obtained from a wide range of credible sources to obtain answers for the issues, assess the hypotheses, and evaluate the findings (Guest et al., 2020). The approaches to data collection can be classified as either primary data or secondary data; therefore. Consequently, this study uses primary data.

3.3.1 Primary Data

A dataset acquired firsthand by the researcher from its original source, specifically for the purpose of a particular study, known as primary data (Sileyew, 2020). It is more authentic and credible as it has not been manipulated by humans. Primary data can be collected through various methods (Schuurman, 2020). The technique for collecting primary data in this study will involve Online questionnaires. This technique is not only cost-effective but also an efficient way to effectively gather extensive data from a larger pool of participants, it becomes possible to acquire data within a short timeframe (Djakasaputra et al. ,2021).

Google Forms will serve as the main research tool for this research, offering basic data validation, conditional logic, and a range of powerful features. Utilizing online questionnaires allows researchers to efficiently reach numerous participants at a low cost, given their excellent scalability (QuestionPro, 2021). The Online questionnaire for this study will be disseminated via emails, social media as well as QR codes. Collecting primary data involves distributing surveys to university students.

3.3.2 Research Instrument

Instruments for research, such as scales and questionnaires, were developed to collect data from study participants, and focus on their interest (Des Moines University, 2018). Additionally, the questionnaire design aligns with the objectives of this study, and each section was straightforward and user-friendly to ensure clarity and simplicity for the targeted respondents. Online surveys were utilized in this research due to their cost-effectiveness in comparison to other data collection methods (Oden, 2018). After completing the survey, we assembled the online questionnaires.

3.3.3 Questionnaire Design

A questionnaire serves as a research instrument comprising a series of questions aimed at gathering information from participants (Mcleod, 2018). This questionnaire, conducted in English, consists of three sections: Pre-Screening, Part A, and Part B. The pre-screening question is administered to validate respondents' eligibility before progressing to the subsequent section. In Part A, respondents are requested to furnish their demographic information, encompassing gender, age, and race.

In Part B, it focus of the questions lay in the responses and views of target respondents regarding the DV (Int) and determinants (IV: PEoU, PU, PT, PP). The Five-Point Likert Scale utilized in section B features ratings ranging from "1: strongly disagree" to "5: strongly agree." (Market Research Guy, 2020). It provides a distinct and clear midpoint that assists respondents in expressing and describing their expressing their level of agreement with a question clearly.

Constructs	Items		Sources
DV: Intention to Use (INT)	INT 1	I am willing to make decisions based on the suggestions provided by ChatGPT	Choudhury & Shamszare (2023); Shahsavar & Choudhury (2023)
	INT 2	I am willing to use ChatGPT in the future	
	INT 3	I plan to use ChatGPT more frequently	
	INT 4	I will recommend others to use ChatGPT	
IV: Perceived Usefulness (PU)	PU 1	ChatGPT is more beneficial than other information sources that I have used previously	Sallam et al. (2023); Haleem et al. (2022)
	PU 2	ChatGPT enables me to save time in searching for information	
	PU 3	ChatGPT helps me in comprehending difficult topics and concepts more effectively	
	PU 4	I believe that using ChatGPT has enhanced my academic performance	
	PU 5	ChatGPT provide the latest and updated information and resources	
Perceived Ease of Use (PEoU)	PEoU 1	ChatGPT is simple to use	Sallam et al. (2023)
	PEoU 2	ChatGPT is easy to learn by the first time user	
	PEoU 3	It does not need extensive technical knowledge when using ChatGPT	
	PEoU 4	Using ChatGPT is not challenging for me	

Perceived Trustworthiness (PT)	PT 1	ChatGPT provide me the reliable information	Foroughi et al. (2023); Xu et al. (2023); Choudhury & Shamszare (2023)
	PT 2	I need to use ChatGPT for completing the tasks	
	PT 3	I completely rely on ChatGPT's responses to complete the duties	
	PT 4	ChatGPT could protect my privacy and personal information	
	PT 5	ChatGPT is capable of providing information I require	
Perceived Personalization (PP)	PP 1	It is fun to use ChatGPT in my studies	Foroughi et al. (2023);Shoufan (2023); Yilmaz & Yilmaz (2023); Abdelkader (2023)
	PP 2	I enjoy using ChatGPT in my stdueis	
	PP 3	ChatGPT providing information on the particulars of the curious subject	
	PP 4	ChatGPT can interact with us in our own language	
	PP 5	ChatGPT creates human-like friendly responses	
	PP 6	ChatGPT provide information that was tailored to my needs	
	PP 7	I feel that ChatGPT understood my preferences and requirements	

Table 3.3.3: Sources of Measurement Items

3.3.4 Pilot Test

A pilot test serves as a brief feasibility examination designed to assess different facets of survey methodologies prior to their deployment in broader, more conclusive research. Sample size guidelines offer a straightforward method of determining the sample size for a pilot test (Lowe, 2019). Browne propose a minimum of 30 participants is required for the sample set in the pilot test, while Kieser and Wassmer propose a range of 20 to 40 participants (Whitehead et al., 2016). Samples ranging from 20 to 40 participants each are assessed their capacity to deliver precise estimates in achieving various potential objectives (Sharma et al., 2020). Therefore, this pilot test will involve distributing the questionnaire to 30 participants who meet the requirements outlined in Chapter 3.2.2 on Sampling Techniques.

3.3.5 Reliability Test

Reliability is a key component quality of the test, assessing the coherence as well as consistency of performance evaluations (Widasmara et al., 2022). Schrepp (2020) explains that Cronbach's Coefficient Alpha (α) serves the purpose of calculating the system reliability, while also indicating the level of items within a set exhibit a positive correlation. Adeniran (2019) notes that a Cronbach's alpha value nearing 1 indicates stronger internal consistency reliability, with values above 0.60 considered acceptable and those below 0.60 suggesting unreliability. All constructs underwent Cronbach's alpha reliability analysis to assest the consistency of items within them. Cronbach's Coefficient Alpha (α) can be categorized into six rankings as following:

Alpha Coefficient Range	Strength of Association
$\alpha = 0.9$	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

Table 3.3.5.1: Rules of Thumb of Cronbach's Alpha Coefficient Size

3 Source: Stephanie (2021).

Variables		N of items	Cronbach's Alpha	Results pf Reliability
Dependent Variable (DV)	INT	4	0.868	Very Good
Independent Variable (IV)	PU	5	0.701	Good
	PEoU	4	0.851	Very Good
	PT	5	0.859	Very Good
	PP	7	0.899	Very Good

Table 3.3.5.2: Reliability Analysis of Pilot Study

3.4 Proposed Data Analysis Tool

The present study has made used of Statistical Package for Social Science (SPSS). As mentioned by Pedamkar (2019), the SPSS is predominantly employed in fields like the research of educational and marketing for statistical data analysis. Additionally, SPSS enables researchers to double-check and validate test assumptions and conduct precise frequency analyses. Hence, SPSS emerges as the optimal choice for this research, offering extensive statistical capabilities for precise result analysis and the capability to conduct comparisons, both parametric and non-parametric analyses.

3.4.1 Descriptive Analysis

Descriptive analysis is applied to present the gathered data through tables, graphs, and charts (Shabbir & Wisdom, 2020). Additionally, descriptive analysis is employed to compute, clarify, and summarize research data in a logical, purposeful, and constructive manner, as noted by Kaliyadan & Kulkarni (2019). It also converted the original data into a comprehensible format, ensuring all vital information is comprehensible. Therefore, descriptive analysis aids in presenting and summarizing data more effectively and straightforwardly (Mengist et al., 2020). In our research, descriptive analysis was utilized to identify an overview of demographic data from the target respondents.

3.4.2 Inferential Analysis

With regard to population characteristics, inferential analysis was utilized to make assumptions, predictions, explanations, and conclusions, as well as to validate the proposed hypothesis. In simpler terms, inferential analysis was employed to evaluate a particular hypothesis. This research incorporates Pearson's Correlation Analysis and Multiple Regression Analysis.

3.4.2.1 Pearson Correlation Coefficient Analysis

Pearson's correlation coefficient analysis (r) was utilized to ascertain the level of correlation between two or more quantitative variables (Fu et al., 2020). Meanwhile, the IV (PEoU, PU, PT, and PP) and DV (INT) of this study were utilized to evaluate how well the two variables are correlated.

According to Alsaqr (2021), the relationship coefficient varies between a range of +1.00 and -1.00, where a positive result suggesting that the linear relationship is positive. According to Pandey (2020), there is a flawless positive association between the variables when the correlation value is +1. As per Pandey (2020), , a perfect positive association between the variables is shown by a correlation result of +1. When the result is -1, it signifies an impeccable negative relationship between two variables.

Correlation Coefficient	Strength of Correlation
± 0.81 to ± 1.00	Very strong correlation
± 0.61 to ± 0.80	Strong correlation
± 0.41 to ± 0.60	Moderate strong correlation
± 0.21 to ± 0.40	Weak correlation
± 0.00 to ± 0.20	Very weak correlation

Table 3.4.2.1: Correlation Coefficient Range

Source: Adopted from Malhotra, N.K. (2013).

Marketing research: An applied orientation (6th ed.). New jersey: Pearson.

3.4.2.2 Multiple Regression Analysis

Grant (2021) states that multiple regression analysis, an extension of simple linear regression, enables the examination of the relationship between a dependent variable and multiple independent variables. Additionally, it evaluates the strength of these relationships. Primarily, this analysis is used to determine the impact of different independent variables on a dependent variable. Additionally, this analysis provides percentages indicating the model fit and the total variance explained (Sureiman & Mangera, 2020). Therefore, the primary objective of using multiple regressions is to evaluate whether PEoU, PU, PT, PP exert a positive influence on intention to adopt ChatGPT.

Furthermore, the multiple correlation coefficient (R) serves as an indicator of predictive accuracy and quality, the higher value suggests that the impact of the independent variables on the dependent variable is greater (Rath, Tripathy, & Tripathy, 2020). Moreover, according to Lai et al., (2022), the R-square (coefficient of determination) signifies the total explained variance. A high R-square indicates that a significant proportion of the variation in the dependent variable.

The common form of the multiple regression equation (Kurniatullah & Pramudi, 2017) is as outlined below:

$$Y = a + b1X1 + b2X2 + b3X3 + b4X4 + b5X5 + \ldots + bkXk$$

The multiple regression equation derived for this study is as outlined below:

$$INT = a + b1(PEoU) + b2(PU) + b3(PT) + b4(PP)$$

Whereby,

INT	=	Intention to adopt ChatGPT
A	=	Constant
PEoU	=	Perceived Ease of Use
PU	=	Perceived Usefulness
PT	=	Perceived Trustworthiness
PP	=	Perceived Personalization

By employing this equation, researchers can determine which independent variable (IV) has the greatest influence on the dependent variable (DV).

3.5 Conclusion

In conclusion, a thorough explanation of the methodology employed in Chapter 3 is provided. Consequently, the obtained results will be discussed and analyzed in the next section Chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Each of the data analysis's result will be provided with a detail explanation in current Chapter. The findings included Descriptive Analysis, Internal Consistency Analysis, and Inferential Analysis whereby all data that collected by using questionnaire surveys were evaluated using the tool of 'IBM SPSS Statistic 27'.

4.1 Descriptive Analysis

4.1.1 Gender

Based on *Figure 4.1.1*, female respondents accounted for 62.83% (N=240), while male respondents accounted for 37.17% (N=142).

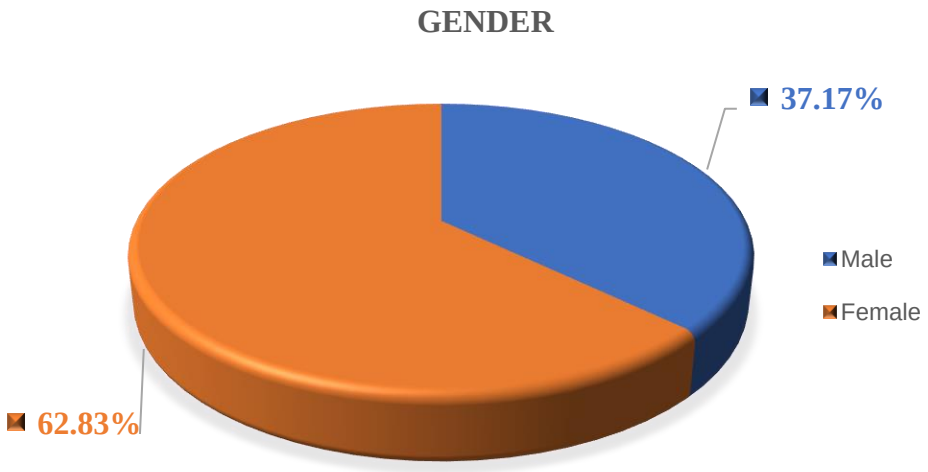

Figure 4.1.1: Gender

4.1.2 Age

Figure 4.1.2 shown that respondents who age between 18 – 25 years old accounted for 90.58% (N=346); respondents who age between 26 – 33 years old accounted for 7.33% (N=28); respondents who age between 34 – 41 years old (N=3) and 42 – 49 years old (N=3) accounted for 0.79%; while respondents who age between 50 years old and above accounted for 0.52% (N=2).

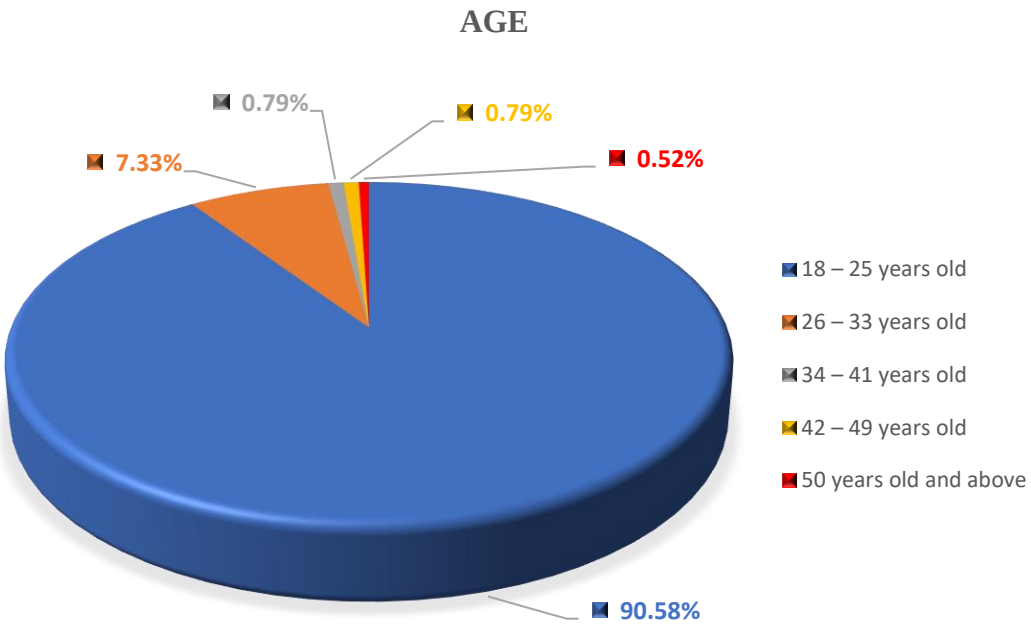

Figure 4.1.2: Age

4.1.3 Race

Based on *Figure 4.1.3,* Chinese respondents accounted for 97.38% (N=372); follow by 1.31% of the respondents are other races including Bumi Putra (N=1), Dusun (N=1), Iban (N=1), Murut (N=1), and Sino Kadazan (N=1); then 1.05% of the respondents are Malay (N=4); and 0.26% of the respondent is Indian (N=1).

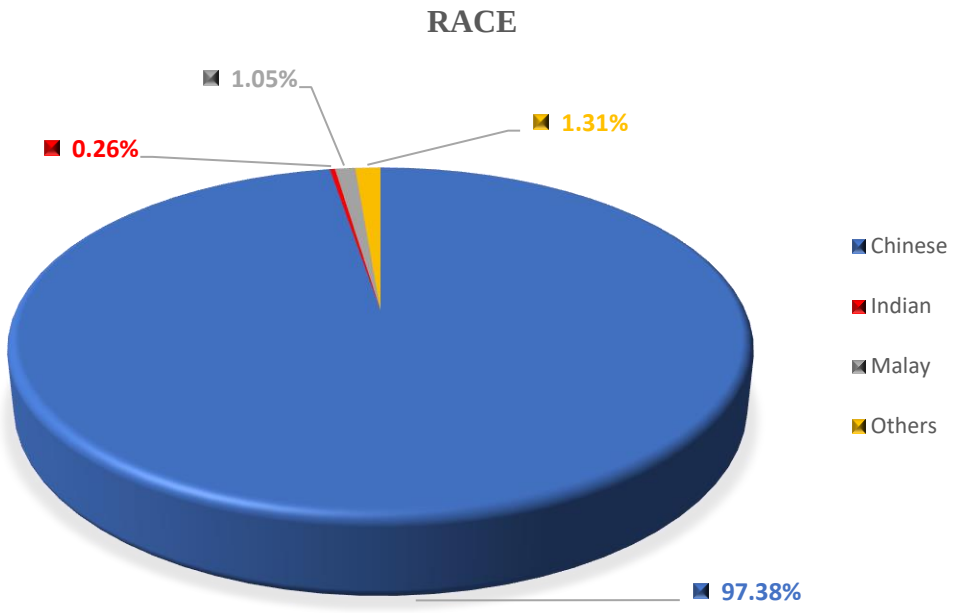

Figure 4.1.3: Race

4.1.4 Level of Education

According to *Figure 4.1.4*, 73.30% of the respondents are Undergraduate students (N=280); respondents who are Foundation students accounted for 21.47% (N=82); and 5.24% of the respondents are Postgraduate students (N=20).

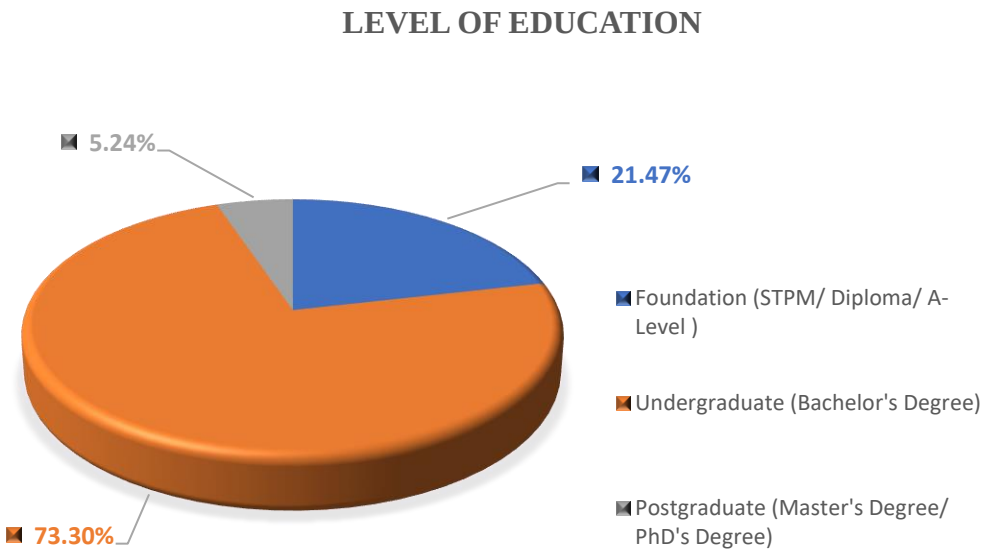

Figure 4.1.4: Level of Education

4.1.5 Type of Malaysia Universities

According to *Figure 4.1.5*, respondents who are from Universiti Tunku Abdul Rahman (UTAR) accounted for 30.10% (N=115); respondents who are from Tunku Abdul Rahman University of Management and Technology (TAR UMT) accounted for 25.13% (N=96); 17.02% of the respondents are from University of Putra Malaysia (UPM) (N=65); 14.66% of respondents are from Universiti Kebangsaan Malaysia (UKM) (N=56); and 13.09% of respondents are from Universiti Utara Malaysia (UUM) (N=50).

It can be observed that the number of UTAR and TAR UMT respondents have accounted higher as compared to the number of UPM, UKM and UUM respondents. This is due to the reason of UTAR and TAR UMT respondents are high accessibility as compared to UPM, UKM and UUM respondents through online platforms. This had resulted in a total percentage of 55.23% of target respondents who are from UTAR and TAR UMT which higher than the total percentage of 44.77% of target respondents who are from UPM, UKM and UUM.

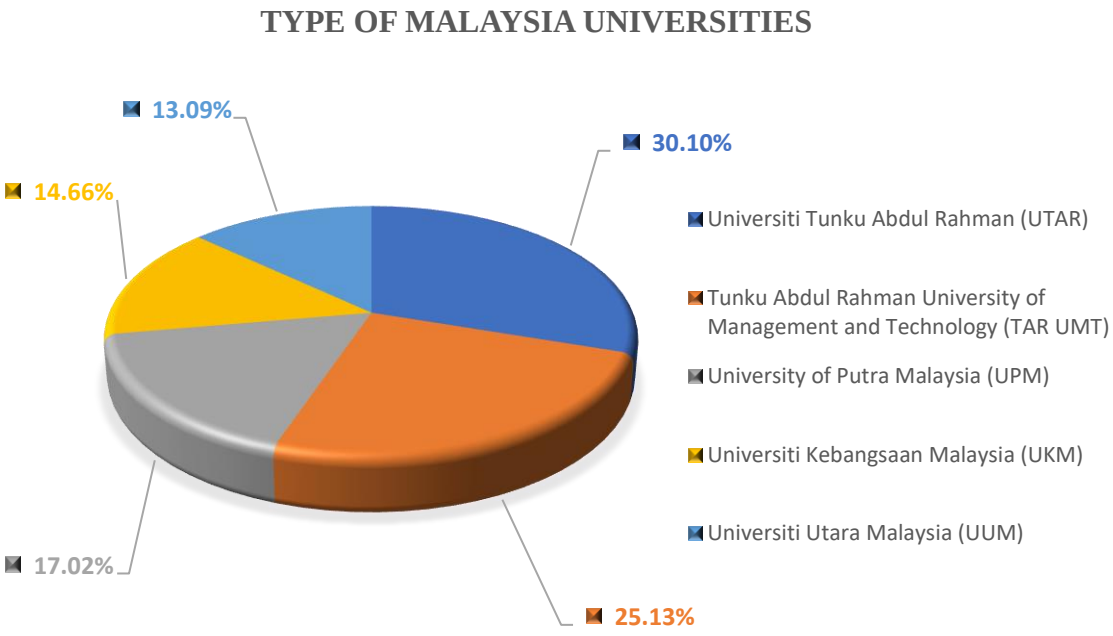

Figure 4.1.5: Type of Malaysia Universities

4.2 Internal Consistency Analysis

4.2.1 Reliability Test

A reliability assessment was carried out with 382 responses gathered; the detail outcomes are shown in *Table 4.2.1*. The values of Cronbach's Alpha provide insight into the reliability of the data collected. The independent variables (IVs), including PP (0.900) is considered as excellent reliability, PEoU (0.835) is considered as very good reliability, while PU (0.717) and PT (0.728) are deemed as good reliability. Additionally, the dependent variable (DV), which is the usage intention on ChatGPT (INT), has a Cronbach's coefficient alpha value of 0.870, indicating very good reliability. In the realm of Cronbach's alpha, if variable's alpha value exceeds 0.90 is deemed to have excellent reliability, following the rule of thumb, while a score ranging from 0.7 to 0.9 indicates high reliability (Nawi et al., 2020). Therefore, all variables in this study demonstrate a high degree of accuracy.

Variables		N of items	Cronbach's Alpha	Results pf Reliability
Dependent Variable (DV)	INT	4	0.870	Very Good
Independent Variable (IV)	PU	5	0.717	Good
	PEoU	4	0.835	Very Good
	PT	5	0.728	Good
	PP	7	0.900	Excellent

Table 4.2.1: Results of Reliability

4.3 Inferential Analysis

4.3.1 Pearson Correlation Coefficient Analysis

The Pearson Correlation Coefficient evaluates the direction and magnitude of the linear correlation among a pair of variables . Based on the *Table 4.3.1*, correlation coefficient for each IV with the DV falls within the range of 0.490 to 0.714. Selvanathan et al. (2020) suggest that a moderate relationship is indicated if the value lies between 0.4 and 0.6, while a value of 0.6 to 0.8 indicates a strong relationship. Consequently, PEoU (0.490) and PT (0.585) show moderate positive relationships with (INT), whereas PU (0.714) and PP (0.684) demonstrate strong positive relationships with INT.

		PU	PEoU	PT	PP	INT
PU	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	382				
PEoU	Pearson Correlation	.521**	1			
	Sig. (2-tailed)	.000				
	N	382	382			
PT	Pearson Correlation	.688**	.327**	1		
	Sig. (2-tailed)	.000	.000			
	N	382	382	382		
PP	Pearson Correlation	.724**	.559**	.713**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	382	382	382	382	
INT	Pearson Correlation	.714**	.490**	.585**	.684**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	382	382	382	382	382

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

Table 4.3.1: Analysis of Pearson Correlations Coefficient

4.3.2 Multiple Regression Analysis

As stated by Yang et al. (2019), a moderate level of impact size is demonstrated by an R-Square score between 0.5 and 0.7. Referring to *Table 4.3.2.1*, the statistical significance of 57.5% of the findings is indicated by an R-Square value of 0.575 when analysing the regression line. Thus, collectively, all the independent variables (IVs) account for 57.5% effect on the determinants of usage intention on ChatGPT among university students in Malaysia.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758[a]	.575	.570	.54185

a. Predictors: (Constant), PP, PEoU, PT, PU

Table 4.3.2.1: Summary of the Model

Based on *Table 4.3.2.2*, the research has a F-value of 127.338, and its significance level (P-value) is fewer than 0.01. This signifies that the independent variables (IVs) have a significant relationship with the dependent variable (DV), given that the P-value falls below the 0.05. Hence, PU, PEoU, PT, and PP overall can well demonstrate the variation in intention (INT) towards ChatGPT among university students in Malaysia.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.546	4	37.387	127.338	.000[b]
	Residual	110.688	377	.294		
	Total	260.234	381			

a. Dependent Variable: INT
b. Predictors: (Constant), PP, PEoU, PT, PU

Table 4.3.2.2: The results of Anova Test

From the *Table 4.3.2.3,* it shows the P-values for PP and PU are less than 0.001, indicating strong significance, while PEoU has a P-value of 0.027, still below 0.05. Therefore, this implies that IVs such as PP, PU, and PEoU have a notable impact on INT (DV). Conversely, PT accounted for 0.195 (P-value), exceeding 0.05, suggesting no significant association with INT.

Model		Unst. Coefficients		St. Coefficients			95.0% Confidence Interval for B		Correlations		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	.239	.194		1.235	.218	-.142	.621			
	PU	.474	.062	.412	7.618	.000	.352	.596	.714	.365	.256
	PEoU	.115	.052	.094	2.223	.027	.013	.216	.490	.114	.075
	PT	.068	.053	.068	1.297	.195	-.035	.172	.585	.067	.044
	PP	.311	.063	.284	4.908	.000	.186	.436	.684	.245	.165

a. Dependent Variable: INT

Table 4.3.2.3: Coefficients of equation

Additionally, the standardized coefficient of PU (0.412) indicates that it has the greatest influence among the other independent variables (IVs), given its highest absolute value. The unstandardised coefficients of PU, PEoU, and PP positively correlate with INT. Hence, the multiple regression equation that follows explains the determinants affect usage intention on ChatGPT among university students in Malaysia and independent variables (IVs):

INT = 0.239 + 0.474 (PU) + 0.115 (PEoU) + 0.311 (PP)

Whereby,

INT	=	Intention to Use
PU	=	Perceived Usefulness
PEoU	=	Perceived Ease of Use
PP	=	Perceived Personalization

As a result, the equation above demonstrate that the independent variables PU, PEoU, and PP positively contribute to the usage intention on ChatGPT among university students in Malaysia. In conclusion, H1, H2 and H4 are supported while H3 is not supported.

4.4 Conclusion

All the collected information as well as data were thoroughly analysed and interpreted in Chapter 4. The findings demonstrate that perceived usefulness (PU), perceived ease of use (PEoU), and perceived personalization (PP) played a essential function in influencing Malaysian university students' intention (INT) to adopt ChatGPT.

CHAPTER 5: DISCUSSION, CONCLUSION, AND IMPLICATIONS

5.0 Introduction

In the present Chapter, main findings will be encompassed, and a summary of the statistical results will be provided, as well as offer suggestions for future research endeavors. Besides, research implications will be examined comprehensively, aiming to furnish recommendations for enhancing the quality of future studies.

5.1 Discussions of Major Findings

Hypothesis	Significant Value	Result
H1: Perceived Usefulness (PU) significantly influences the usage intention toward ChatGPT among university students in Malaysia.	.000	Supported
H2: Perceived Ease of Use (PEoU) significantly influences the usage intention toward ChatGPT among university students in Malaysia	.027	Supported
H3: Perceived Trustworthiness (PT) significantly influences the usage intention toward ChatGPT among university students in Malaysia.	.195	Not Supported
H4: Perceived Personalization (PP) significantly influences the usage intention toward ChatGPT among university students in Malaysia.	.000	Supported

Table 5.1: Hypothesis testing's results

H1: Perceived Usefulness (PU) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

According to the results, H1 is supported since its p-value is below 0.05.This indicates that perceived usefulness (PU) significantly impacts Malaysian university students' intention to adopt ChatGPT. This research has revealed that Malaysian university students place significant emphasis on the usefulness of ChatGPT in performing beneficial functions, such as aiding students in saving time when searching for information, facilitating better comprehension of complex subjects, and ultimately enhancing academic productivity and performance *(refer to Appendix 8)*. This outcome aligns with previous research findings. According to Foroughi et al. (2023), users' perceived usefulness significantly influences their desire to adopt ChatGPT if they believe it will Result in favorable results such as enhanced academic achievement. Similarly, Firat (2023) discovered that ChatGPT's capacity to offer accurate and useful information ultimately affects users' intention to adopt it. In short, as AI chatbots such as ChatGPT become increasingly influential and helpful across various domains, including academia, students expect more benefits from ChatGPT and its ability to provide extended features that can meet their needs.

H2: Perceived Ease of Use (PEoU) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

The p-value of PEoU is below 0.05, it demonstrates that PEoU has significant impacts on Malaysian university students' intention to adopt ChatGPT. According to the findings of this research, we found that Malaysian university students prefer AI chatbots like ChatGPT, which offer a user-friendly interface, making it simple for them to access academic information with minimal effort and time *(refer to Appendix 8)*. When ChatGPT offers ease of use, it becomes more accessible and enjoyable for a wide range of users. As evident, ChatGPT is more likely to be embraced by users when it is perceived as extremely user-friendly particularly for first-time users (Kelly, 2023). In contrast, if an AI chatbot is difficult to use, users are more inclined to reject it or switch to alternative toolkits. This is because learning to use new technology requires energy and can lead to user frustration (Foroughi et al., 2023). Clearly, users are more inclined to have favorable intentions towards ChatGPT when they perceive it as easy, simple, and effortless to use. Thus, achieving a high level of ease of use in ChatGPT applications is essential to provide users with satisfying user experiences.

H3: Perceived Trustworthiness (PT) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

According to the findings, P-value for PT exceeds 0.05, indicating that PT lacks significant influence on INT, H3 is thus not supported. This contradicts a prior study that proved that perceived trustworthiness could positively influence the intention to adopt ChatGPT (Avishek & Hamid, 2023). The insignificant result of this research could be attributed to Malaysian university students not worried about the security and privacy of ChatGPT, as ChatGPT consistently enhances its security and privacy system.

According to Arya (2023), ChatGPT places security as its top priority and has implemented a series of measures in technology development and management to ensure the system's safety. For instance, OpenAI, ChatGPT's parent company, has established a comprehensive security audit system to regularly assess and address ChatGPT’s potential vulnerabilities. Additionally, ChatGPT meticulously filters and cleans all input text to eliminate any potentially malicious code or sensitive information. Furthermore, ChatGPT is committed to continuously strengthening its investment and efforts in security to guarantee that ChatGPT can deliver enhanced services to users within a secure and reliable environment (Haranas, 2024). As a result, the dedication of ChatGPT underscores their commitment to providing users with a safe and trustworthy experience, in addition to address ChatGPT’s security concerns. Hence, the user's perceived trustworthiness does not significantly impact Malaysian university students' intention to employ ChatGPT.

H4: Perceived Personalization (PP) significantly influences the usage intention toward ChatGPT among university students in Malaysia.

The results indicate that H4 is supported, given that the p-value is below 0.05, suggesting that perceived personalization significantly influences Malaysian university students' intention to adopt ChatGPT. As proof, this research has discovered that Malaysian university students highly value the level of personalization when utilizing ChatGPT. For instance, Malaysian university students place greater emphasis on ChatGPT's capability to engage with them in human-like friendly responses, deliver highly customized content, and create an enjoyable experience during interaction *(refer to Appendix 8)*. This outcome is aligned with De Cosmo et al. (2021), who suggested that users are more inclined to use AI chatbots when they receive personalized content tailored to their preferences. Similarly, Foroughi et al. (2023) found that personalized learning experiences provided by ChatGPT could enhance students' confidence in achieving better academic performance encourage them to increase their usage of the tool on a regular basis. Hence, it can be inferred that Malaysian university students believe that perceived personalization holds significant value in facilitating their efficient utilization of ChatGPT.

5.2 Implications of The Study

5.2.1 Theoretical Implications

PU has a significant influence toward the UI on ChatGPT among Malaysian university students, which aligned with the fundamental concept of TAM. Based on TAM, individuals are more willing to utilize a technology if they thinks it is beneficial in term of helping them to facilitate their works or other duties. This research had emphasized how crucial PU is in influencing the UI among university students in Malaysia. Thus, theoretical implications suggest that aimed to enhance PU by highlighting the benefits and functionality or performance of ChatGPT in academic context could result in higher usage intention.

Besides, TAM also claimed that individuals are more willing to use a technology if they thinks it is easy to use. This statement has supported in this study by proving PEoU has a significant influence toward the UI on ChatGPT among Malaysian university students. Hence, theoretical implications suggest that aimed to enhance PEoU by highlighting ChatGPT's user-friendly features in term of improving ChatGPT's user interface and navigation system could result in higher usage intention.

Moreover, PT act as one of the IV that has an insignificant impact toward UI on ChatGPT among Malaysian university students. Although PU and PEoU are the main construct of TAM, however, the additional variable – PT has provided an insight toward the impact of PT on UI of ChatGPT. As a result, theoretical implications suggest that aim to enhance PT by highlighting the credibility of ChatGPT in terms of its transparency on security precautions and privacy protection, may have little effect on the increase usage intention.

Lastly, PP has a significant influence toward the UI on ChatGPT among Malaysian university students. This result has emphasized the important of a technology with customized experiences in order to meet the unique preferences or requirement from each user, which lead to UI next. Thus, theoretical implications suggest that aimed to enhance PP by highlighting ChatGPT's personalized experiences in term of human-like friendly responses, deliver highly customized content, and create an enjoyable experience during interaction, could result in higher usage intention.

5.2.2 Managerial Implications

PU has a significant impact toward the UI on ChatGPT. Therefore, Educational Administrator could make use of this result by designing courses and assignments that specifically study on ChatGPT relevant context in order to facilitate university students on their concept clarification towards the functionalities of ChatGPT.

Besides, the result of PEoU has a significant influence toward the UI on ChatGPT in this study has contributed to the User Interface Designers. They could focus on improving ChatGPT's user-friendly interface by providing pop up guidelines instead of sneaky small print. For example, the sentence of 'ChatGPT can make mistakes. Consider checking important information' is purposely design in a very small font until users did not even aware about it. Thus, pop up guidelines is an essential element that should be included in the feature of ChatGPT that could serve as navigation, command, and helpful prompts to the users before they started to use.

Furthermore, PT has an insignificant influence toward the UI on ChatGPT which indicates that Cybersecurity Specialist could continuously enhance the security of ChatGPT by implementing professional data security measures in order to guarantee ChatGPT can comply with the necessary privacy and data protection standards.

Lastly, PP has a significant influence toward the UI on ChatGPT. This result could contribute to AI Developers. This is because they are the one who expert in coding which could help Open AI company to design a new algorithm that able to analyse user's emotion. This could significantly enhance the quality of personalized response from ChatGPT.

5.3 Limitations and Recommendations of Study

5.3.1 Limitations

It can be observed that R-square value of 0.575 suggests a moderate effect size and accounts for 57.5% of the variance in the determinants affecting usage intention on ChatGPT among Malaysian university students. However, it is crucial to understand that regression model might not have taken other factors or unmeasured variables into account. This implies that factors other than PU, PEoU, PT and PP may also affect university students' intention to use ChatGPT. Thus, the complexity of factors influencing adoption behavior may not be fully captured by the explained variation of 57.5%.

5.3.2 Recommendations

Thus, future studies could consider adding other factors or constructs that might have the potential to affect university students' usage intention toward ChatGPT in order to overcome this limitation. For example, social influences, age, habit and etcetera.

Additionally, instead of employing quantitative method, future researchers who are studying relevant context also suggested to use qualitative research methods like interviews and focus groups that able to guide them in finding new variables or get insight into the nuances of users' perceptions toward the usage intention of ChatGPT.

5.4 Conclusion

In a nutshell, the discussion of the major findings was based on the hypothesis testing's results. Besides, theoretical as well as managerial implications was proposed with the purpose of providing a greater understanding and suggestion to the future practitioners. Lastly, limitations and recommendations were stated out in this research as a point of reference for future researchers investigating relevant contexts to make further improvements on the research quality.

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APPENDICES

Appendix 1.1: Survey Questionnaires

Supervisor endorsement

Name: Dr. Khor Saw Chin

Sign: Khor

Date: 19.09.2023

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UNIVERSITI TUNKU ABDUL RAHMAN

Faculty of Business and Finance

BACHELOR OF MARKETING (HONS)

FINAL YEAR PROJECT

Determinants that affect usage intention on ChatGPT among university students in Malaysia.

Dear Respondents,

We are final-year undergraduate students who are currently pursuing the Bachelor of Marketing (Hons) from Universiti Tunku Abdul Rahman (UTAR). We are conducting a research project which is titled "Determinants that affect usage intention on ChatGPT among university students in Malaysia.". This research aims to achieve an in-depth understanding of the factors that affects Malaysia university students' usage intention on ChatGPT.

This survey consist of two sections. Please take a few moments to answer the following questions. There will be no risk involved in your participation in this survey. Please be assured that **all responses and personal information will remain private and confidential**. Your participation is greatly valued. If you have any further questions, please contact us via the email listed below:

Thank you.

Sincerely,

Deborah Liew Xin Shen (xinshen0304@1utar.my)

Ki Yong Xi (kiyongxi@1utar.my)

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-
   - For assessment of any application to UTAR
   - For processing any benefits and services
   - For communication purposes
   - For advertorial and news
   - For general administration and record purposes
   - For enhancing the value of education
   - For educational and related purposes consequential to UTAR
   - For the purpose of our corporate governance
   - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at _____.

Acknowledgment of Notice

[ ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

[ ] I disagree, my personal data will not be processed.

……

Name:

Date:

SURVEY QUESTIONNAIRE

Section A: Demographic Profile

In this section, we would like you to fill in some of your personal details. Please tick your answer and answers will be kept strictly confidential.

1. Gender

    □ Male

    □ Female

2. Age

    □ 18 – 25 years old

    □ 26 – 33 years old

    □ 34 – 41 years old

    □ 42 – 49 years old

    □ 50 years old and above

3. Race

    □ Malay

    □ Chinese

    □ Indian

    □ Other(s):

4. Level of Education

    - Foundation (STPM / Diploma / A-Level)
    - Undergraduate (Bachelor's degree)
    - Postgraduate (Master's degree / PhD's degree)

5. Type of Malaysia Universities

    - Universiti Tunku Abdul Rahman (UTAR)
    - Tunku Abdul Rahman University of Management and Technology (TAR UMT)
    - University of Putra Malaysia (UPM)
    - Universiti Kebangsaan Malaysia (UKM)
    - Universiti Utara Malaysia (UUM)

Section B: Construct Measurement

This section is seeking your opinion on the determinants that affect the adoption intention of ChatGPT.

Instruction: Based on the statement, please select the best answer to indicate the determinants that affect the adoption intention of ChatGPT by placing a circle on the scale of 1 to 5 [(1) = Strongly Disagree; (2) = Disagree; (3) = Neutral; (4) = Agree; (5) = Strongly Agree].

Intention to Use (INT)

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
INT 1	I am willing to make the decision based on the suggestions given by ChatGPT.	1	2	3	4	5
INT 2	I am willing to use ChatGPT in the future.	1	2	3	4	5
INT 3	I plan to use ChatGPT more frequently.	1	2	3	4	5
INT 4	I will recommend others to use ChatGPT.	1	2	3	4	5

Perceived Usefulness (PU)

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PU 1	ChatGPT is more beneficial than other information sources I have previously used.	1	2	3	4	5
PU 2	ChatGPT enables me to save time in searching for information.	1	2	3	4	5
PU 3	ChatGPT helps me in comprehending difficult concepts and topics more effectively.	1	2	3	4	5
PU 4	I believe that using ChatGPT has enhanced my academic performance.	1	2	3	4	5
PU 5	ChatGPT provides the latest and updated information and resources.	1	2	3	4	5

Perceived Ease of Use (PEoU)

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PEoU 1	ChatGPT is simple to use.	1	2	3	4	5
PEoU 2	ChatGPT is easy to learn by the first-time user.	1	2	3	4	5
PEoU 3	It does not need extensive technical knowledge when using ChatGPT.	1	2	3	4	5
PEoU 4	Using ChatGPT is not challenging for me.	1	2	3	4	5

Perceived Trustworthiness (PT)

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PT 1	ChatGPT provide me the reliable information.	1	2	3	4	5
PT 2	I need to use ChatGPT for completing the tasks.	1	2	3	4	5
PT 3	I completely rely on ChatGPT's responses to complete the duties.	1	2	3	4	5
PT 4	ChatGPT could protect my privacy and personal information.	1	2	3	4	5
PT 5	ChatGPT is capable of providing information I require.	1	2	3	4	5

Perceived Personalization (PP)

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PP 1	It is fun to use ChatGPT in my studies.	1	2	3	4	5
PP 2	I enjoy using ChatGPT in my studies.	1	2	3	4	5
PP 3	ChatGPT providing information on the particulars of the curious subject.	1	2	3	4	5
PP 4	ChatGPT can interact with us in our own language.	1	2	3	4	5
PP 5	ChatGPT creates human-like friendly responses	1	2	3	4	5
PP 6	ChatGPT provide information that was tailored to my needs.	1	2	3	4	5
PP 7	I feel that ChatGPT understood my preferences and requirements.	1	2	3	4	5

Appendix 1.2: Survey Certification of Letter

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Jalan Universiti, Bandar Barat, 31900
Kampar, Perak
Phone: 05-468-8888
https://fbf.utar.edu.my/

18th September 2023

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their *Bachelor of Marketing (Honours)* program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:

Name of Student	**Student ID**
Ki Yong Xi	20ABB02286
Deborah Liew Xin Shen	21ABB02490

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

……

Mr Choy Johnn Yee
Head of Department
Faculty of Business and Finance
Email: choyjy@utar.edu.my

Appendix 2.0: Krejcie and Morgan Table (Krejcie & Morgan, 1970)

Table for Determining Sample Size from a Given Population					
N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381

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

Appendix 3.0: Internal Consistency Analysis (Pilot Test)

```
RELIABILITY
  /VARIABLES=PU1 PU2 PU3 PU4 PU5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Pilot Study: Perceived Usefulness (PU)

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.701	.764	5

```
RELIABILITY
  /VARIABLES=PEoU1 PEoU2 PEoU3 PEoU4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Pilot Study: Perceived Ease of Use (PEoU)

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.851	.868	4

```
RELIABILITY
  /VARIABLES=PT1 PT2 PT3 PT4 PT5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Pilot Study: Perceived Trustworthiness (PT)

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.864	5

```
RELIABILITY
  /VARIABLES=PP1 PP2 PP3 PP4 PP5 PP6 PP7
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Pilot Study: Perceived Personalization (PP)

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.899	.899	7

```
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\Asus\Desktop\Research Project\FYP 2\FYP 2 - SPSS
Tool\FYP I - Pre-test '+
    'Data.sav'
  /COMPRESSED.
```

```
GET
  FILE='C:\Users\Asus\Desktop\Research Project\FYP 2\FYP 2 - SPSS
Tool\FYP 2 - Pilot Study\FYP 2 - Pre-test Data.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
RELIABILITY
  /VARIABLES=INT1 INT2 INT3 INT4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Pilot Study: Intention to Use (INT)

```
[DataSet1] C:\Users\Asus\Desktop\Research Project\FYP 2\FYP 2 - SPSS
Tool\FYP 2 - Pilot Study\FYP 2 - Pre-test Data.sav
```

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.868	.879	4

Appendix 4.0: Descriptive Analysis

Frequencies

```
[DataSet1] C:\Users\Asus\Desktop\Research Project\FYP 2\FYP 2 - SPSS
Tool\FYP 2 - Actual Data Collection\FYP 2 - Actual Data.sav
```

Statistics

		Gender	Age	Race	Level of Education	Type of Malaysia Universities
N	Valid	382	382	382	382	382
	Missing	0	0	0	0	0

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	142	37.2	37.2	37.2
	Female	240	62.8	62.8	100.0
	Total	382	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 – 25 years old	346	90.6	90.6	90.6
	26 – 33 years old	28	7.3	7.3	97.9
	34 – 41 years old	3	.8	.8	98.7
	42 – 49 years old	3	.8	.8	99.5
	50 years old and above	2	.5	.5	100.0
	Total	382	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	4	1.0	1.0	1.0
	Chinese	372	97.4	97.4	98.4
	Indian	1	.3	.3	98.7
	Other	5	1.3	1.3	100.0
	Total	382	100.0	100.0	

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Foundation (STPM/ Diploma/ A-Level)	82	21.5	21.5	21.5
	Undergraduate (Bachelor's Degree)	280	73.3	73.3	94.8
	Postgraduate (Master's Degree/ PhD's Degree)	20	5.2	5.2	100.0
	Total	382	100.0	100.0	

Type of Malaysia Universities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Universiti Tunku Abdul Rahman (UTAR)	115	30.1	30.1	30.1
	Tunku Abdul Rahman University of Management and Technology (TAR UMT)	96	25.1	25.1	55.2
	University of Putra Malaysia (UPM)	65	17.0	17.0	72.3
	Universiti Kebangsaan Malaysia (UKM)	56	14.7	14.7	86.9
	Universiti Utara Malaysia (UUM)	50	13.1	13.1	100.0
	Total	382	100.0	100.0	

Appendix 5.0: Internal Consistency Analysis

```
RELIABILITY
  /VARIABLES=INT1 INT2 INT3 INT4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Intention to Use (INT)

Case Processing Summary

		N	%
Cases	Valid	382	100.0
	Excluded[a]	0	.0
	Total	382	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.870	.872	4

```
RELIABILITY
  /VARIABLES=PU1 PU2 PU3 PU4 PU5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Perceived Usefulness (PU)

Case Processing Summary

		N	%
Cases	Valid	382	100.0
	Excluded[a]	0	.0
	Total	382	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.717	.751	5

```
RELIABILITY
  /VARIABLES=PEoU1 PEoU2 PEoU3 PEoU4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Perceived Ease of Use (PEoU)

Case Processing Summary

		N	%
Cases	Valid	382	100.0
	Excluded[a]	0	.0
	Total	382	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.835	.840	4

```
RELIABILITY
  /VARIABLES=PT1 PT2 PT3 PT4 PT5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Perceived Trustworthiness (PT)

Case Processing Summary

		N	%
Cases	Valid	382	100.0
	Excluded[a]	0	.0
	Total	382	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.728	.742	5

```
RELIABILITY
  /VARIABLES=PP1 PP2 PP3 PP4 PP5 PP6 PP7
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

Reliability

Scale: Perceived Personalization (PP)

Case Processing Summary

		N	%
Cases	Valid	382	100.0
	Excluded[a]	0	.0
	Total	382	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.900	.901	7

Appendix 6.0: Pearson Correlation Coefficient Analysis

```
CORRELATIONS
  /VARIABLES=INT PU PEoU PT PP
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
```

Correlations

Correlations

		INT	PU	PEoU	PT	PP
INT	Pearson Correlation	1	.714**	.490**	.585**	.684**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	382	382	382	382	382
PU	Pearson Correlation	.714**	1	.521**	.688**	.724**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	382	382	382	382	382
PEoU	Pearson Correlation	.490**	.521**	1	.327**	.559**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	382	382	382	382	382
PT	Pearson Correlation	.585**	.688**	.327**	1	.713**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	382	382	382	382	382
PP	Pearson Correlation	.684**	.724**	.559**	.713**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	382	382	382	382	382

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

Appendix 7.0: Multiple Regression Analysis

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT INT
  /METHOD=ENTER PU PEoU PT PP.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PP, PEoU, PT, PU[b]	.	Enter

a. Dependent Variable: INT

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758[a]	.575	.570	.54185

a. Predictors: (Constant), PP, PEoU, PT, PU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.546	4	37.387	127.338	.000[b]
	Residual	110.688	377	.294		
	Total	260.234	381			

a. Dependent Variable: INT

b. Predictors: (Constant), PP, PEoU, PT, PU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.239	.194		1.235	.218
	PU	.474	.062	.412	7.618	.000
	PEoU	.115	.052	.094	2.223	.027
	PT	.068	.053	.068	1.297	.195
	PP	.311	.063	.284	4.908	.000

a. Dependent Variable: INT

Appendix 8.0: Descriptive Statistics

```
DESCRIPTIVES VARIABLES=INT1 INT2 INT3 INT4
  /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives Statistics: Intention to Use (INT)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
INT1	382	1.00	5.00	3.7958	.98289	.966
INT2	382	1.00	5.00	4.2251	.88237	.779
INT3	382	1.00	5.00	3.9398	1.04695	1.096
INT4	382	1.00	5.00	4.0654	.97927	.959
Valid N (listwise)	382					

```
DESCRIPTIVES VARIABLES=PU1 PU2 PU3 PU4 PU5
  /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives Statistics: Perceived Usefulness (PU)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
PU1	382	1.00	5.00	3.8141	1.03964	1.081
PU2	382	1.00	5.00	4.2749	.85134	.725
PU3	382	1.00	5.00	4.1414	.90256	.815
PU4	382	1.00	5.00	3.9031	1.04920	1.101
PU5	382	1.00	5.00	2.6257	1.33347	1.778
Valid N (listwise)	382					

```
DESCRIPTIVES VARIABLES=PEoU1 PEoU2 PEoU3 PEoU4
  /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives Statistics: Perceived Ease of Use (PEoU)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
PEoU1	382	1.00	5.00	4.4660	.76515	.585
PEoU2	382	1.00	5.00	4.3953	.80893	.654
PEoU3	382	1.00	5.00	4.2304	.91893	.844
PEoU4	382	1.00	5.00	4.4424	.81365	.662
Valid N (listwise)	382					

```
DESCRIPTIVES VARIABLES=PT1 PT2 PT3 PT4 PT5
  /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives Statistics: Perceived Trustworthiness (PT)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
PT1	382	1.00	5.00	2.9346	1.28933	1.662
PT2	382	1.00	5.00	3.5707	1.14739	1.317
PT3	382	1.00	5.00	3.2173	1.30712	1.709
PT4	382	1.00	5.00	3.4398	1.20379	1.449
PT5	382	1.00	5.00	3.8979	.95985	.921
Valid N (listwise)	382					

```
DESCRIPTIVES VARIABLES=PP1 PP2 PP3 PP4 PP5 PP6 PP7
  /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives Statistics: Perceived Personalization (PP)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
PP1	382	1.00	5.00	4.0785	.88387	.781
PP2	382	1.00	5.00	4.0681	.92534	.856
PP3	382	1.00	5.00	4.0157	.92771	.861
PP4	382	1.00	5.00	4.1754	.92678	.859
PP5	382	1.00	5.00	3.9188	1.04050	1.083
PP6	382	1.00	5.00	3.9974	.98944	.979
PP7	382	1.00	5.00	3.9267	.99335	.987
Valid N (listwise)	382					