DETERMINE STUDENTS SATISFACTION ON THE USE OF ARTIFICIAL INTELLIGENCE (AI) IN EDUCATION

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DECLARATION

I hereby declare that:

1) This undergraduate FYP is the end result of my 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) Sole contribution has been made by me in completing the FYP.

4) The word count of this research report is _____10488_____

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<u>PREFACE</u>

This research project is undertaken as a requirement for the Bachelor of International Business program offered by the Faculty of Accountancy and Management at University Tunku Abdul Rahman Sungai Long. The study was conducted between October 2023 and April 2024.

The primary objective of this research is to assess students' satisfaction regarding the utilization of Artificial Intelligence (AI) in education. The factors considered in this study include the Information Quality, Service Quality, perceived usefulness, perceived ease of use, and satisfaction of Artificial Intelligence.

By examining the relationship between these factors and students' satisfaction with AI in education, educators and policymakers can gain insights into how AI can be optimally integrated into educational settings. This understanding will facilitate the development of strategies to enhance the educational experience and meet the evolving needs of students in the digital age.

ABSTRACT

This study examines the relationship between various factors influencing student satisfaction towards artificial intelligence (AI) in education. The factors considered are Information Quality, Service Quality, perceived usefulness, and perceived ease of use. Data were collected through questionnaires distributed online to respondents on Facebook, Instagram and Universiti Tunku Abdul Rahmna (UTAR). There are total 243 respondent collected. Analysis was performed using the Statistical Package for Social Sciences (SPSS).

The findings suggest that subjective norms do significantly influence student satisfaction towards artificial intelligence (AI) in education. The factors that influence are Information Quality, Service Quality, perceived usefulness, and perceived ease of use. Hence, recommendations are made to optimize AI integration in education, including enhancing perceived usefulness and ease of use through training, user-friendly interfaces, and transparent information delivery mechanisms. These kinds of actions are intended to increase student satisfaction and enhance learning results in the digital era.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Innovative tools like Artificial intelligence (AI) are being incorporated into academic settings. This raises interesting questions about the experiences and satisfaction of students. The artificial intelligence-driven language model Artificial intelligence (AI) provides exceptional chances for individualized and interactive learning. It is crucial to investigate how students satisfied with Artificial intelligence (AI) in the context of education as the educational landscape changes. The purpose of this study is to investigate the satisfaction that students have when using Artificial intelligence (AI) in their education. By getting to know students' satisfaction, we hope to provide insightful information that will help with the successful integration of AI-driven technologies into educational system, creating a dynamic and adaptable learning environment for the country's future generation of educators.

1.1 Research Background

A major breakthrough in computer science, artificial intelligence (AI) has had a huge impact on society, industry, and health. Scientists first started experimenting with the idea of artificial intelligence (AI) in the 1950s, which is when technologies like chatbots and AI first emerged. "Artificial intelligence" is the ability of a system to effectively replicate human intelligence by accurately interpreting external input, learning from it, and applying those learnings to achieve

specified goals through flexible adaptation (Celik, 2023). AI is being used more and more in education, providing opportunities like dynamic evaluations, personalised learning, and meaningful interactions in blended learning settings. There is a growing concern, nevertheless, that as AI develops, it might have a negative impact on education by making people more reliant on computers for knowledge and study, therefore impairing people's intellectual capacities.(Tlili et al., 2023) Some claim that AI solutions could take the position of administrators, employees, and teachers in crucial areas. Despite these concerns, there are many benefits to education that come with employing various e-learning resources, including virtual reality, gamification, video conferencing, mobile apps, AI-driven adaptive platforms, and collaborative tools (Nguyen et al., 2022). However, these technologies have also been linked to drawbacks like poor connectivity, possible distractions, the lack of interpersonal interactions, and expensive prices. The services offered by higher education are already being significantly impacted by the rapid growth of artificial intelligence. Artificial Intelligence (AI) has gained significant traction in the field of education, promising personalized learning, dynamic evaluation tools, and meaningful interactions in mixed learning environments. Despite these beneficial developments, concerns have been raised about the possible negative impacts of cutting-edge AI technology on the field of education. For instance, ChatGPT, a recently made available AI tool for public testing, has been creating waves with its capacity to produce creative jokes and elucidate scientific subjects. The only instance of a novel kind of AI with the potential to emerge as the next big general-purpose technology is ChatGPT. Open AI introduced ChatGPT, a form of conversational engagement amongst GPT users, in November 2022.(Cotton et al., 2023) The integration of machine learning into education is transforming existing structures, impacting not just administrative positions but also the character of instruction and learning processes. For example, intelligent tutoring systems can modify their teaching methods in response to each student's performance, offering assistance and feedback in real time. This increases the effectiveness of instructional procedures while creating new opportunities for individualised and flexible learning.

1.2 Problem statement

The purpose of this study is to better understand how students satisfied with the perceive use of artificial intelligence (AI) in the classroom and how it affects their educational experiences. As the study's background explains, current trends in education point to a move away from conventional teaching strategies and towards more technology-driven ones. Although chatbots such as ChatGPT can provide early assistance to students experiencing stress or anxiety, they cannot serve as a replacement for expert assistance. They can offer simple guidance, suggest coping mechanisms, or simply listen without passing judgement. Nonetheless, it's imperative to direct pupils to the appropriate expert resources for more thorough support. An over-reliance on artificial intelligence (AI)-powered learning platforms or virtual assistants might hinder students' development of critical social and interpersonal skills by reducing possibilities for in-person interactions and teamwork with others and teachers. There may be a decline in significant interpersonal interactions in the classroom as traditional modes of engagement and collaboration are replaced with AI-powered tools that students use more and more for learning and support. This absence of face-to-face engagement can impede the development of critical abilities like empathy, effective communication, and active listening—skills that are necessary for navigating social dynamics and forming lasting relationships in and out of the classroom., (K. C. A., & Sarode, R. D., 2020). Moreover, As AI becomes more prevalent in education, there's a growing worry about its possible drawbacks for students. Some experts argue that AI-driven learning platforms might hinder critical thinking and diminish essential human interaction, a key component of the learning process (Mhlanga, 2023). It can be bad to rely too much on the AIEd applications and chatbots for convenience. Pupils may grow unduly reliant on these resources, which could limit their capacity for critical thought and problem-solving. Students risk missing out on learning the critical abilities needed to independently analyse and solve problems if they primarily rely on AI for answers (Ifelebuegu et al., 2023). Additionally, the social aspects of learning may suffer from an over-reliance on AI. Education includes collaboration, socialisation, and human connection in addition to the transmission of knowledge. These vital components may be harmful if AI becomes the primary source of knowledge. Even if artificial intelligence (AI) tools, like chatbots, are a great

help in research and education, depending too much on them might hinder social learning, critical thinking, and the creation of an impartial and equal learning environment (Ifelebuegu et al., 2023). Students who rely too much on technology may become less resilient and persistent when faced with obstacles because they are less likely to look for other options or solve difficulties when help is easily accessible at the touch of a button. Consequently, if children do not develop the persistence, flexibility, and resourcefulness required for success in both academic and real-world contexts, they may lose out on important possibilities for intellectual growth, skill development, and self-directed learning (K. C. A., & Sarode, R. D., 2020).

1.3 Research objectives

- To examine how students' satisfaction with using AI for education relates to the Information Quality of AI.
- To examine how students' satisfaction with using AI for education relates to the Service Quality of AI.
- To examine how students' satisfaction with using AI for education relates to the Perceived Usefulness of AI.
- To examine how students' satisfaction with using AI for education relates to the Perceived ease of use of AI.

1.4 Research Questions

- Is there any connection between students' satisfaction with using AI for education and the Information Quality of AI?

- Is there any connection between students' satisfaction with using AI for education and the Service Quality of AI?
- Is there any connection between students' satisfaction with using AI for education and the Perceived Usefulness of AI?
- Is there any connection between students' satisfaction with using AI for education and the Perceived ease of use of AI?

1. 5 Hypotheses of the Study

H1: The information quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H2: The Service quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H3: The Perceived Usefulness of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H4: The Perceived ease of use of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

1. 6 Research Significance

This study aims to explore students' satisfaction with the integration of artificial intelligence (AI) in education and its impact on their learning experiences. Through a comprehensive review of relevant literature, the researcher delves into past studies, tracing the historical development of AI in educational settings. The primary focus of this research is to understand students' satisfaction with AI technologies in their learning environments, offering valuable insights for educators, institutions, and policymakers. By investigating the components of AI that directly influence student satisfaction and learning intentions, this study contributes to shaping the future use of

artificial intelligence in education. The findings of this study hold significant implications for the utilization of artificial intelligence in education moving forward. In the realm of AI-assisted education, educators and institutions stand to benefit by better aligning their approaches with the needs and expectations of learners, as discerned through an understanding of student satisfaction. This research serves as a valuable resource for educational stakeholders, providing insights into the factors that influence students' acceptance, resistance, or enthusiasm toward artificial intelligence in education. In summary, the findings of this study serve as a foundation for enhancing the integration of AI in education, with a focus on student satisfaction.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In the literature exploring students' attitudes toward AI in education, there's a growing interest in AI-powered tools and their potential impacts on writing abilities, productivity, and academic achievement. Understanding student perspectives is crucial for the fair and successful integration of AI into higher education. The Expectation-Confirmation Model (ECM) is frequently employed to understand post-usage behavior and user satisfaction with a product or service. According to the ECM, three main factors—confirmation, perceived usefulness (PU), and satisfaction—play a role in explaining users' intentions to continue using a product or service. In essence, users' perceived usefulness (PU) and satisfaction are significant indicators of their intention to continue, while their PU and confirmation of expectations are crucial factors leading to satisfaction (Boakye et al., 2014). Studies suggest that chatbots enhance customer satisfaction across various domains (Chung et al., 2018). For instance, Chung et al. (2018) examine the relationship between chatbots and consumer satisfaction, particularly in luxury businesses. They found that utilizing chatbots for e-service enhances consumer satisfaction due to their ability to engage customers and provide interactive customer support. Especially within the realm of technology, the perceived ease of use (PEOU) and perceived usefulness (PE) from the Technology Acceptance Model (TAM) have been identified as critical components for improving customer satisfaction. Customers tend to have more positive attitudes toward a system or service when it's easier and more enjoyable to use. These two antecedents were found to be strong predictors of satisfaction with IT-based services. Therefore, in the context of chatbots, this study incorporates PEOU and PE into the research model, anticipating that these elements will influence chatbot users' satisfaction.

2.1 Dependent Variables

2.1.1 Satisfaction of students

In recent years, the integration of artificial intelligence (AI) into education has become a topic of great interest and importance. AI has the potential to revolutionize various aspects of education, including its goals, curriculum, pedagogy, and assessment techniques. As a result, many nations around the world are now making AI literacy education a mandatory part of their curriculum. This includes teaching students about AI devices and services, AI ethics, real-world AI convergence scenarios, and fundamental block coding (Roll & Wylie, 2016). Understanding what students think about the AI in education has been one major shift in research study. Rather of concentrating just on the features of AI tools and how they impact writing productivity and quality, researchers are becoming more and more interested in how students view the usage of AI in their learning processes. Examining students' opinions, comfort zones, and overall acceptance of AI as a collaborator in their learning process is part of this. This emerging topic of research seeks to shed light on students' expectations, concerns, and experiences with these technologies in the classroom in order to better understand the complex relationships that exist between them and AI.(Agung Rinaldy Malik et al., 2023). For instance, ChatGPT was utilised in a study by Farrokhnia et al. (2023) to assist graduate students in writing research proposals. The data showed that although students thought the AI-generated content needed to be expanded and refined more, it was helpful in presenting basic ideas and organising the proposals. Studies have also been done on the moral dilemmas raised by the employment of AI writing tools in higher education. Furthermore, research has been done on student opinions regarding the application of artificial intelligence (AI) in the classroom. In addition the opinions of students on the use of artificial intelligence (AI) in the classroom have been investigated. Studies on AI-driven Automated Essay Evaluation systems for feedback and grading have shifted in focus, indicating a rising interest in learning how students view AI's larger applications in education. Instead of focusing only on examining how effective AI tools are, scientists are now also examining students' viewpoints, attitudes, and worries about

using AI in different learning environments. As artificial intelligence (AI) becomes increasingly prevalent in educational settings, this developing field of study seeks to represent the complex interactions and viewpoints of students (Agung Rinaldy Malik et al., 2023).

2.2 Independent Variables

2.2.1 Information Quality

The rapid growth of information technology systems has been accompanied by the development of artificial intelligence, which has made it easier for students to integrate these technologies into their education. However, the effectiveness of information technology systems in improving student performance depends on their appropriate use. The integration of new technology in education impacts all students. Four factors determine the quality of information: currency, accuracy, completeness, and consistency. Accuracy can be defined as the degree to which a value from another database, an arithmetic calculation, or an attribute about a real-world thing agrees. Completeness relates to whether all of the data necessary for a certain application are present and is to be defined in relation to a particular application. Currency relates to current information, whereas consistency refers to the lack of dispute between two databases (Popoola et al., 2014). AI information quality is arbitrary and dependent on a number of variables. It involves evaluating the output of the information system according to attributes like currency, accuracy, completeness, succinctness, accessibility, adaptability, relevance, understandability, meaningfulness, timeliness, format, and others. These qualities are necessary for AI information to be useful in higher education, as well as for it to produce results that are clear and consistent (Popoola et al., 2014). For example, Studies like Chen et al.'s (2020) work, which highlight the advantages of information quality using ChatGPT a conversational agent based on generative models—showcase the

effectiveness of such approaches (Baidoo-Anu & Owusu Ansah, 2023). Information Quality take center stage in students' use of AI in education.

Therefore, based on the discussions above, hypothesis 1 is developed as follows:

The degree of satisfaction among students while using AI for educational purposes is positively correlated with the Information Quality of AI.

2.2.2 Service Quality

Artificial intelligence (AI) has become utilized more and more in education, and chat-bots powered by AI are becoming an important part of student support and interaction. According to Gartner (2019), by 2021, artificial intelligence (AI) will manage 15% of all customer service contacts worldwide, a 400% increase from 2017(Gartner, 2019). Furthermore, research shows that investments in AI chatbot technologies are expected to rise significantly, indicating a growing interest in automating educational services to improve their quality. Moreover, as per the "2019 China Artificial Intelligence Industry Research Report" issued by the China Economic and Information Research Center in December 2019, the AI chatbot industry's scale amounted to 2.72 billion yuan in 2018, with projections anticipating it to surpass 16 billion yuan by 2022(Chen et al., 2022). To improve student satisfaction and maximise educational outcomes, it is crucial to comprehend and define the parameters of AI chatbot service quality in educational environments. AI chatbot services are an innovative method of providing help as well as a new way of providing services. AI chatbots have distinct integrated characteristics, providing ways, and output content. The AI chatbot is more flexible than others; its features, which include self-learning, precise personalized recommendations, constant online visibility, the ability to answer questions from students at any time, and greater stability, all outperform other technologies(Ciechanowski et al., 2019). In the modern era, artificial intelligence (AI) chatbots tend to be the first "teacher" that students turn to when they have questions. Only when students encounter issues beyond the AI chatbots' capabilities do they seek answers from human teachers. Consequently, the quality of AI

chatbots profoundly influences students' initial impressions and satisfaction with their educational experiences(Chen et al., 2022).

Therefore, based on the discussions above, hypothesis 2 is developed as follows:

The degree of satisfaction among students while using AI for educational purposes is positively correlated with the Service Quality of AI.

2.2.3 Perceived Usefulness

Many studies have shown that user attitudes are strongly influenced by perceived utility and ease of use, and that these attitudes in turn have an impact on user adoption and satisfaction.Target people's perception of perceived usefulness is the degree to which they think using AI will significantly benefit them (Machdar, 2019). Furthermore, PU and satisfaction are related in a number of educational situations. For instance, Shroff et al. (2011) looked at how students utilized an e-portfolio system and found that their assessment of the system's utility had a substantial impact on students' behavioural intention to use it, which eventually led to increased satisfaction (Shroff et al., 2011). AI-driven approaches are able to deal with environmental problems and provide an integrated strategy for sustainable development. With the development of tutoring programmed that could personalize instruction, artificial intelligence (AI) entered the narrative of improving education. Perceived importance and usefulness also have a greater chance of influencing students, and students are more likely to choose good impacts from these characteristics (Suki & Suki, 2011).This is similar with Moussa (2023) study on students' preparation for and satisfaction with online study in higher education It implies that students are motivated to continue using a tool or useful method once they come upon it (Moussa, 2023). By establishing interactive learning environments, artificial intelligence technologies provide technological support. This involves producing customised learning materials, adapting features, and profiling online learners. Through user tag analysis, AI can identify students' learning preferences and abilities by collecting through massive volumes of data from several devices s usability improves the perception of usefulness is likely to rise accordingly.(Wang et al., 2021).

With tools like 3-D visualisation that provide enhanced learning experiences through virtual and augmented reality, artificial intelligence has enormous potential for use in e-learning this result can affect student perceived usefulness significantly (Díez-Echavarría et al., 2018). As it affects students' attitudes, experiences, and perceptions of these technologies, perceived usefulness is a crucial factor in determining how satisfied students are with AI in the classroom. Students' contentment with AI-enhanced education grows as they become aware of the concrete advantages and value that AI provides to their learning process, which makes for a more satisfying and happy learning environment.

Therefore, based on the discussions above, hypothesis 3 is developed as follows:

The degree of satisfaction among students while using AI for educational purposes is positively correlated with the Perceived Usefulness of AI.

2.2.4 Perceived ease of use

Perceived Ease of Use has been recognised as a key construct for investigating and evaluating student satisfaction with artificial intelligence, drawing from the literature on the subject. The term "perceived ease of use" usually relates to the user's assessment of how much mental work a given technical job will take. Personal innovativeness will immediately improve users' perceptions of how easy things are to use, claim Du et al. (2012) (Martins and others, 2014).

Students' evaluations of the time or effort needed to learn and use a new technological item in an educational setting can be used to understand how perceived ease of use affects the satisfaction of students. There are two possible outcomes for this assessment: beneficial or negative. Positive assessments happen when students think a technology is simple to use and understand, meaning it takes little time or effort to get familiar with its features (Wilson et al., 2021). On the other hand, when students find a technology to be overly complicated or challenging to understand, they will

give it a lower rating, which will aggravate them and require more time to study. Therefore, in order to improve student satisfaction, educational institutions must make sure that the technologies they bring to their students are simple to use and intuitive. This will allow for an improved learning environment and increased student satisfaction. Likewise, perceived ease of use can be understood as students' cognitive evaluation of the work necessary to adjust to a new technology or system in their learning environment, as explained by Pipitwanichakarn and Wongtada (2020).

Therefore, based on the discussions above, hypothesis 4 is developed as follows:

The degree of satisfaction among students while using AI for educational purposes is positively correlated with the Perceived ease of use of AI.

2.3 Hypotheses developed for this study

H1: The information quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H2: The Service quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H3: The Perceived Usefulness of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

H4: The Perceived ease of use of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

2.4 Conceptual Framework

Independent Variable

Dependent Variables

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┌─────────────────────────┐
│  Information Quality     │
└─────────────────────────┘

┌─────────────────────────┐
│  Service Quality         │
└─────────────────────────┘                    ┌──────────────────────────────┐
                                                │  Satisfaction of use    for  │
┌─────────────────────────┐                    │  Artificial intelligence     │
│  Perceived Usefulness    │                    └──────────────────────────────┘
└─────────────────────────┘

┌─────────────────────────┐
│  Perceived Ease Of Use   │
└─────────────────────────┘
```
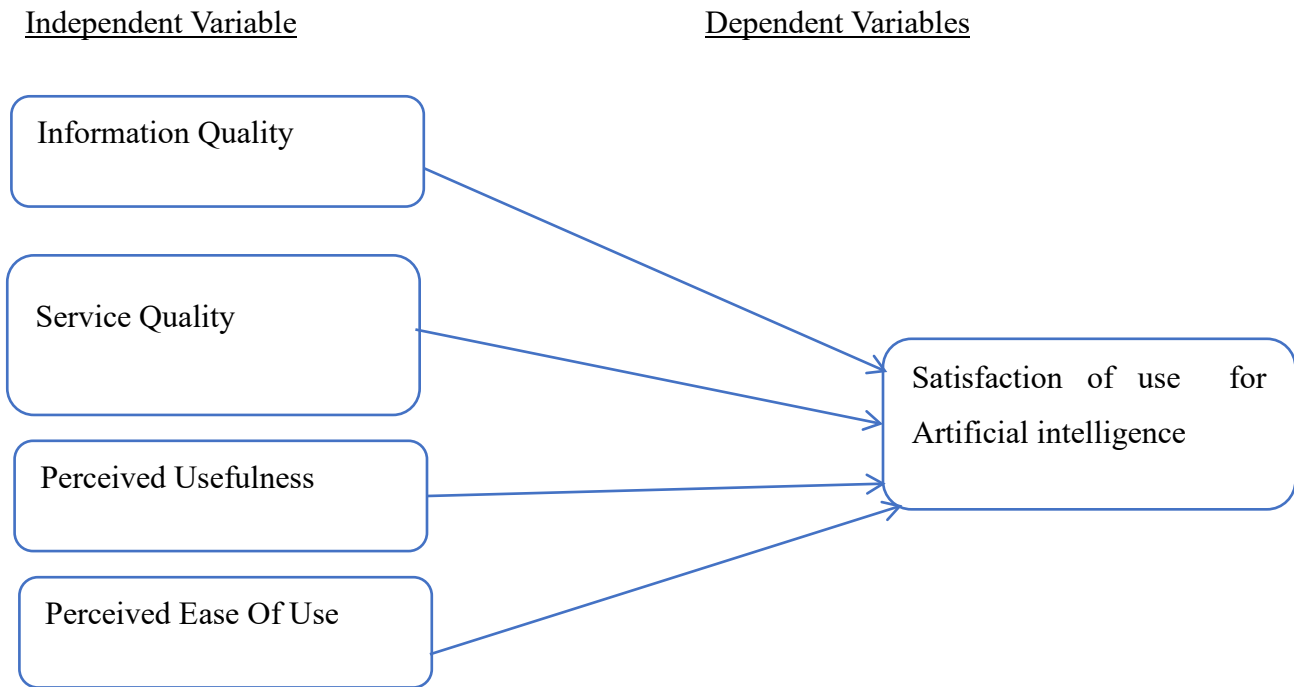
Source: Developed for this study

Figure 1.0 Conceptual Framework

CHAPTER 3: METHODOLOGY

3.0 Introduction

The comprehensive approach employed to carry out this study will be presented in this chapter. Research design, sample design, data collection technique, research instrument, construct measurement, data processing, and data analysis will all be covered in sections. Additionally, further information on the data collection and analysis process will be showcased and talked about.

3.1 Research Design

Research design serves as the structured framework comprising various methods and techniques chosen by a researcher, tailored to the subject matter, to ensure the success of their study. It encompasses different types such as experimental, survey, correlational, semi-experimental, and review, along with their sub-types like experimental design, research problem formulation, and descriptive case-study. For this particular research, the chosen design falls under the category of experimental research, focusing on causality by observing the impact of independent variables on dependent variables. A survey method will be employed as the research strategy to gather participant opinions, with 150-250 respondents invited to complete the questionnaire.

3.1.1 Quantitative Research

The satisfaction of students with the use of artificial intelligence (AI) in education will be evaluated through the application of quantitative research methods. Using this methodological approach, numerical data is carefully gathered, analysed, and statistical conclusions are made (Codiroli Mcmaster & Cook, 2018). We intend to use quantitative research to measure the satisfaction of students with AI in the educational environment. A sample of students will be given standardised surveys or questionnaires as part of the research strategy. The proposed research will be conducted on selected four different factors, including Information Quality, Service Quality, Perceived Usefulness, Perceived Ease Of Use

3.1.2 Descriptive Research

According to Dulock (1993), descriptive research provides an accurate and methodical description of the facts and features of a particular population or region of interest. The elements consist of things, individuals, groups, environments, and people. This study employed descriptive research methodology to characterize the students satisfaction on the use Artificial intelligence (AI) in education.

3.2 Sampling Design

3.2.1 Target Population

The target population of this study are all the public, aged between 16 to 22 years old or above. The respondent within this age range would be able to purchase a product, which might aid in more precisely providing the factors that affect them to acquire the things, which is why this target group was chosen. These participants will be asked to rate their level of satisfaction with Artificial Intelligence (AI) as a teaching tool in terms of Information Quality, Service Quality, Perceived Usefulness, and Perceived Ease of Use. To choose people who are appropriate for this study, a straightforward random selection technique will be used to choose the sample. The rationale behind employing a basic random sampling technique is to guarantee that the sample is representative of the population of interest, as each member of the population has an equal chance of being chosen.

3.2.2 Sampling Technique

Purposive sampling techniques are the sample method used in this study. Also referred to as judgement sampling, selected sampling, or subjective sampling, the purposive sampling techniques are a group of sampling methods that rely on the judgement of the researcher when choosing the study units, such as individuals, cases, events, or data sets (Sharma, 2017). Using this method will allow the researcher to select the most qualified responder to administer the questionnaire.

Simple sampling is the sample strategy selected for this investigation. Every single member of the target demographic is included in this strategy. The short duration for data gathering, which prevents the building of a sufficiently big sample size required for a basic random sampling method, is the justification for using this approach.

3.2.3 Sampling size

The number of participants needed for the study's survey is known as the sample size in research. The margin of error and the level of confidence must be determined in order to determine the survey's sample size. Since students are the study's target respondents, a 95% confidence level and a 0.05 margin of error are employed in the sample size calculation. Convenient sampling was the method of choice for this study, so the final participant pool would reflect the real world.

Every question in the online survey has to be answered by the respondents. Furthermore, a total of 30 pilot tests were carried out before to the distribution of the online questionnaire in order to assess the questionnaire's viability.

3.3 Data Collection Method

There are several methods for gathering data for a quantitative research design, including surveys, interviews, experiments, and more. Typically, the survey would be distributed by physically gathering responses in a designated area. Using its simple

interface, Google Forms makes it possible to create extensive surveys that are customised to the particular goals of the research. Researchers can create surveys using this platform that cover a range of topics related to AI use in education, including general satisfaction, impact on learning outcomes, effectiveness, and simplicity of use. Furthermore, Google Forms allows you versatility in terms of question types. This means that questions can be included that are open-ended or closed-ended, which makes it easier to collect data that is both quantitative and qualitative. The researchers' social media accounts, email addresses, and other pertinent channels that enable the questionnaire to reach the intended respondents were the platforms selected for distribution. As demonstrated by earlier studies, the researchers always employ surveys and interviews for this type of study design. Survey questionnaires will be used to gather data for this project.

3.3.1 Primary Data

Every research project needs a data collection process. It assists researchers in establishing facts by assessing data gathered from all available and pertinent sources to address research questions, test hypotheses, and assess findings. The main technique employed in this study is data collecting. The primary data collection approach was chosen because it makes it simple to separate and categories each individual participant into distinct groups, which would facilitate the title study through the survey. Furthermore, it enhances the caliber of the research results generated from the participants an online survey served as a tool for data collection in this study. Online questionnaires have the advantages of being cost-effective and time efficient. The questionnaire was created simply and contained only the most crucial questions in order to prevent responders from becoming dissatisfied with it because they did not understand the questions.

3.4 Research Instrument

3.4.1 Questionnaire Design

A survey questionnaire is administered to solicit data for this study. This questionnaire survey will have two sections. Section A will gather demographic information of the respondents such as gender, age, race, educational level and location. Section B onwards is using a Likert scale to design the questions with 5 scales from strongly agree, agree, neutral, disagree and strongly disagree. Section B onwards also consists of questions about the dependent variable which is Satisfaction of use for Artificial intelligence and Four independent variables which are Information Quality, Service Quality, Perceived Usefulness, and Perceived Ease Of Use. There is a total of 32 questions for the respondents to answer.

Table 3.1: Questionnaire source

Source	Construct	Item
(Ashfaq et al., 2020)	Information Quality	IQ1 IQ2 IQ3 IQ4 IQ5
	Service Quality	SQ1 SQ2

		SQ3
		SQ4
		SQ5
	Perceived Ease Of Use	PEOU 1
		PEOU 2
		PEOU 3
		PEOU 4
		PEOU 5
(Joo et al., 2017)	Perceived Usefulness	PU 1
		PU 2
		PU 3
		PU 4
		PU 5
	Satisfaction On Aritificial Intelligence	SOAI 1
		SOAI 2
		SOAI 3
		SOAI 4

Source: Developed for the research

3.5 Construct Measurement

3.5.1 Measurement of scale

Nominal, ordinal, interval, and ratio scales are the four different types of measurement scales. These four categories of measuring scale are employed in the aforementioned research to generate, classify, and identify the survey questions.

3.5.1.1 Nominal Scale

The first level of measurement is called the nominal scale, and it uses numbers as "tags" and "labels" to describe the content. The non-numeric variables are frequently sorted using the nominal scale. For instance, this scale was used for a handful of the questionnaire's questions, which included inquiries on gender, age, and employment status.

3.5.1.2 Ordinal Scale

The second level of measurement, known as the ordinal scale, is employed to characterise the significance of the variables without generating degree distinctions amongst them. Typically, this type of question would inquire about significant data regarding the variables, such as the respondents' educational attainment, with options including SPM, Diploma, Undergraduate, Postgraduate, and so forth.

3.5.1.3 Interval Scale

The difference between a scale value determined by a numerical score and a numerical choice with equal distance values is measured by the interval scale. It is typically used to gauge the respondent's sentiment towards a certain variable and provide them a chance to voice their response to a given statement. An instance of an interval scale can be observed in a questionnaire question that offers respondents five response options, with "strongly agree" denoting selection "5". The numbers "4", "3," "2," and "1" denote agreement, disagreement, and strongly disagree, respectively.

3.6 Data Processing

Data processing, the conversion of collected data into usable information, is typically carried out by a team of researchers. Accurate completion of this process is crucial to ensure positive outcomes from the final data output. Beginning with the raw data, this process transforms it into more comprehensible formats such as charts and documents, providing the necessary structure and context for computer interpretation and utilization by employees across the organization. Given that the survey data is collected through the Google Form application, manual processing of raw data is unnecessary as Google Form provides both raw survey data and processed data in graphical form.

3.7 Method of Analysis

The Social Science Statistical Package (SPSS) 20.0 was used to examine the data gathered for this investigation. The five research hypotheses will also be tested using the findings of this study. Descriptive statistics, multiple linear regression, inference analysis, and Pearson correlation coefficient will all be used in the development of this study.

3.7.1 Descriptive Statistics

The main features of the data in this investigation are described using descriptive statistics. It offers concise summaries of the measurements and the sample. Since basic graphics analysis is the foundation of almost all quantitative data analysis, it typically comes with it. The distribution of each value, the central tendency of the values, the variability or dispersion of the values, and the degree of value spread out are all provided by the descriptive statistics in this phase of the analysis. The analysis procedure described below will then be used to these data.

3.7.2 Scale Measurement

The study will use Cronbach's alpha to assess the reliability of the data obtained from the questionnaire. This is due to the fact that Cronbach's alpha, which is based on the premise that when a the study's several questions assessing the same underlying concept may offer a simple method for evaluating the accuracy of the information gathered from the four independent variables. When combined, this analysis method could provide a measurement to measure overall impact with the numbers it presents after the measurement, such as in a research survey with five questions that each ask a different aspect of packaging that could impact the consumers purchasing intention.There is a scale and phrases to define the overall dependability of the data obtained in the process of analysing the model's outputs. The terms for each level of reliability in this model are shown in the table below.

Table 3.2: Rules of Thumb of Cronbach's Alpha Coefficient Range

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

3.7.3 Inferential Analysis

To test hypotheses, inferential statistical methods are employed. Based on the evidence provided by the findings, researchers choose which hypothesis to accept or reject. Analysing data and coming to a conclusion is the process of reasoning analysis. A class of generic statistical models known as general linear models provide the majority of the primary reasoning statistics. The Pearson correlation coefficient and multiple linear regression (MLS) were chosen for this investigation.

3.7.3.1 Multiple Regression Analysis

This study uses multiple regression analysis to test the relationship between causal independent variables and dependent variables. Since there are five independent variables that affect the dependent variable, the researcher has to use multiple regression analysis instead of simple regression analysis. Based on the metric, the multiple regression equation used to measure the independent variable will be:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$

Whereby Y indicates towards the purchasing intention of the consumers,

X_1 indicates the Information Quality;

X_2 indicates the Service Quality;

X_3 indicates the Perceived Usefulness;

X_4 indicates the Perceived Ease Of Use;

β_0 = intercept; β_1, β_2, β_3, β_4, = slope of coefficient;

e = error term

*β_0 is a constant value, and β_1, β_2, β_3, β_4 are the coefficients relating to dependent variable to the independent variable of interest.

3.8 Conclusion

This chapter is crucial for supporting the examination of chapter 4. The research design, sample design, data collection techniques, research instrument, contrast measurement, data processing, and data analysis were all covered in this chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter will analyse the data that was gathered using a Google Form. The methods used to analyse the data were multiple regression and descriptive and inferential analysis, which included the use of the Pearson correlation coefficient. SPSS software will be utilised for the calculation and collection of data.

4.1 Descriptive Analysis

4.1.1 Demographic Information

The questionnaire for this study included eight questions about demographics. For example, age, gender, location, education level, and satisfaction with artificial intelligence use

4.1.1.1 Gender

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	120	49.4	49.4	49.4

Male	123	50.6	50.6	100.0
Total	243	100.0	100.0	

Table 4.1.1.1 Gender

Source: Developed for the research

Figure 4.1. Gender

Source: Developed for the research

From the table above, it shows there are a total of 243 respondents, where 123 of them are male which represents about 50.6 percent of the respondents; and 120 in female which represents about 49.4 percent of the total respondents. The diagram above shows the pie chart in percentage of gender distribution of the respondents.The diagram above shows the pie chart is presenting the overall percentage of each education level of the respondents.

4.1.1.2 Age

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Age 16-18	46	18.9	18.9	67.3
	Age 19-21	142	58.4	58.4	100.0
	Age 22 and above	55	22.6	22.6	
	Total	243	100.0	100.0	

Table 4.1.1.2 Age

Source: Developed for the research
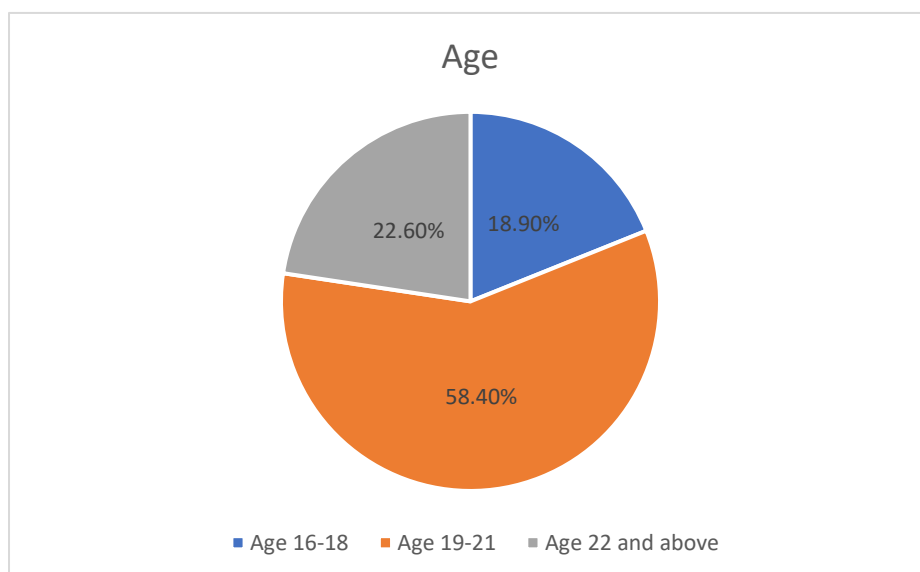
Figure 4.2 Age

Source: Developed for the research

From the table above, it shows there are a total of 243 respondents where 142 of respondents are between age 19 to 21 which represents about 58.4 percent of the respondents; 55 in age between 22 and above which represents about 22.6 percent; and 46 in the age between of 16 to 18 which represent about 18.9 percent each from the respondents. The diagram above shows the pie chart is presenting the overall percentage of each education level of the respondents.

4.1.1.3 Race

RACE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese	75	30.9	30.9	30.9
	Indian	54	22.2	22.2	53.1
	Malay	62	25.5	25.5	78.6
	Others	52	21.4	21.4	100.0
	Total	243	100.0	100.0	

Table 4.1.1.3 Race
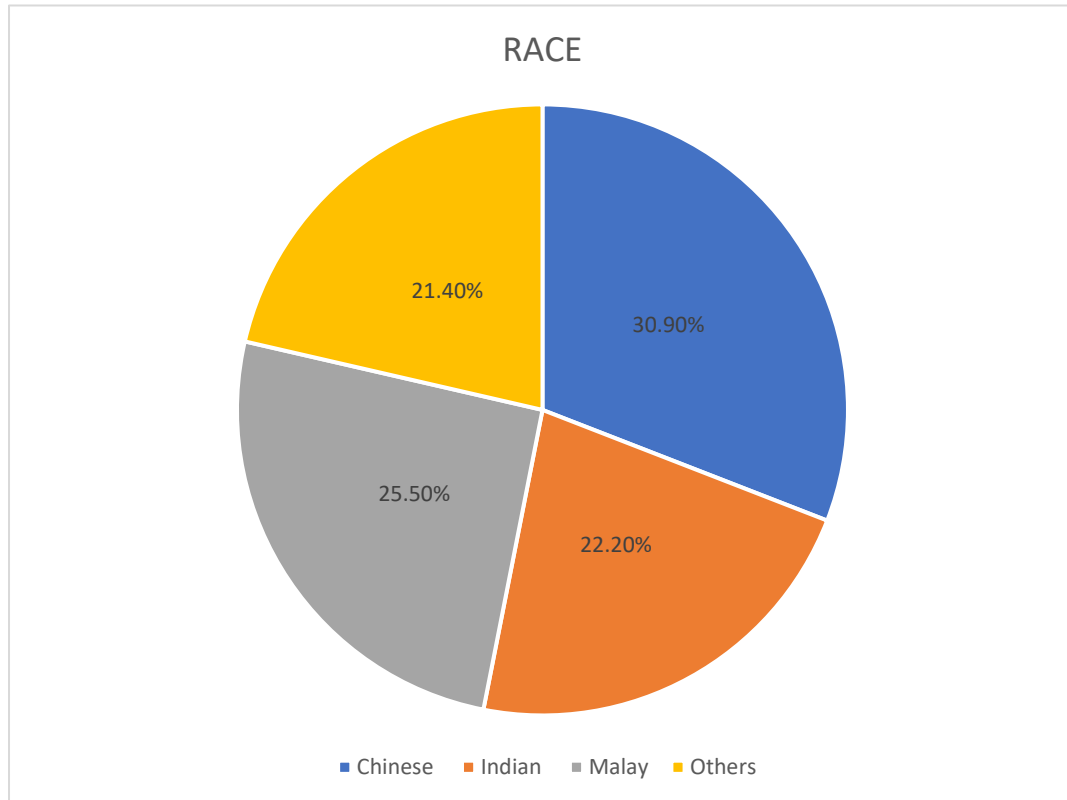
Figure 4.3 Race

Source: Developed for the research

From the table above, it shows there are a total of 243 respondents, where 75 of them are Chinese which represents about 30.9 percent of the respondents; and 62 is Malay which represents about 25.5 percent of the respondents; 54 of the respondent is Indian which indicate 22.2 percent of the respondent; 52 respondent is others which have 21.4 percent of the respondent .The diagram above shows the pie chart is presenting the overall percentage of each education level of the respondents.

4.1.1.4 Education Level

Education Level		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's Degree	104	42.8	42.8	42.8
	Diploma	91	37.4	37.4	80.2
	Postgraduate Degree	22	9.1	9.1	89.3
	SPM	26	10.7	10.7	100.0
	Total	243	100.0	100.0	

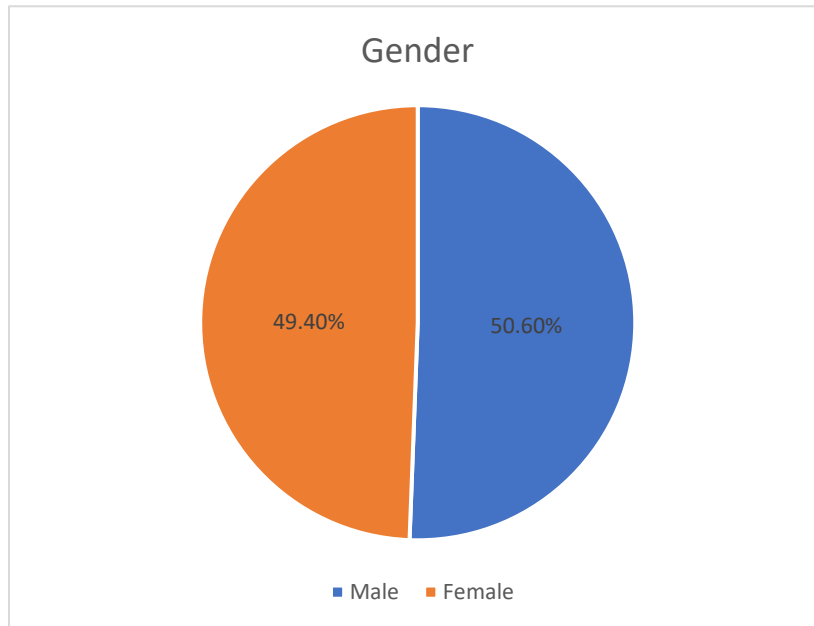Table 4.1.1.4 Education Level

Source: Developed for the research
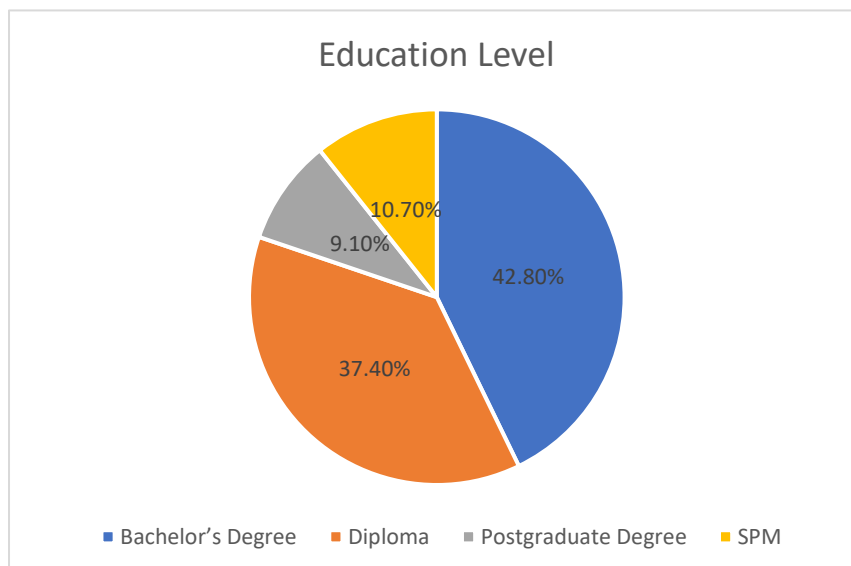
Figure 4.4 Education Level

Source: Developed for the research

From the table above, it shows there are a total of 243 respondents. There is 104 respondent that have the education level of Bachelor's Degree which represents about 42.8 percent in total of the respondents; 91 respondents hold a diploma which represents around 37.4 percent; 26 respondents have a SPM education level which represent about 10.7 percent from the total respondents; and 22 holding a Postgraduate Degree which represents around 9.1 percent of the respondents. The diagram above shows the pie chart is presenting the overall percentage of each education level of the respondents.

4.1.1.5 Location

Location					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	East Malaysia	71	29.2	29.2	29.2
	Overseas	75	30.9	30.9	60.1
	West Malaysia	97	39.9	39.9	100.0
	Total	243	100.0	100.0	

Table 4.1.1.5 Location

Source: Developed for the research
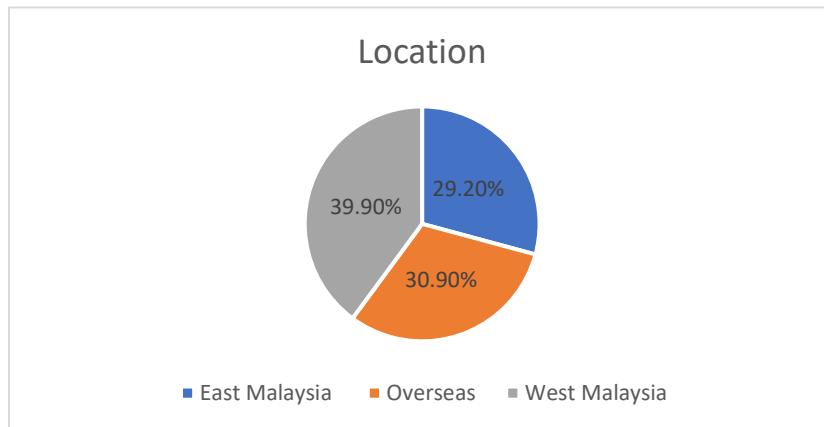
Figure 4.5 Location

Source: Developed for the research

It is evident from the above table that there are 243 responders in total. Of the total respondents, 71 are in East Malaysia, accounting for approximately 29.2 percent; 75 are located overseas, accounting for approximately 30.9 percent; and 97 are in West Malaysia, accounting for approximately 39.9 percent. The pie chart in the diagram above illustrates the respondents' total percentage of each educational level.

4.2 Central Tendencies Measurement of Construct

4.2.1 Information Quality

Table 4.6: Summary of Central Tendency for Information Quality

No	Statement	Mean	Standard Deviation

1	Artificial Intelligence (AI) provides sufficient information for my education.	4.41	0.854
2	Through this AI, I get the study information I need on time.	4.44	0.847
3	Education Information provided by this AI is in a useful format.	4.34	0.863
4	Education Information provided by this AI is clear.	4.37	0.920
5	Education Information provided by this AI is accurate.	4.42	0.841

Source: Developed for the research

4.2.2 Service Quality

Table 4.7: Summary of Central Tendency for Service Quality

No	Statement	Mean	Standard Deviation
1	The AI has a modern-looking interface it easy access to my needs.	4.46	0.809

No	Statement	Mean	Standard Deviation
2	The AI provides the right solution to my request.	4.35	0.866
3	AI has visually appealing materials for my education.	4.38	0.837
4	The AI consistently provides me with prompt responses to my queries.	4.46	0.877
5	AI interface effectively communicate to my educational needs.	4.39	0.867

Source: Developed for the research

4.2.3 Perceived Usefulness

Table 4.8: Summary of Central Tendency for Perceived Usefulness

No	Statement	Mean	Standard Deviation
1	I find the AI useful in my education.	4.44	0.787
2	The use of AI is compatible with my study habits	4.35	0.821
3	Using the AI helps me to accomplish tasks more quickly.	4.48	0.773
4	Using AI increases my education productivity.	4.43	0.827
5	Using AI helps me to perform my education work more conveniently.	4.40	0.783

Source: Developed for the research

4.2.4 Perceived Ease Of Use

Table 4.8: Summary of Central Tendency for Perceived ease of use

No	Statement	Mean	Standard Deviation
1	My interactions with the AI in my educational experience are clear and understandable.	4.43	0.847
2	Interacting with the AI in my educational experience does not require a lot of my mental effort.	4.47	0.825
3	It is easier to use the AI to find information that I need in my education work..	4.54	0.728
4	I find the AI to be easy to use in my education experience.	4.52	0.762
5	I think AI application is a flexible technology to interact with in my education needs. education work more conveniently.	4.43	0.807

Source: Developed for the research

4.2.5 Satisfaction on Artificial Intelligence

Table 4.9: Summary of Central Tendency for Satisfaction on Artificial Intelligence

No	Statement	Mean	Standard Deviation
1	On a scale from very frustrated to very contented, how would you describe your overall feelings regarding the use of AI?	4.46	0.814
2	On a scale from very dissatisfied to very satisfied, how would you rate your overall satisfaction with the incorporation of AI tools?	4.40	0.858
3	On a scale from very displeased to very pleased, how would you assess your level of satisfaction with the integration of AI tools?	4.40	0.877
4	On a scale from very unpleasant to very pleasant, how would you characterize your experience with the utilization of AI?.	4.37	0.915

Source: Developed for the research

4.3 Reliability Analysis

Table 4.10: Reliability Result of Research

Variables	Cronbach's Alpha	No. of items
Information Quality	0.854	5
Service Quality	0.837	5
Perceived Usefulness	0.806	5
Perceived Ease Of Use	0.779	5
Satisfaction on Artificial intelligence	0.764	4
Continuance intention	0.739	3

Source: Developed for the research

Based on the table 4.3.1, the Cronbach's Alpha's result of all the variables are higher than 0.7. As mentioned before, the Cronbach's Alpha's results that more than 0.7 are considered good, which means that the scale is reliable. Among them, the result of the Information Quality is the highest which is 0.854, then followed by the Service Quality which is 0.837, Perceived Usefulness which is 0.806, Perceived Ease Of Use have 0.779, Continuance intention is 0.739 and the dependent variable, Satisfaction on Artificial intelligence which is 0.764. In this case, we can conclude that all the items are reliable.

4.4 Inferential Analysis

4.4.1 Pearson Correlation Coefficient Analysis

Table 4.11: Pearson Correlation Coefficient Analysis

Correlations							
		Satisfaction On Artificial Intelligence	Information Quality	Service Quality	Perceived Usefulness	Perceived Ease Of Use	Continuance Attention
Satisfaction On Artificial Intelligence	Pearson Correlation	1	.772**	.814**	.776**	.789**	.711**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001
	N	243	243	243	243	243	243
Information Quality	Pearson Correlation	.772**	1	.849**	.747**	.740**	.703**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001
	N	243	243	243	243	243	243

Service Quality	Pearson Correlation	.814**	.849**	1	.802**	.753**	.698**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001
	N	243	243	243	243	243	243
Perceived Usefulness	Pearson Correlation	.776**	.747**	.802**	1	.804**	.696**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001
	N	243	243	243	243	243	243
Perceived Ease Of Use	Pearson Correlation	.789**	.740**	.753**	.804**	1	.695**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001
	N	243	243	243	243	243	243
Continuance Attention	Pearson Correlation	.711**	.703**	.698**	.696**	.695**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	
	N	243	243	243	243	243	243

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

Source: Developed for the research

Based on the table above indicated the correlation between the dependent variable and independent variables. The results indicated the positive or negative relationship between the dependent and independent variables. The dependent variable in this research is Satisfaction On Artificial Intelligence (AI), the independent variables are "Information Quality", "Service Quality", "Perceived Usefulness", "Perceived Ease Of Use" and an additional variable "Continuance Attention"

Refer to the table as above show that "Information Quality" has a significant positive relationship with purchase intention towards personal protection equipment. The correlation value is 0.772 and the p- value is 0.000 which is lower than alpha 0.05.

Next, "Service Quality" indicated significant positive relationship with purchase intention towards personal protection equipment. The correlation value is 0.814 and the p- value is 0.000 which is lower than alpha 0.05.

Besides that, "Perceived Usefulness" shows a significant positive relationship with purchase intention towards personal protection equipment. The correlation value is 0.776 and the p- value is 0.000 which is lower than alpha 0.05.

Besides that, "Perceived Ease Of Use" shows a significant positive relationship with purchase intention towards personal protection equipment. The correlation value is 0.789 and the p- value is 0.000 which is lower than alpha 0.05.

Besides that, "Continuance Attention" shows a significant positive relationship with

purchase intention towards personal protection equipment. The correlation value is 0.711 and the p- value is 0.000 which is lower than alpha 0.05.

4.4.2 Multiple Linear Regression Analysis

Table 4.12: Multiple Linear Regression Analysis (Model Summary)

R	R Square	Adjusted R Square	Standard Error of the Estimate
0.864	0.746	0.742	0.33713

Source: Developed for the research

Dependent Variable: Satisfaction On Artificial Intelligence

Predictors: (Constant), Information Quality, Service Quality, Perceived Usefulness. Perceived Ease Of Use

The multiple correlation coefficient, which is 0.864 in the table above, indicate a very high degree of prediction. "R" is a measure used to assess how well a dependent variable is predicted. Furthermore, as this table has shown, the outcome of the multiple regression produced an R^2 value of 0.746, meaning that the independent factors accounted for 74.6% of the variance in the dependent variable. Therefore, a model with 74.6% of the variance is deemed good.

Table 4.13: Multiple Linear Regression Analysis (ANOVA Test)

Anova						
Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	79.412	4	19.853	174.672	<.001[b]
	Residual	27.051	238	.114		
	Total	106.463	242			

a.Dependent Variable: Satisfaction On Artificial Intelligence

Predictors: (Constant), Information Quality, Service Quality, Perceived Usefulness. Perceived Ease Of Use

Source: Developed for the research

The table above indicated the independent variables statistically. The F value of 174.672 is significant at p = 0.000 (p <0.05). In short, the overall regression analysis was statistically significant when taken 4 independent variables as a group to predict the student's satisfaction on the use Artificial intelligence (AI) in education.

Table 4.14: Multiple Linear Regression Analysis (Coefficients)

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.008	.174		-.044	.965
	IQ	.141	.063	.146	2.257	.025
	SQ	.344	.071	.344	4.850	<.001
	PU	.162	.071	.146	2.285	.023
	PEOU	.349	.068	.304	5.148	<.001

a. Dependent Variable: Satisfaction On Artificial Intelligence

b. Source: Developed for the research

Based on the findings presented in the table, it can be concluded that all of the independent variables, including Information Quality, Service Quality, Perceived Usefulness, and Perceived Ease of Use, exhibit a significant relationship with students' satisfaction regarding the use of Artificial Intelligence (AI) in education, as their p-values are less than 0.05.

Furthermore, when considering the standardized beta coefficients, it becomes apparent that "Service Quality" makes the most substantial contribution to the prediction of satisfaction with AI ($\beta = 0.344$), followed by "Perceived Ease of Use" ($\beta = 0.304$). Additionally, "Perceived Usefulness" ($\beta = 0.162$) and "Information Quality" ($\beta = 0.146$) also contribute significantly, albeit to a lesser extent, to the satisfaction levels.

SOAI= 0.008 + 0.141 (IQ) + 0.344 (SQ) + 0.162 (PU) +0 .349 (PQ)

4.5 Conclusion

In this chapter, the responder's demographic profile was outlined through descriptive analysis. Additionally, the reliability of the five constructs was assessed using Cronbach's Alpha to ensure the validity of the measures. Internal consistency was further examined through reliability analysis. Ultimately, the objectives included evaluating the associations between variables and assessing the relationships between dependent and independent variables through multiple regression and Pearson correlation analysis.

Chapter 5: Discussion, Conclusion, and Implication

5.0 Introduction

An overview of the statistical study is provided in Chapter 5. Additionally, this chapter will discuss the research's main conclusions and implications. This chapter will also provide limitations and recommendations.

5.1 Summary of Statistical Analysis

5.1.1 Descriptive Analysis

In a nutshell, base on the provided information, a total of 243 respondents participated in the survey. In terms of gender distribution, approximately 50.6% were male and 49.4% were female. Regarding age groups, the majority of respondents (58.4%) fell between the ages of 19 to 21, followed by 22 and above (22.6%), and 16 to 18 (18.9%).

The respondents comprised 30.9% Chinese, 25.5% Malay, 22.2% Indian, and 21.4% others. Education levels varied, with 42.8% holding a Bachelor's Degree, 37.4% holding a diploma, 10.7% with SPM education, and 9.1% holding a Postgraduate Degree.

Geographically, respondents were spread across different regions, with 29.2% in East Malaysia, 30.9% overseas, and 39.9% in West Malaysia. These insights provide a comprehensive overview of the demographic composition of the respondents.

5.1.2 Scale Measurement

5.1.2.1 Reliability test

The highest Cronbach's Alpha value in this study is 0.854 for "Information Quality," followed by 0.837 for "Service Quality," 0.806 for "Perceived Usefulness," 0.779 for "Perceived Ease of Use," 0.764 for "Satisfaction on Artificial intelligence," and 0.739 for "Continuance intention." To sum up it simply, the reliability of internal consistency is good because half of the variables are more than 0.8.

5.1.2.2 Inferential Analysis

The Pearson Correlation Analysis is to examine the relationship between the variables. Most of the variables are tested with strong correlation with satisfaction On Artificial Intelligence such as "Service Quality", and "Perceived Ease Of Use", "Information Quality", "Perceived Usefulness". The highest correlated on the satisfaction On Artificial Intelligence is "Service Quality" (0.814) and followed by "Perceived Ease Of Use" (0.789).

Information quality, service quality, and perceived usefulness are the independent variables that will be analysed using multiple regression analysis. There is a significant correlation between perceived ease of use and artificial intelligence satisfaction. Furthermore, the F value is 174.672 and the R square value is 0.864, indicating a significant level of 0.000.

Next, the significant level for "Service Quality" is p<0.05, whereas p=0.025 for "Information Quality," p<0.05 for "Perceived Ease of Use," and p=0.023 for "Perceived

Usefulness" are not significant.To put it briefly, there is a significant correlation between all independent factors and the satisfaction with artificial intelligence.

5.2 Discussion of Major Findings

Finding the variables that affect students satisfaction on the use Artificial intelligence (AI) in education is the primary goal of this study. In this study, four theories have been put up. Two of the hypotheses have evidence, while the other two do not. The table below presents the conclusions of the hypothesis.

Table 5.0: Summary of the hypotheses testing results

No	Hypothesis	Significant Level	Supported/Rejected
H1	The information quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.	Sig = 0.025 P< 0.05	Supported
H2	The Service quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.	Sig = <.001 P< 0.05	Supported
H3	The Perceived Usefulness of AI is strongly connected with students' level	Sig = 0.023 P< 0.05	Supported

		of satisfaction when utilizing it for use in education.		
H4	The Perceived ease of use of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.	Sig = <.001 P< 0.05	Supported

5.2.1 Finding on the Hypotheses

5.2.1.1 Information Quality and Satisfaction On Artificial Intelligence

H1:The information quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

Based on the above shows that the Information Quality has a p- value of 0.025 which is lower than 0.05 significant values. This result indicated there is a significant relationship between Information Quality and Satisfaction On Artificial Intelligence. There are some literature proven the Information Quality has a significant relationship with Satisfaction On Artificial Intelligence.

For example, studies by (Chen et al. ,2020) highlight the advantages of information quality made possible by generative model-based conversational agents such as ChatGPT. These studies demonstrate the effectiveness of using such creative methods across a range of fields. The results clarify the wider implications for domains ranging from customer service to education, in addition to furthering our understanding of how generative models improve the quality of information. The research offer significant insights into the possibilities of utilizing state-of-the-art technologies to address complicated challenges and enhance many elements of human-computer interaction by delving into the subtleties of information quality and the impact of artificial intelligence on user experiences. The quality of AI-generated information in higher education is influenced by various factors such as currency, accuracy, completeness, succinctness, accessibility, adaptability, relevance, understandability, meaningfulness, timeliness,

and format. These attributes collectively determine the usefulness and consistency of the information produced, aligning with the findings of Popoola et al. (2014) that the effectiveness of AI-generated information in higher education is contingent upon its adherence to these quality measures. Therefore, H1 is supported.

5.2.1.2 Service Quality and Satisfaction On Artificial Intelligence

H2: The Service quality of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

The service quality has a p-value of $<.001$, which is less than 0.05 significant values, according to the information above. This finding suggested that satisfaction with artificial intelligence and service quality are significantly correlated. Several studies have demonstrated the strong correlation between artificial intelligence satisfaction and service quality.

The flexibility of AI chatbots, characterized by self-learning capabilities, precise personalized recommendations, constant online visibility, 24/7 availability for answering student inquiries, and enhanced stability, contributes to their superior performance compared to other technologies in educational settings, as suggested by (Ciechanowski et al. ,2019). These features enable AI chatbots to adapt to evolving student needs, provide timely and tailored support, maintain consistent online presence, and deliver reliable assistance, thereby enhancing their effectiveness in educational environments. Research also reveals that considerable increases in investments are anticipated for AI chatbot technology, suggesting a growing desire in automating educational services to raise their calibre. Furthermore, according to the "2019 China Artificial Intelligence Industry Research Report" published in December 2019 by the China Economic and Information Research Centre, the AI chatbot market was valued at 2.72 billion yuan in 2018. It is predicted to reach 16 billion yuan by 2022 (Chen et al., 2022). Therefore, H2 is supported.

5.2.1.3 Perceived Usefulness and Satisfaction On Artificial Intelligence

H3: The Perceived Usefulness of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

Perceived usefulness has a p-value of 0.023, which is less than 0.05 significant values, according to the data above. This finding suggested that information quality and artificial intelligence satisfaction are significantly correlated. Research has demonstrated a strong correlation between artificial intelligence satisfaction and information quality.

For example, when (Shroff et al., 2011) examined how students used an e-portfolio system, they discovered that students' behavioral intention to use the system was significantly influenced by their evaluation of its usefulness, which in turn led to higher satisfaction (Shroff et al., 2011). Artificial intelligence (AI)-driven methods can address environmental issues and offer a comprehensive plan for sustainable development.User attitudes towards AI adoption, as influenced by perceived utility and ease of use, significantly impact the adoption and satisfaction levels of AI technology. Specifically, individuals' perceptions of the perceived usefulness of AI, defined as the extent to which they believe using AI will bring significant benefits to them, play a crucial role in shaping their attitudes towards AI adoption, as proposed by (Machdar ,.2019). Higher perceived usefulness leads to more positive attitudes towards AI adoption, which, in turn, increases the likelihood of user acceptance and satisfaction with AI technologies. Therefore, H3 is supported.

5.2.1.4 Perceived Ease Of Use and Satisfaction On Artificial Intelligence

H4: The Perceived ease of use of AI is strongly connected with students' level of satisfaction when utilizing it for use in education.

Based on the data above, Perceived Ease of Use has a p-value of $<.001$, which is fewer than 0.05 significant values. This result implied a significant correlation between artificial intelligence satisfaction and information quality. Studies have indicated a robust relationship between information quality and artificial intelligence satisfaction.

According to (Du et al. ,2012), personal inventiveness will instantly enhance consumers' impressions of how simple items are to use (Martins and others, 2014). It is possible to ascertain how perceived ease of use influences students' satisfaction by looking at how long it takes them to learn and use a new technology tool in a classroom. Perceived ease of use, defined as students' cognitive assessment of the effort required to adapt to a new technology or system within their learning environment, influences their attitudes and behaviors towards the adoption of AI in education, as elucidated by (Pipitwanichakarn and Wongtada. ,2020). Higher perceived ease of use leads to more favorable attitudes and increased willingness among students to adopt AI technologies for learning purposes. Consequently, educational institutions that prioritize the development of AI systems that are perceived as easy to use are likely to experience higher levels of student acceptance and engagement with these technologies. Therefore, H4 is supported.

5.3 Implication of the study

5.3.1 Managerial Implication

Researching how satisfied students are with artificial intelligence (AI) in the education provides important information that guides the creation and application of AI-driven tools and technologies. Educational institutions may optimize the design, deployment, and integration of AI to improve the overall quality of education by studying the experiences and preferences of their students. The information quality affect how satisfied students are with artificial intelligence (AI) in the education. Therefore, Students' satisfaction with artificial intelligence (AI) in the classroom is significantly affected by the quality of the information it produces. Students develop trust and confidence in AI systems when they receive accurate, dependable, and pertinent information that meets their learning objectives and demands. Make ensuring that instructional content on AI-driven platforms is accurate, current, and pertinent. The information provided to students is more useful and credible when it is curated from reliable sources (Chen et al.'s. ,2020). Evaluate and improve AI systems on a regular basis in response to input from teachers and students. Over time, increase student happiness with AI-enabled education by incorporating user feedback to pinpoint areas for improvement and modifying AI algorithms and interfaces to better suit the changing requirements and preferences of students.

Next, Regarding students' satisfaction with artificial intelligence (AI) in education, service quality is a major factor. Students are more likely to be happy with their overall learning experiences when AI-driven educational offerings exhibit great service quality. Service quality is influenced by a number of factors, including how quickly AI systems respond to questions and requirements from students, how accurate and dependable the information is, how accessible and simple AI platforms are to use, and how successful AI-driven teaching and learning resources are(Ciechanowski et al., 2019). Satisfaction

can also be increased by customised interactions and assistance from AI systems that are adapted to each student's preferences and learning style. Therefore, ensuring high service quality in AI-driven educational environments is essential for fostering positive attitudes towards AI technology and maximizing its potential to enhance student learning outcomes.

Furthermore, Students' satisfaction with artificial intelligence (AI) in the classroom is highly influenced by its level of perceived usefulness. Overall student satisfaction tends to rise when they believe AI-based educational tools and services will help them meet their learning goals and improve their performance. Make sure that the learning objectives and academic goals of students are well aligned with AI-driven educational tools and services. Students are more satisfied when they believe AI technologies are directly influencing their academic achievement and advancement (Moussa.,2023). Use AI-driven tools to provide students with timely and useful feedback on their performance on assignments and their overall learning progress. Students are more satisfied when they see AI technologies as useful tools for enhancing their learning outcomes and receive prompt insights and help from them.

Lastly, It's critical to give user-friendly design and clear instructions top priority if you want to increase students' satisfaction with AI-driven educational systems. This means making sure the user interface is simple to use, has straightforward navigation, and isn't overly complicated so that children can engage with the technology with ease (Du et al. ,2012). Furthermore, giving students instructions in simple, uncomplicated language free of technical jargon makes it easier for them to understand how to make efficient use of AI-driven tools and services. Through the integration of these components, educational establishments can establish a setting in which learners feel at ease and equipped to interact with AI technology, ultimately augmenting their overall contentment with the educational process.

5.4 Limitation of the Study

Social desirability bias may have an impact on students' self-reported data regarding their satisfaction with the use of artificial intelligence (AI) in education. This could cause them to provide answers that they believe to be more socially acceptable or favourable than ones that accurately reflect their actual experiences. Due to this tendency, students may exaggerate how satisfied they are with AI technology or minimize any worries they may have. Additionally, answers from students may be influenced by their subjective expectations and views of artificial intelligence (AI) in the classroom. Regardless of their actual experiences, students who have preconceived beliefs about AI's benefits may rate it higher.

Ethical considerations in research on students' satisfaction with the use of artificial intelligence (AI) in education is one of the limitations aspects. Data privacy must be given top priority by researchers, who should take steps to anonymize personal data and guarantee the confidentiality and safe preservation of data that is gathered. It is also crucial to get participants' informed permission, which calls for explicit explanations of the goals, methods, risks, and rewards of the study as well as an affirmation of their autonomy and freedom to withdraw. It is imperative to maintain transparency at all stages of the research process, including disclosing any ties or conflicts of interest. Efficient risk assessments and the implementation of mitigation strategies are critical to minimizing harm to participants in the context of AI technology use or engagement.

5.5 Recommendation for Future Research

The first recommended advice for future researchers is to distribute questionnaires using a multi-method approach that includes both offline and online approaches in addition to doing interviews at the same time. This methodology facilitates the acquisition of data from a wide range of demographics and guarantees a thorough comprehension of the viewpoints of the students. One benefit of interviews is that they might shed light on questions not covered in the questionnaire replies and provide extra information.

Examine how teacher assistance and training might help students feel more at ease with AI in the education. Research needs to look at how teachers' attitudes, expertise, and methods of instruction affect students' views of AI technology and their level of happiness with AI-driven learning environments.

Recommendation to address ethical considerations is to implement comprehensive and ongoing ethics training for researchers involved in such studies. Key ethical rules, regulations, and guidelines that are relevant to research involving human subjects should be covered in this course, with an emphasis on the particular ethical problems that AI technology in educational contexts provide. Furthermore, training should be provided to researchers on appropriate methods of informing study participants, obtaining informed consent, handling sensitive data, and minimizing threats to participants' privacy and well-being. This training can help guarantee that research in this field is conducted ethically and with appropriate care for participants' rights and interests by providing researchers with the knowledge and abilities required to handle ethical challenges confidently and responsibly.

The final recommendation underscores the importance of dedicating ample time and resources to the research endeavor. By investing in an extended research period and

allocating sufficient funds, researchers can enhance the depth and breadth of data collection efforts. One strategy to maximize data acquisition involves conducting surveys in diverse locations, such as popular shopping destinations like Pavilion and KLCC. These bustling hubs, particularly on weekends, attract a diverse array of individuals, providing researchers with access to a broad spectrum of potential respondents. Shopping centers serve as ideal venues for engaging participants from various demographic backgrounds, including differences in education level, race, age, and income. Researchers can maximise data collection efforts and raise the possibility of obtaining solid and representative findings by carefully choosing areas with substantial visitors and demographic variety.

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Appendix A: Ethical Approval for Research Project

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
40.	The Impact of Worklife Balance on Employee Performance in Private Universities in Malaysia	Yeo Jing Wen	Dr Omar Hamdan Mohammad Alkharabsheh	13 January 2024 – 12 January 2025
41.	Determinants of Student's Satisfaction on AI Usage in Education	Chang Charng Jie	Ms Puvaneswari a/p Veloo	
42.	How Artificial Intelligence (AI) is Transforming Tourism Industry	Boon Yi Jean	Pn Raja Nurul Aini Binti Raja Aziz	
43.	Factors Affecting the Consumption Pattern of Fast Fashion Products Among Generation Z	Evelyn Chow Sum Yee	Dr Sia Bee Chuan	
44.	Antecedents and Consequences of Beauty and Cosmetic Products Impulse Purchase on TikTok	Kong Chi Kei	Dr Tang Kin Leong	
45.	Examining the Antecedents of Perceived Enjoyment and Flow Experience in Impulsive Buying Behaviour: A Study from the Perspective of TikTok User	Tan Hong Qing		
46.	Understanding the Determinants of Online Hotel Booking Intentions	Sharon Lian Sin Yee	Dr Tiong Kui Ming	
47.	A Study of Eco-Conscious Consumer Behavior on Green Products	Tan Sze Ting		
48.	Brand Loyalty Among Generation Z Towards Samsung Products in Malaysia	Chey Xin Hui	Dr Yeong Wai Mun	
49.	Factors Influencing the Adoption of Touch 'n Go eWallet Among Consumers in Malaysia	Lim Si Ting		

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c   Dean, Faculty of Accountancy and Management
        Director, Institute of Postgraduate Studies and Research

Appendix B : Survey Questionnaire

Dear participants,

I am Chang Charng Jie (Student ID: 20UKB03842). I am an undergraduate students currently pursuing Bachelor of International Business (Honours) at Universiti Tunku Abdul Rahman (UTAR), Faculty of Accountancy and Management (FAM). I am currently conducting my Final Year Project which is "Determine of Student's satisfaction on AI usage in Education" .This purpose of study is to investigate the satisfaction of students towards Artificial Intelligence (AI) being use in their education.

It will take you five to ten minutes to finish the questionnaire, so please cooperate with us. Your identify and personal information will remain private. Your involvement will remain anonymous, and all data will be kept private and used just for academic research. If you would like more information about this research study or if you have any questions, please contact me at chang0910@1utar.my.

Sincerely,

Chang Charng Jie

2003842

Section A

PERSONAL DATA PROTECTION NOTICE

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.

1. Personal data refers to any information which may directly or indirectly

identify a person which could include sensitive personal data and expression

of opinion. Among others it includes:

a) Name

b) Identity card

c) Place of Birth

d) Address

e) Education History

f) Employment History

g) Medical History

h) Blood type

i) Race

j) Religion

k) Photo

l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but

not limited to:

a) For assessment of any application to UTAR

b) For processing any benefits and services

c) For communication purposes

d) For advertorial and news

e) For general administration and record purposes

f) For enhancing the value of education

g) For educational and related purposes consequential to UTAR

h) For replying any responds to complaints and enquiries

i) For the purpose of our corporate governance

j) For the purposes of conducting research/ collaboration

3. 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.

4. 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.

5. 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:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. 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.

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

Acknowledgment of Notice

[ ] I have been notified and that I hereby understood, consented and agreed

per UTAR above notice.

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

…………………………

Name:

Date:

Questionnaire

Demographic :

1. Gender

(   ) Male

(   ) Female

2. Age range

(   )16-18

(   ) 19-21

(   ) 22 and above

3. Race

(   ) Chinese

(   ) Indian

(   ) Muslim

(   ) Others

4. Education level

(   ) High school

(   ) Diploma

(   ) Bachelor's degree

(   ) Postgraduate degree

5. Location

(   ) East Malaysia

(   ) West Malaysia

(   ) Overseas

Information quality:

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Level of Agreements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Artificial Intelligence (AI) provides sufficient information for my education	1	2	3	4	5
2. Through this AI, I get the study information I need on time.	1	2	3	4	5
3. Education Information provided by this AI is in a useful format.	1	2	3	4	5
4. Education Information provided by this AI is clear.	1	2	3	4	5
5. Education Information provided by this AI is accurate.	1	2	3	4	5

Service quality :

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Level of Agreements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The AI has a modern-looking interface it easy access to my needs	1	2	3	4	5
2. The AI provides the right solution to my request.	1	2	3	4	5
3. AI has visually appealing materials for my education	1	2	3	4	5
4. The AI consistently provides me with prompt responses to my queries	1	2	3	4	5
5. AI interface effectively communicate to my educational needs	1	2	3	4	5

Perceived usefulness :

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Level of Agreements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I find the AI useful in my education.	1	2	3	4	5
2. The use of AI is compatible with my study habits	1	2	3	4	5
3. Using the AI helps me to accomplish tasks more quickly.	1	2	3	4	5
4. Using AI increases my education productivity.	1	2	3	4	5
5. Using AI helps me to perform my education work more conveniently	1	2	3	4	5

Perceived ease of use :

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Level of Agreements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. My interactions with the AI in my educational experience are clear and understandable	1	2	3	4	5
2. Interacting with the AI in my educational experience does not require a lot of my mental effort	1	2	3	4	5
3. It is easier to use the AI to find information that I need in my education work	1	2	3	4	5
4. I find the AI to be easy to use in my education experience	1	2	3	4	5
5. I think AI application is a flexible technology to interact with in my education needs	1	2	3	4	5

Determine of students satisfaction on the use Artificial intelligence (AI) in education:

1. On a scale from very frustrated to very contented, how would you describe your overall feelings regarding the use of AI

Very frustrated	Frustrated	Neutral	Contented	Very contented
1	2	3	4	5

2. On a scale from very dissatisfied to very satisfied, how would you rate your overall satisfaction with the incorporation of AI tools (

Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
1	2	3	4	5

3. On a scale from very displeased to very pleased, how would you assess your level of satisfaction with the integration of AI tools (1 very displeased , 5 very pleased)

Very displeased	Displeased	Neutral	Pleased	Very pleased
1	2	3	4	5

4. On a scale from very unpleasant to very pleasant, how would you characterize your experience with the utilization of AI (1 very unpleasant , 5 very pleasant)

Very unpleasant	Unpleasant	Neutral	Pleasant	Very pleasant
1	2	3	4	5

Continuance intention

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

Level of Agreements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I intend to continue using AI in the future for my education purpose.	1	2	3	4	5
2. I will constantly try to use AI for my education purpose.	1	2	3	4	5
3. I will strongly recommend others to use AI for their education purpose.	1	2	3	4	5

Appendix C: SPSS Data Analysis Output

i) Reliability Test

a) Information Quality

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	243	100.0
	Excluded[a]	0	.0
	Total	243	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
.854	.854	5

b) Service Quality

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	243	100.0
	Excluded[a]	0	.0
	Total	243	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
.806	.806	5

c) Perceived Usefulness

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	243	100.0
	Excluded[a]	0	.0
	Total	243	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
.779	.780	5

c) Perceived ease of use

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	243	100.0
	Excluded[a]	0	.0
	Total	243	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
.764	.764	4

ii) Descriptive Analysis

Information Quality (IQ), Service Quality (SQ), Perceived Usefulness (PU), Perceived ease of use (PEOU), Continuance Attention (CA)

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IQ	243	1.40	5.00	4.3942	.68741
SQ	243	2.00	5.00	4.4082	.66278
PU	243	2.00	5.00	4.4189	.59901
PEOU	243	2.00	5.00	4.4790	.57898
SOAI	243	2.00	5.00	4.4043	.66327
CA	243	1.33	5.00	4.4252	.69780
Valid N (listwise)	243				

iii) Multiple Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.864a	.746	.742	.33713	.746	174.672	4	238	<.001

a. Predictors: (Constant), PEOU, IQ, PU, SQ

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.412	4	19.853	174.672	<.001b
	Residual	27.051	238	.114		
	Total	106.463	242			

a. Dependent Variable: SOAI
b. Predictors: (Constant), PEOU, IQ, PU, SQ

Coefficientsa

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.008	.174		-.044	.965
	IQ	.141	.063	.146	2.257	.025
	SQ	.344	.071	.344	4.850	<.001
	PU	.162	.071	.146	2.285	.023
	PEOU	.349	.068	.304	5.148	<.001

a. Dependent Variable: SOAI

iv)   Pearson   Correlation   Coefficient

Descriptive Statistics

	Mean	Std. Deviation	N
SOAI	4.4043	.66327	243
IQ	4.3942	.68741	243
SQ	4.4082	.66278	243
PU	4.4189	.59901	243
PEOU	4.4790	.57898	243

Correlations

		SOAI	IQ	SQ	PU	PEOU
Pearson Correlation	SOAI	1.000	.772	.814	.776	.789
	IQ	.772	1.000	.849	.747	.740
	SQ	.814	.849	1.000	.802	.753
	PU	.776	.747	.802	1.000	.804
	PEOU	.789	.740	.753	.804	1.000
Sig. (1-tailed)	SOAI	.	<.001	<.001	<.001	<.001
	IQ	.000	.	.000	.000	.000
	SQ	.000	.000	.	.000	.000
	PU	.000	.000	.000	.	.000
	PEOU	.000	.000	.000	.000	.
N	SOAI	243	243	243	243	243
	IQ	243	243	243	243	243
	SQ	243	243	243	243	243
	PU	243	243	243	243	243
	PEOU	243	243	243	243	243