FACTORS INFLUENCING SATISFACTION OF ONLINE LEARNING ENVIRONMENT AMONG MALAYSIANS

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Factors Influencing Satisfaction of Online Learning Environment Among Malaysians

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DECLARATION

I hereby declare that:

(1) This Research Project 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 Research Project 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) The word count of this research report is **18,220**.

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LIST OF ABBREVIATIONS

IR	Industrial Revolution
MCO	Movement Control Order
TAM	Technology Acceptance Model
CPD	Continuing Professional Development
SPSS	Statistical Package for the Social Sciences
BELS	Blended E-Learning System
IV	Independent Variable
DV	Dependent Variable
SOLE	Satisfaction of Online Learning Environment
PU	Perceived Usefulness
CQ	Course Quality
SQ	System Quality
I	Instructor

PREFACE

The research project is one of the projects which is needed to be undertaken as a part of fulfilment of requirement in pursuing the postgraduate programme of Master in Business Administration in Universiti Tunku Abdul Rahman (UTAR). The topic entitled "Factors Influencing Satisfaction of Online Learning Environment Among Malaysians" has been selected to conduct in this research.

The reason of selecting the topic related to satisfaction of online learning environment is to determine the satisfaction level of Malaysians in dealing with online learning precisely. Because of the global pandemic COVID-19 outbreak in Malaysia, the adoption of online learning has become a new learning approach for most educational institutions and learners. Having said that, the satisfaction of learners in online learning environment remains as the primary concern to enhance learning effectiveness. Hence, through this study, it provides better understanding on the relationship between perceived usefulness, course quality, system quality, and instructors toward satisfaction of online learning environment in Malaysia. Therefore, this research will provide more an updated information to educational institutions, individuals, as well as government in order to make better future improvement.

In this research, the importance of the online learning and satisfaction of learners will be stated clearly throughout the discussions. A greater level of satisfaction of a learner in an online learning environment could contribute to a higher level of performance and motivation in learning. Conclusively, this research will contribute several beneficial information and findings to provide a comprehensive and clearer picture pertaining to the satisfaction of online learning environment in Malaysia to several parties including educational institutions, individuals, government, as well as future researchers.

ABSTRACT

The online learning has become a new normal for most learners in Malaysia, and learners are now gradually adapting to such learning environment owing to its flexibility, convenience and accessibility. The arrival of global pandemic COVID-19 has pushed many educational institutions and organizations to adopt online learning approach in order to continue its operation. With that, satisfaction of online learners is critical to ensure learners achieve academic success and intention to continue study. Therefore, this research is essential for educational institutions, individuals, and government to determine and develop the best solutions to enhance satisfaction of online learning environment among learners in Malaysia. The aim of this research project is to examine the factors that influence satisfaction of online learning environment among Malaysians.

The independent variables of this research include perceived usefulness, course quality, system quality, and instructor, whereas the dependent variable is satisfaction of online learning environment. A total of 280 sets of valid responses have been collected from the targeted respondents via Google Form which consist of three major sections. The collected data were analysed by using Statistical Package for the Social Sciences (SPSS) software Version 26 in order to further analyse and contribute to the findings and conclusion of this research topic.

The findings have clearly showed that the factors of perceived usefulness, course quality, system quality, and instructor are significantly influence towards the satisfaction of online learning environment in Malaysia. The findings of this research found that system quality is most influential factor that influence satisfaction of online learning environment. However, there were no statistically significant difference in the satisfaction of online learning environment based on gender and age group. The implication and limitation of the study are also being further discussed and described. Recommendations are also being proposed in order to further assist future researchers in conducting similar research topic that related to satisfaction of online learning environment.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This chapter directs the readers with an outline of this research in several sections, including background of the research, research problem, objectives of research, research questions, hypotheses development of the research, research layout, and significance of the research.

1.1 Research Background

In today's technology-driven era, online learning has become widely seen across many educational institutions, including schools, universities and training centres. In fact, the terms "online learning" and "e-learning" are being used interchangeably among many scholars, however, these terms conveyed different meanings to one another. The level of interaction engaged in the learning is the major distinction between "online learning" and "e-learning". Online learning is defined as a real-time distant learning system that engaged computer media instruction via the internet to enhance and enrich the learner's learning process (Dhawan, 2020). As the word "online" implies, online learning carries on just like traditional learning, except those lessons are conducted entirely on a virtual platform in the comfort of the learners' space. For instance, instructors and learners are expected to be present in the online classes and they have better interaction with each other on a real-time basis via the same virtual platform.

On the other hand, electronic learning or better known as e-learning emphasizes more on a self-paced learning process in which the courses are delivered electronically (Basak, Wotto, & Bélanger, 2018). In contrast to online learning, e-learning seldom takes place in a real-time setting, and learners are not required to attend to attend an actual class, both physically and virtually. As an example,

learners would access to an e-learning portal to complete their assigned tasks and would need to go through the course materials such as PowerPoint slides and explanation videos on their own independently. The courses will be led by the instructors, and learners are connected with their instructors through internet at all times, even if they are in the same premise.

The evolution of technology in educational institution has benefited in the improvement of the learning process through online learning settings, where learners have greater control over their learning speed and their learning schedules (Rajabalee, Santally, & Rennie, 2019). Because of that, the integral of electronics into the education system has become popular nowadays among educational institutions as it is the simplest, flexible, modern and cost-effective way for the instructors to reach the knowledge to students (Rahman et al., 2017). Other than that, online learning could be an effective tool to deliver the education information to the learners regardless the distance and time differences. This is because the online learning systems enable the students to revise and access to the it anytime and anywhere. Azhari and Ming (2015) found that the ability to reach large audiences, approachability, functionality, and long-term flexibility have all contributed to an increase in the growth for online learning. Additionally, learners are frequently showed to have a high level of engagement throughout online classes and programmes, making online learning systems popular among the learners these days (She et al., 2021).

Online learning systems are starting to become more visible across the educational institutions and organizations. Aligning with the current trends, many life-long learning programmes such as personal finances planning, real-estate management, professional trainings, on-campus learning and many others are now transitioned to be delivered through web-based seminar (webinar). Currently, most of the universities in Malaysia have jump-started their moves to implement online learning into their courses and syllabus such as University of Nottingham, Universiti Teknologi MARA, Open University of Malaysia, Universiti Utara Malaysia, and many more (Attaran & Zainuddin, 2018). In addition, the introduction of Industrial Revolution (“IR”) 4.0 has changed the manner of one’s life to rely on the internet as a need in the economic, communication, education and

other areas, driving many educational institutions to integrate technology into its education systems in accordance with IR 4.0 (Ismail et al., 2020). The emergence of IR 4.0 is to ensure the education sectors achieve institutional sustainability and a continual improvement in their teaching and learning delivery systems with the aims to produce excellence graduates for the workplace. Besides, the Malaysian government has taken the initiative to aid the B40 family and students by offering internet assistance for them to connect the internet, allowing them to get free internet access to continue their online learning (Yusoff, 2020).

The World Health Organization announced the COVID-19 outbreak as a pandemic on March 11, 2020, in acknowledgement of its rapid spread throughout the globe, followed by Malaysian government imposition of movement restrictions a week later on March 18, 2020 (Tang, 2020). Because of the spike of global pandemic COVID-19 in Malaysia, the traditional education approach has been forever altered whereby teaching sessions are now taking place remotely via virtual platforms. As a matter of fact, the Malaysian Higher Learning Institutions have been using virtual learning since the late 1990s, however, the adoption of online learning was not widespread across educational institutions and organizations in Malaysia prior to the arrival of global pandemic COVID-19 (Selvanathan, Hussin, & Azazi, 2020). Indeed, the pandemic has pushed many educational institutions to modernise and move forward in pursuing IR 4.0 and integrating technologies into learning systems. With that being said, attending online courses and training has been a new normal in society among majority of learners, despite the fact that Malaysia has undergone several phases of movement control order and is still in battling with COVID-19 pandemic. Because of that, several researchers asserted that online learning has brought positive impact to learners such as increased information retention, feedback, and reduced time commitment and it was suggested for educational institutions to continue implement online learning (Zeglen & Rosendale, 2018; Yang, Mak, & Yuan, 2021; Dhawan, 2020).

Apart from that, online learning method is shown to be an effective way in ensuring the quality of education, innovative as well as the knowledge of the students as the infusion of computing technology into the education could enhance the learning environment in a way more interesting than unexpected (Hamid et al., 2020). In fact,

majority of the students are tended to be pay more attention and being attracted in the online classes compared to the traditional ways of teaching. Khamparia and Pandey (2017) asserted that the online learning courses are integrated with multimedia tools which could increase the learners' learning interest and provide a comprehensive understanding of the concepts. It goes without saying that "a picture speaks more than a thousand words", and this could best describe the integration of technology into education and learning. With the assistance of technology, the instructors could explain the syllabus more thoroughly by providing relevant pictures and videos.

In line with today's corporate world, a continuous professional learning and career development has become a must for most sectors, especially in this ever-changing competitive world. Certainly, many organizations have begun to offer many supplementary webinars and online trainings to their employees in relation to their respective professions, allowing them to acquire additional skills and excel knowledge that are necessary for professional obligations and to remain competent in the industry. For instance, many professional qualifications, such as the Association of Chartered Certified Accountants (ACCA) and the Malaysian Institute of Chartered Secretaries and Administrators (MAICSA), require holders to attend mandatory Continuing Professional Development ("CPD") courses every year to collect CPD points and expand their knowledge pertaining to their professions prior to its membership renewal (ACCA, 2020; MAICSA, 2022). In conjunction with Malaysia's government safety measures against COVID-19, many CPD courses are now being offered virtually to the learners with plenty of choices and time available that could cater to their needs and compatibility.

1.2 Problem Statement

Individual's lifestyles have been continuously improved by technological innovation, with people becoming increasingly reliant on the internet due to the evolution of technology over the decades. Certainly, people who are not computer literate may face problems when it comes to online learning, because having a good

grasp of information technology skill could be advantageous for online learning. On the other hand, people who are computer literate are tend to possess a favourable attitude towards technology around them and tend to be more proactive in seeking information pertaining to their chosen courses or subjects on the internet. With that being said, the young generation who are technologically-savvy would be effective in engaging with online learning as they are growing up entirely in the age of electronic gadgets. This is due to the reason that they had exposed to the internet during early age and are familiar with any type of technology such as computers, mobile devices, electronic gadgets, and so forth (Veluchamy, Bharadwaj, Vignesh, & Sharma, 2016). However, several issues with online learning such as inadequate technological infrastructure, poor internet connectivity, lack of sense of connection and limited interactive capabilities are commonly seen among the online learners and students (Taat & Francis, 2020).

Furthermore, the sudden spike of COVID-19 in Malaysia has compelled the country to implement several levels of Movement Control Order ("MCO") that restrict the mobility of individuals from travelling within the country starting on 18th March 2020, forcing most educational institutions and organizations to perform their operations through virtual platforms. The closure of campus and travel restriction order had a significant impact on traditional learning settings, many educational institutions have turned to an online learning as the best option for continuing the education process. As a result, many educational institutions have started to deploy online learning through online communication software platforms such as Microsoft Teams, Zoom, Google Classroom, and others to conduct the online classes. In view to the current learning system in Malaysia, online learning has integrated into the learner's life to the point where virtual studying has become a new normal for majority of learners, and they have begun to adapt to the online learning environment.

According to Lim (2021), there are nearly 21,000 of Malaysian students withdrew out of the education system during emergence of COVID-19, with a dramatic increase from March 2020 to July 2021. Having said that, the arrival of COVID-19 in Malaysia has led to drastic shift for many learners, who have transitioned from physical learning to virtual learning with immediate effect in order to ensure

continuity of learning progression and development. Certainly, some learners may require longer time to acclimate and adapt to such changes in their learning approach that the majority of them are not accustomed with. As a matter of fact, satisfaction that perceived by learners in an online learning environment are relatively crucial for smoothing their learning process and developing sound mental and physical health. Nevertheless, studying through online could be a challenging task for certain people due to limited resources and comfortable setting. Besides, several previous researchers have claimed that high exposure to online learning could lead to social isolation, limited feedback from students, weak interpersonal communication skill development, psychological distress and a variety of other issues (Islam, Beer, & Slack, 2015; Hasan & Bao, 2020; Raza et al., 2020).

Online learning has been introduced in some educational institutions over the last two decades, but such initiatives have not been adopted by many institutions due to its structures and practices that are completely different from traditional learning approaches, causing many institutions to be hesitant to implement online learning (Mahyoob, 2020). Despite the fact that online learning provides learners with a high level of functionality and flexibility, the quality of online learning environment in comparison to traditional face-to-face learning environment remains as a persistent concern for most learners. The quality of online learning environment varies depending on the learners, for instance, quality of instructors, quality of course being delivered, amount of support provided by the faculty, level of communication, amount of time receiving feedback, and many other factors. With that being said, learners who preferred face-to-face interaction may doubt the quality in an online learning environment owing to the possibility of receiving real-time feedback. However, many educational institutions were pushed to implement better holistic online learning to learners as a result of the great lockdown across the globe. Learners require a high level of social care at a major crise such as the transition to a new educational environment in order to enhance their focus and motivation to online learning.

In addition, online learning could be an effective alternative learning approach for instructors and learners, nevertheless, several concerns must be addressed, such as limited internet accessibility and coverage. Indeed, an internet connection plays an

important role in an online learning since it facilitates communication, information sharing, and access to course material. However, a reliable and strong internet connection allows online learning to take place and to ensure the seamless execution of an online teaching and learning process for both instructors and learners. According to Berita Harian (2020), it was reported that more than 50 percent of learners in Sabah, Malaysia falls short of internet accessibility and connectivity owing to poor infrastructure. A poor online learning infrastructure and weak internet connection have made online learning more challenging for learners, particularly in suburban, rural areas, and remote areas in Malaysia. Aside from the limited internet access, the learners experience difficulty in connecting with their instructors, interacting with their peers, and gaining access to laboratories, all of which have a major disruption on their studies. Furthermore, a survey of over 12,000 respondents revealed that 30 percent of them had experienced a weak internet connection during online classes, while 12 percent of them needed to visit a cybercafe to access the internet or a computer as the internet is not a necessity that everyone can afford it (IIUM Student Union, 2020).

On the other hand, several researchers have claimed that students who are proactive and out-going in physical classes found it challenging to communicate effectively with their peers and instructors through online (Bakar, Shah, & Xu, 2020; Alawamleh, Al-Twait, & Al-Saht, 2020; Barrot, Llenares, & Rosario, 2021; Khobragade et al., 2021). According to Lischer et al. (2021), online learning has led many students to experience depression and burnout syndrome during online class as a result of the longer hours of study compared to physical class. This is due to the reason that online learners said that sitting in front of the electronic gadgets all alone for a few hours of lecturing and studying may cause frustration, exhaustion, and anxiety (Bolatov et al., 2021). Distractions, technological glitches, poor time management, and absence of in-person interaction are all issues that learners experience when taking online programmes (Friedman, 2020).

1.3 Research Objectives

i. To examine the factors that influence satisfaction of online learning environment among Malaysians. Hence, this research will examine the four factors namely perceived usefulness, course quality, system quality, and instructor.

ii. To examine the significant difference between gender and age group towards the satisfaction of online learning environment.

1.4 Research Questions

i. What are the factors that influence satisfaction of online learning environment among Malaysians?

ii. Is there any significant difference among gender towards the satisfaction of online learning environment among Malaysians?

iii. Is there any significant difference among age group towards the satisfaction of online learning environment among Malaysians?

1.5 Hypotheses Development

H1: There is a positive relationship between perceived usefulness and satisfaction of online learning environment.

H2: There is a positive relationship between course quality and satisfaction of online learning environment.

H3: There is a positive relationship between system quality and satisfaction of online learning environment.

H4: There is a positive relationship between instructor and satisfaction of online learning environment.

H5: There is a significant difference between gender towards satisfaction of online learning environment.

H6: There is a significant difference between age group towards satisfaction of online learning environment.

1.6 Significance of Study

This research could provide an overview to educational institutions to further enhance the satisfaction of learners in the online learning environment. In line with the current trends, it is believed that online learning will be continuously implemented by most educational institutions due to the flexibility and convenience it could provide. Hence, the perceived satisfaction of learners is one of the key factors that led to positive motivation as well as achieve academic success. Needless to say, the perceived satisfaction may vary among the individuals in accordance with their personal expectation. Thus, the educational institutions such as schools, universities, training centres could take the initiatives to enhance learners' satisfaction in the participated online courses by offering an updated online software, providing an adequate and frequent real-time interaction, as well as adjusting teaching patterns in relation to the learners' characteristics in terms of their personalities and learning styles. By catering the different characteristics of the learners, it is believed to enhance learners' satisfaction in an online learning environment which could assist them to achieve academic success more effectively and efficiently.

Apart from that, this research provides individuals who are currently engaging or engaged in the online learning a clearer picture of how the satisfaction played an important role in one's academic success and motivation to study. Through the findings, individuals may have better grasps of the factors that influence one's satisfaction in online learning environment and will assist them to stay motivated as an online learner, especially in today's online education trends. Though, the learners' motivation in online learning environment may be diminished due to the limitation of physical interactions. Other than that, the findings enable individuals to have in-depth insight of the factors that influence Malaysian learners' satisfaction in online learning environment. Additionally, individuals could also take the initiative to enhance self-motivation in online learning by finding an effective way to connect and interact with instructors and other learners through online platforms, such as utilizing technology to organize online gathering for ice-breaking session and a set of team-building activities.

Last but not least, the findings of this research provide a useful guide for government to motivate learners in online learning environment. The online studying has been a new normal in most of the Malaysia's educational institutions, though some institutions have initiated blended learning into their learning systems. In fact, the abrupt change in the learning environment has led many learners to experience mental distress, especially during the first phase of movement restrictions when classes are conducted entirely via online. According to Zainal (2021), more than 21,000 Malaysian students have dropped out from schools before completing their education period. Thus, the findings could provide a guideline for government to provide up-to-date technical support, information technology infrastructure support, and training programmes to educational institutions and instructors in order to enhance learners' learning experience and motivation to engage in online learning, allowing the government to achieve "Education 4.0" that are implemented in line with the Malaysia Education Blueprint 2015-2025 and IR 4.0 (Ministry of Education Malaysia (MoE), 2015).

1.7 Research Layout

This research is primarily focuses on examining the factors that influencing satisfaction of online learning environment among Malaysia by taking into account of the ever-changing trend in today's era where online learning is progressively become a new normal in most educational institutions, organizations, training centres, and so forth. This makes the satisfaction of learners in the online learning an important factor to be considered in order to enhance their learning experience and achieve academic success that is necessary to boost one's personal development in life. To explain the online learning environment, the underlying theories in this research include the Technology Acceptance Model (TAM) and McClelland's Theory of Needs. This research adopted the research framework developed by Mokhtar et al. (2020). The previous study was conducted to examine the satisfaction level of students towards e-learning system in Polytehnic Malaysia. In addition, a new variable "Instructor" will be adding in to the existing adopted research framework to study the importance of instructor in influencing the satisfaction of learners in an online learning environment. This is because previous researchers have asserted that instructors played a critical role in delivering a good quality of lectures and motivating learners in an online learning environment (Gopal, Singh, & Aggarwal, 2021). Furthermore, the gender and age group of respondents were included in this research to examine if there was a significant difference towards satisfaction of online learning environment. This is due to the reason that the transition in the online learning environment has been exposed to the younger generation in Malaysia these days, as well as taking gender differences in the acceptance of technology in the online learning into account. Because of the global pandemic COVID-19 outbreak in Malaysia, this research will be conducted by collecting primary data from respondents via online questionnaire, Google Form to collect the opinions of Malaysians regarding online learning satisfaction. Several analysis tools will be employed to examine the relationship among variables through Statistical Package for the Social Sciences ("SPSS") Version 26. The further discussion on the analysed data will be discussed in the last chapter of this research.

1.8 Limitation and Delimitation

Time factor is one of the limitations that identified in this research. Because of the limitation, researcher is required to shorten the process of developing research within a short period of timeframe by reducing the number of targeted respondents being included in this research. With that, the findings of this research may be affected with a small sample size drawn to represent the population as a whole. Indeed, a larger sample size would contribute to more accurate findings, thereby increasing the reliability and accuracy of this research which could serve as a future reference for future researchers that are intended to perform research relating to the satisfaction of online learning environment. Apart from that, the distributed online questionnaire is only available in English which may create a limitation to this research in targeting respondents that are not proficient in English. Because of that, the research may receive a limited response from the respondents to represent the population, and the researcher may be unable to target respondents derive from diverse backgrounds to participate in this research.

On the other hand, the delimitation of this research is sampling location. This research is primarily targeted towards Malaysian respondents with reference to their experience in the participation in an online learning programme. Because of the worldwide global pandemic COVID-19, the transition to online learning applies not only to Malaysian learners, but also to learners all over the world. With that being said, the responses from other countries could provide a significant contribution to the findings of this research. This is due to the fact that targeting respondents from other countries bring a wider and distinct perception and standpoints to the online learning environment due to differences in culture, attitudes and behaviours. As a result, it allows researcher to have a comprehensive grasp about learner's satisfaction in an online learning environment outside of the Malaysian context.

1.9 Conclusion

This chapter presents an overview on the factors influencing satisfaction of online learning environment among Malaysians and primary problems that are the majority of learners are now encountering in the online learning environment. The relationship of the variables developed in the proposed conceptual framework was used to formulate hypotheses and research questions for this research. The proposed conceptual framework and literature review of the variables will be discussed further in the next chapter.

CHAPTER 2: LITERATURE REVIEW

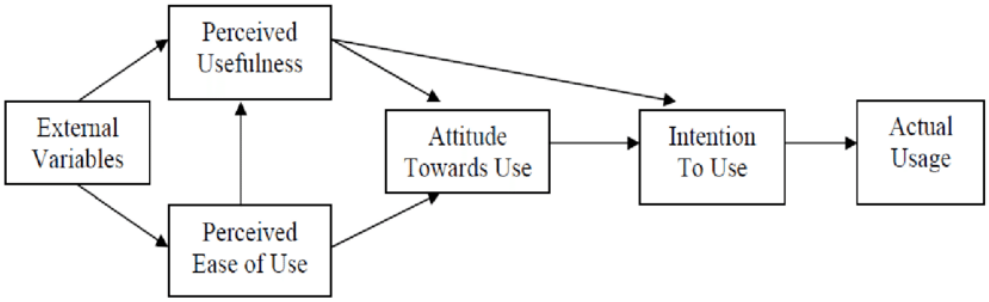
2.0 Introduction

This chapter will include the discussion sections such as the underlying theories in this research, literature review of the variables including independent variables and dependent variable, hypotheses development of the research, and a proposed theoretical or conceptual framework.

2.1 Underlying Theories

2.1.1 Technology Acceptance Model (TAM)

Figure 2.1: Technology Acceptance Model (TAM)



Note. From Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. doi:10.2307/249008

Technology Acceptance Model ("TAM") is the theory that applied in this research which was developed by Fred Davis (Davis, 1989). Generally, TAM is a model that is being applied widely to measure the usage and acceptance of technology of the users by examining through several constructs which include external variables that may influence perceived usefulness, perceived ease of use and attitude towards use of technology

(Venkatesh, 2000). TAM was established to identify possible drivers and impediments of technology acceptability. Currently, the concept of TAM is regarded as the finest model for comprehending information technology acceptability because TAM explains users' desire to utilise information systems through two aspects of TAM which include perceived usefulness and perceived ease of use (Davis, 1989). This is because the easier a user perceives a new technology or service to be to use, the more valuable they consider it to be. Furthermore, if one technology is regarded to be handier than another, people are more inclined to employ it (Han & Sa, 2021). A previous researcher has conducted a study that concentrating on the perception of online learning integration and implementation among learners by using TAM model. The study has shown that the online learning experience was practical and useful, with individuals saying that they comprehended the course material and that their real-time interaction between instructors and learners was effective (Almarabeh, 2014). Hence, the TAM's fundamental constructs, perceived usefulness and perceived ease of use, could be used to further explain the satisfaction of online learning environment.

2.1.2 McClelland's Theory of Needs

One of the most fundamental concepts for managers, leaders, and educators to analyse motivation of individual is McClelland's Theory of Needs (Turabik & Baskan, 2015). Generally, McClelland identifies three primary needs that people acquire as a result of their experiences in life: the Need for Affiliation, the Need for Power, and the Need for Achievement (Vero & Puka, 2017). Indeed, motivation is one of the key factors that led to academic success because a motivated learners are most likely to undertake challenging tasks and to be highly enthusiastic in learning environment, as well as to display improved performance, consistency and creativity (Hartnett, 2016). The urge to make friends and form mutually beneficial relationships with others is referred to as the Need for Affiliation. Passive

people will want to avoid interpersonal confrontation at all costs, even if it is necessary to complete a task (Jokelova, 2013). The urge to dominate people and affect their behaviour is referred to as the Need for Power (Vero & Puka, 2017). Individuals want to develop their sources of power and authority in order to dominate everything. The Need for Achievement includes desire to perform better and solve difficulties involves accepting personal responsibility, directing projects, demonstrating full performance, requiring immediate feedback, and mastering complicated or difficult jobs (Turabik & Baskan, 2015). In short, the McClelland's Theory of Needs could use to explain how certain types of goals are essential for instructors and learners in shaping their behaviours in online learning environment.

2.2 Literature Review of the Variables

2.2.1 Perceived Usefulness

The principle of perceived usefulness was initially established by Fred Davis in the technology acceptance model (TAM), which defined it as the degree to which a person has trust and confidence that a specific advanced system would assist and help them to enhance their performance (Davis, 1989). Aside from that, the perceived usefulness is a perceptual measurement of the level to which the stakeholder assumes that utilizing a particular system could help in enhancing the efficiency of performance of an individual or the organization as a whole (Ozkan & Raphael, 2009). Individuals that have perceived greater usefulness in the information system are more likely to generate positive satisfaction, which leads to an improvement in their work performance. Perceived useful has been discovered as a significant and direct predictor of future usage intentions (Wu & Chen, 2017). A study demonstrated that perceived usefulness is a significant indicator for evaluating and predicting the efficacy of online

learning systems as well as learners' intention to utilise an online learning system (Keržič, 2019).

In addition, previous studies have proven that past experience of learners in participating in an online learning programme may have a significant influence on one's perceived usefulness in an online learning system (Chang, Hajiyev, & Su, 2017; Abdullah, Ward, & Ahmed, 2016). Lin, Chen and Fang (2010) concluded that perceived usefulness is described as the extent to which users experience in ways that online learning may support them to accomplish learning objectives effectively. Furthermore, previous researchers found that perceived usefulness had the greatest impact on shaping learners' attitudes and behavioural intention to adopt online learning systems (Ritter, 2017; Wong, 2015). Martinho et al. (2018) stated that the perceived usefulness is defined as a belief of a person that the product or new technology may successfully increase the efficiency of accomplishing a given job. The more valuable users believe a certain technology to be, the more favourably they will regard systems that employ the technology (Huang, 2021).

2.2.2 Course Quality

The course quality could be determined by the judgements of learners based on the values perceived on the contents during learning processes whether it meets their expectations and needs. According to Almaiah and Alyoussef (2019), the course quality refers to the output or information generated through online learning system in which the generated information is related to a specific course that is in charge by an instructor, and the information would be used to measure the quality of course. Chivu et al. (2018) further added that the course quality is highly related to the design and content of the course. In general, the course quality is one of most essential factors that used to measure the successfulness and satisfaction of online learning towards students (Piccoli, Ahmad, & Ives, 2001). With the expanding

number of online courses available across the educational institutions and organizations, the quality of online courses remains as the primary concerns to entice the attention of online learners (Asgari et al., 2021). With that being said, the attitudes toward course quality vary among learners by taking into consideration of their diverse expectations and needs. A course quality could be evaluated based on the accuracy, relevance and richness of the content that are being delivered to the learners (Cheng, 2012). Nonetheless, the course quality could affect learner's effectiveness and progress in learning, especially when courses were conducted online (Patricia, 2020).

2.2.3 System Quality

System quality encompasses several characteristics used to measure the quality of a specific system, such as system flexibility and stability, system integration and security, responsiveness, and user friendliness (Aparicio et al., 2017). Furthermore, quality of information flowed within the system could be applied to define the outputs of an online learning system, for instance, effective and clear presentation of the useful information, systematic organization of course materials, and be kept updated (Ching & Maarof, 2021). A good system quality could enhance online learning environment of a learner in terms of flexibility, functionality and accessibility. Additionally, system quality could benefit educational institutions in facilitating student enrolment, improving educational system reputation, lowering expenses and responding quickly to changes (Almulhem, 2020). Generally, system quality is measured through the perspectives of technical and design perceived by the learners towards the learning system. With that, learners who have experienced good quality of online learning systems would have perceived enjoyable, useful and satisfied experience than other form of learning methods (Lake, 2020).

System quality could be termed as the evaluation of users of an information system derive from both the technical and design aspect (Alla, 2013). In

addition, system quality measures the quality of education system features of online learning, including features such as student portals, forum, flexibility, speed, and other collaborative features (Almaiah, Al-Khasawneh, & Althunibat, 2020). A high quality of educational system is a critical element in achieving the goals established by educational institutions, organizations or even individuals. The degree to which the ideal attributes of the information system itself present in the educational setting is referred to as system quality (Mulhem & Wang, 2020). Moreover, the most important variables for defining quality in virtual learning systems, for example, include technological infrastructure, ease of use of the system, technical support, and instructors' expertise in utilizing the system (Mirjalili, 2021). Besides, a past researcher argued that the system quality of online learning in higher education institutions are affected by the content, management structure, overall presentation as well as outputs (Salehi, Fazlollahi, & Khoshgoftar, 2019).

2.2.4 Instructor

The instructor refers to the person who is responsible to transmit educational-related knowledge and information to learners according to instructor's area of expertise (Gopal, Singh, & Aggarwal, 2021). Generally, instructor plays an important role to encourage the learners to actively participate in the online classes by providing an enjoyable lecture session that could boost the learners' engagement and interaction, allowing the learners have a full grasp of understanding pertaining to the attended courses (Ramly et al., 2019). Ozgungor and Duru (2015) claimed that a good quality of instructor possesses characteristics of excellent verbal skills, expertise content knowledge, good teaching skills, passionate in teaching, as well as caring for learners and their learning progress. According to previous study, instructors are shown to be an important domain that affect one's learning experience and satisfaction, especially during online learning (She et al., 2021). Needless to say, two-way communication and feedback between

instructor and learners remains crucial and it should be done on a regular basis to avoid misunderstanding and frustrations among learners. Communication with instructors, engagement with peers, and involvement in curriculum are the examples of different types of communication among learners (Bali & Liu, 2018).

Apart from being a facilitator of learning, instructor also serves as a motivator for the learners in achieving academic goals and success. The satisfaction of learners is the result of quality and positive interactions between the instructor and the learners (Martínez-Argüelles & Batalla-Busquets, 2016). The level of guidance provided by the instructor to learners will be taken into account in measuring their satisfaction (Ramly et al., 2019). It has been shown that instructor is an important factor in determining the learning outcomes of learners (Baber, 2020). As a matter of fact, instructor must also provide an adequate support and administrative assistance to entice students to take an active part in online courses as well as to ensure that all learners are computer literate in the learning technology in order to operate all of the technology used to interact with the instructor, especially for distance learners (Ramly et al., 2019). However, instructor has to deal with a high number of learners deriving from different classes and backgrounds, making it challenging for them to devote additional time and efforts to monitor with all learners from each session (Shaqour, 2014).

2.2.5 Satisfaction of Online Learning Environment

The satisfaction defined as the personal's feelings and attitudes towards a specific situation. In other words, the satisfaction of online learning environment refers to the satisfaction that a learner perceived in the online learning through individual's feelings and attitudes toward learning process and fulfilment of individual desire needs (Topala & Tomozii, 2019). Despite the fact that online learning is becoming more popular and accessible during the COVID-19 global pandemic, fulfilling learners' satisfaction in that

particular learning environment is important for a healthy and successful learning process (Weerasinghe & Fernando, 2017). The concept of satisfaction in online learning environment is broad and multifaceted, involving a wide range of characteristics such as online learners' engagement in group discussion, technical assistance, feedback, communication effectiveness, instructor teaching skills, workload, and many more (Öztürk, Karamete, & Çetin, 2020; Wei & Chou, 2020).

According to Chiu et al. (2007), the key element to ensure the successfulness of the system is through user's satisfaction which is being measured through experiences, functionality and usefulness. In fact, the academic achievement and performance of learners has a direct impact on the socioeconomic growth of a country (Singh, Malik, & Singh, 2016). Environmental factors including lighting, surrounding temperature, and external noise were discovered as key predictors of learners' online learning satisfaction during the COVID-19 pandemic (Realyvásquez-Vargas et al., 2020). An increasing body of research indicates that learner's active engagement and academic success are positively related to satisfaction of learner in an online learning environment (Meyer, 2014). Narad and Abdullah (2016) asserted that the academic performance and level of satisfaction of learner influences the success or failure of educational institutions. In addition, learners' satisfaction could be measured by the effectiveness and efficiency of online learning system. The interactions with peers, instructors and involvement in extracurricular activities all play an important influence in learners' overall satisfaction. As technology goes advances, several forms of interaction activities are implemented within the online learning environment, making the satisfaction with the online learning experience begin to rise (Elshami et al., 2021).

According to a study performed by Bali and Liu (2018), it was found that online learning approach has a greater level of communication and satisfaction compared to traditional face-to-face learning approach. It also been shown that involvement is crucial to learner's learning and learner's satisfaction in the learning process, with that, learner's involvement could

enhance their satisfaction level in an online learning environment (Martin & Bolliger, 2018). Moreover, Narad and Abdullah (2016) suggested that a frequent evaluation or tests are required throughout a particular timeframe to measure academic performance of learners. Cheon et al. (2020) found that assessing learner satisfaction in online learning is an essential aspect of successfully encouraging such educational approaches for instructors, learners, as well as educational institutions. However, previous research reported that a well-developed online learning and traditional face-to-face learning does not exist a significant difference (Rienties & Toetenel, 2016). Additionally, few past studies revealed that learners are more preferred and satisfied in face-to-face learning approach (Fishman et al., 2013; Latip, Newaz, & Ramasamy, 2020).

2.3 Hypotheses Development

2.3.1 Perceived Usefulness and Satisfaction of Online Learning Environment

The perceived usefulness is one of the most important elements that are highly concerned by the learners as the higher the usefulness they have perceived, the greater the satisfaction in an online learning environment. Additionally, the perceived usefulness of the internet-based courses would have a substantial impact on learner's involvement (Lwoga, 2014). Apart from that, previous researchers have concluded that perceived usefulness has a positive association towards the learner's level of satisfaction and participation in online learning environment (Masrom, 2018; Po-An Hsieh & Wang, 2017). A study found that perceived usefulness is a fundamental measure to determine the effectiveness and acceptance of online learning systems among learners (Alsabawy, Steel, & Soar, 2016). Daneji, Ayub, and Khambari (2019) asserted that perceived usefulness has a positive influence

over learners' satisfaction in engaging with online learning systems and continuance intention.

According to Del Barrio et al. (2015), learners satisfaction is shaped and determined by their perceptions towards the usefulness of the systems, especially among users with high demand for cognition. Pappas et al. (2017) revealed that online learning environment could provide significant benefits and usefulness to learners, such as access to course materials regardless timezone or location, and a high level of flexibility, thereby increasing the performance and satisfaction of learners in this learning approach. Having said that, when individuals grasp the benefits of adopting this learning approach in particular, they are more likely to adapt it. In fact, it is reasonable to anticipate that such benefits would increase on-going usage intention as well as produce a high degree of satisfaction among learners who have had a delightful and positive experience with the online learning approach (Irma et al., 2021). Based on the above explanation, the hypothesis of the study is developed as follow:

H1: There is a positive relationship between perceived usefulness and satisfaction of online learning environment.

2.3.2 Course Quality and Satisfaction of Online Learning Environment

The learner's satisfaction in online learning environment is measured based on the quality of the participated courses. The course quality could be determined through factors such as information delivered, achieved expectations and greater overall experience perceived by an online learner (Malik, 2010). As a matter of fact, an improved and high standard course quality has been positively associated to the learners' learning process and satisfaction level (Bogle et al., 2015). In other words, the higher the quality of a course, the higher the satisfaction of learners in the participated course.

Other than that, previous researchers concluded that the quality of the course has a significant impact on satisfaction level of a student in an online learning environment than any other sort of technology used (Mtebe & Raphael, 2018). Furthermore, the course quality is greatly affected by learners' learning styles and expectations toward the course, and when the course quality fulfils learners' expectations, the learners are satisfied with the online learning system (Jenkins, 2015). The quality of course varies depending on the learner's objectives, expectations, and perspective. The flexibility of online learning environment has increased learner satisfaction, similarly to course quality, it has to refine it from traditional approach to the online approach in order to reach effectiveness and satisfaction. According to Sumi and Kabir (2021), the most essential factor that contribute to learner satisfaction and effective implementation of online learning is the quality of course. The higher the quality of the course, the better the motivation and satisfaction of the learners (Knowles et al., 2020). Based on the above explanation, the hypothesis of the study is developed as follow:

H2: There is a positive relationship between course quality and satisfaction of online learning environment.

2.3.3 System Quality and Satisfaction of Online Learning Environment

According to Dhawan (2020), system quality is a valuable component in the online learning process. Previous studies concluded that system quality is one of the dimensions that will bring a significant positive influence towards student's online learning satisfaction (Almaiah & Alismaiel, 2019; Almaiah & Man, 2016). In fact, a high quality of learning system that cater and fulfil the needs of learners in online learning will increase the satisfaction level. Aparicio et al. (2017) found that system quality has a direct impact on learner's satisfaction in online learning, particularly those features that influence learner usage of the system. Furthermore, the quality of system

has a favourable and significant influence towards students' satisfaction of online learning (Mulhem & Wang, 2020). Ghalyan and Zalpour (2019) asserted that the elements in determining the satisfaction and effectiveness of learners' online learning include four significant factors, such as quality of information, engagement in the online learning environment, stability of technological infrastructure and system, and quality of service. The user satisfaction relates to the amount of satisfaction that a learner perceives when utilizing online learning system (Ching & Maarof, 2021).

A study has further emphasized that system quality is a key component that increases or decreases the efficiency and satisfaction among learners, particularly in an online learning environment (Pham et al., 2019). According to Khan et al. (2021), the findings discovered that over 50 percent of learners perceived that online learning platforms are user friendly and allow them to access and acquire important knowledge via online learning system. A study indicated that the effectiveness of an online learning system cannot be realised until a high degree of system quality is established, attracting learners to increase their usage of the online learning system (Koh & Kan, 2020). Shahzad et al. (2021) revealed that system quality is positively related to users' satisfaction, and user satisfaction is positively related to student learning portals. Indeed, a high quality of student learning portal encourages learners' engagement in an online learning environment by allowing them to have a quick access to the course materials, classes, and effective communication with peers and faculty (Alatawi et al., 2021). Based on the above explanation, the hypothesis of the study is developed as follow:

H3: There is a positive relationship between system quality and satisfaction of online learning environment.

2.3.4 Instructor and Satisfaction of Online Learning Environment

Gopal, Singh and Aggarwal (2021) found that instructor is one of the important domains used to determine the learners' satisfaction towards online learning environment. According to Roddy et al. (2017), the successfulness of online learning implementation is highly dependent on instructor's attitudes and behaviours towards online learning. Research asserted that online learners are more likely to drop out if they dislike the instructor, the structure, or the feedback. This is because they work individually, relying almost entirely on self-motivation and self-directed learning, online learners may be more likely to quit if they do not receive immediate results (Paul & Jefferson, 2019). The availability and responsiveness of instructors has been identified as a critical predictor of online learner satisfaction (Wart et al., 2020). Having said that, the enthusiasm of the instructors is the key determination that affect online learners' satisfaction and motivation to learn. Based on a previous study, the findings have showed that instructor's knowledge and assistance are positively associated to learners' satisfaction (Diep et al., 2016).

The interactions between learners and instructor are particularly important to enhance learners' satisfaction and achieve academic success in online learning, there exists a two-way communication that allows learners to share, discuss and participate in a group activity (Kurucay & Inan, 2017). Nevertheless, instructor is closely related to satisfaction of online learning among the learners where a good instructor could positively keep the learners involved and motivated in the learning process. Besides, Kauffman (2015) reported that instructor who understand the needs of their learners improved student's satisfaction. During the COVID-19 pandemic outbreak, Baber (2021) conducted a cross country research that indicated instructor has taken the important role in enhancing learners' online learning satisfaction. A past research revealed that the satisfaction of online learners could be determined through the instructor's method of teaching, such as

explains misunderstanding, delivers relevant knowledge, offers adequate scaffolding, and enhances learners' motivation (Ramly et al., 2019). Based on the above explanation, the hypothesis of the study is developed as follow:

H4: There is a positive relationship between instructor and satisfaction of online learning environment.

2.3.5 Gender and Satisfaction of Online Learning Environment

According to Yu (2021), it was discovered that female learners will perform better when it comes to education as compared to male learners due to the personal traits and attitudes. Certainly, female learners are more likely to have a greater concentration, lower attraction, and more organized in planning academic schedules. Previous researchers have found that gender was a significant factor to determine the level of satisfaction in the adoption of online learning approach (Yekefallah et al., 2021). Salma (2019) asserted that the level of satisfaction in an online learning are differ among female and male students as a result of their attitudes and behaviours. Females practiced better self-regulation abilities than males, allowing female learners to achieve greater result in online learning, thereby increase their satisfaction in the specific settings (Alghamdi et al., 2020).

Male users were acknowledged as the majority user who used the internet, while female users were regarded as the minority user at the early stage of internet usage (Dang et al., 2016). According to a comparison study, males have more technology knowledge and abilities than their female counterparts (Nguyen & Habók, 2021). Though, female learners tend have higher awareness towards digital integration in the learning process than male learners, and males employ technology more thoroughly than females. A recent research has revealed that the gender gap in computer competencies is shrinking where now females have more favorable

technology knowledge and greater confidence in using information system technology than males (Punter, Meelissen, & Glas, 2016). Aside from that, male students are reported to experience much lower stress and exhaustion, and better psychological condition than female students during online learning settings (Mosleh et al., 2022).

Genders also had a significant impact on the intention to continue using technology. This study is based on prior research done in Malaysia by Raman et al. (2014), who discovered that female learners expected to utilise technology more than male learners. Female students who had previously participated in online classes had higher level of satisfaction with online learning (Yekefallah et al., 2021). Though the influence of gender on online learning satisfaction remains debatable, research finding revealed that there are no significant differences between genders and satisfaction of online learning environment (Harvey et al., 2017). Nistor (2013) discovered that the learning outcomes are not influenced by genders since male learners were more consistent in attitudes and female learners fared well in commitment. However, another research finding indicated that female learners were perceived more satisfaction in online learning settings compared to male learners (Martin & Bolliger, 2018). Based on the above explanation, the hypothesis of the study is developed as follow:

H5: There is a significant difference between gender towards satisfaction of online learning environment.

2.3.6 Age Group and Satisfaction of Online Learning Environment

Today's online learners are more varied in age, it is becoming clear that the variety of age groups in online education is growing. The population of engaging in an online learning environment is getting more diverse in terms of age, and it is now also made up of adults who are employed, self-directed

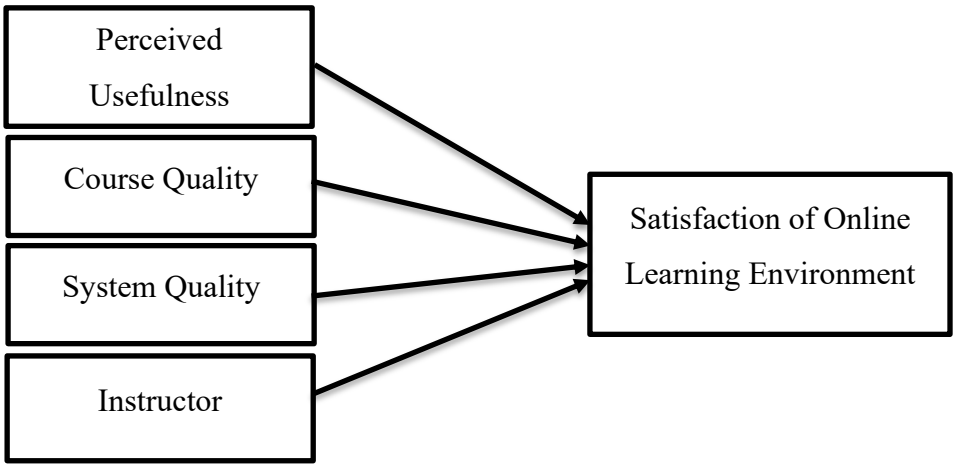
and goal-oriented. The trends were found a decade ago and this phenomenon is still happening today. According to Kumar et al. (2021), age is directly associated with the level of satisfaction in an online learning environment among all other demographic variables. Despite the scarcity of studies on relationship between age group and satisfaction, some have suggested that age is a possible determinant of learner's online learning performance. Fleming (2017) found that individuals under the age of 25 years old to have a positive attitude towards online learning than individuals that are over the age of 25. This is because the younger generation are growing up in a technologically embraced world, allowing them to have stronger understanding and knowledge pertaining to information technology.

The gender of learners was discovered in connection to satisfaction of learning, for instance, male learners that fall between the age range of 55 to 60 are more likely to perform well in their academic as well as indicate a greater degree of learning satisfaction (Yang, Hsu, & Chen, 2016). Besides, a previous study found that learners with older age tend to receive higher grades than younger age learners and appear to be more intrinsically motivated to learn the topic presented (Morin et al., 2019). Conversely, when it comes to knowledge assessments, younger age learners are more likely to perform better and are more satisfied in an online learning environment. Narimani, Zamani, and Asemi (2015) observed that age group had an influence on satisfaction of online learning, such that as one gets older in age, the degree of satisfaction rises. However, a study found that older age online learners demand a higher level of technical assistance and seek for additional support than younger age online learners (Rapanta et al., 2020). Based on the above explanation, the hypothesis of the study is developed as follow:

H6: There is a significant difference between age group towards satisfaction of online learning environment.

2.4 Proposed Theoretical / Conceptual Framework

Figure 2.2: Conceptual Framework for Factors Influencing Satisfaction of Online Learning Environment Among Malaysians



Note. Adapted from Mokhtar, M. I., Yuki, M. H., Yusuf, N. A., Yusof, N. S., & Omar, M. S. (2020). Students' satisfaction towards e-Learning system: A case study of Politeknik Tuanku Syed Sirajuddin. *International Journal of Advanced Research in Education and Society, 2*(4), 42-51.

According to the conceptual framework, this research consists of four independent variables, including perceived usefulness, course quality, system quality, and instructor. Meanwhile, the dependent variable in this research is satisfaction of online learning environment. This study adapted the conceptual framework proposed by Mokhtar et al. (2020), with the original independent variables of the research being perceived usefulness, course quality, and system quality, along with the dependent variable being student's satisfaction towards e-learning system. The previous study was conducted to examine the satisfaction level of students towards e-learning system in Polytehnic Malaysia. The study concluded that three of the independent variables are postively influencing satisfaction level of students in an e-learning system. Therefore, the conceptual framework from the previous study was adopted in this research study to examine the factors that influence satisfaction of online learning environment among Malaysians.

Instructor is a new independent variable developed specifically for this research. This is due to the reason that instructor plays a critical role in motivating and encouraging the learners in an online learning environment in order to increase their satisfaction and motivation to study (Wart et al., 2020). According to previous research, it was found that instructor is one of the important variables that enhance satisfaction and learning experience of learners because they are the ones who deliver and guide the learners (Baber, 2021; Ramly et al., 2019). An effective interaction with instructor could possibly enhance the learning experience, thereby increase the satisfaction of learners in an online learning environment. However, a few research has discovered that instructor have no influence on learners' satisfaction in online learning environment (She et al., 2021; Gray & DiLoreto, 2016). Henceforth, instructor was added as a new independent variable in this research to examine the significant relationship towards satisfaction of online learning environment among Malaysians.

2.5 Conclusion

This chapter reviewed and discussed the literature review of past research findings that are linked to factors influencing satisfaction of online learning environment among Malaysians. The proposed conceptual framework and developed hypotheses were identified based on the journal articles and past research findings. The next chapter will go through the research methodology applied in this research, such as data collection methods, questionnaire designing, data analysis methods, and so forth.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter will cover the research methodology and explain how it applies in this research study to acquire the relevant information. The chapter covered several discussion areas include research design, sampling design, data collection methods, research measurement, construct measurement as well as proposed data analysis tools.

3.1 Research Design

A quantitative approach was used in this research to perform the investigation and analyse the satisfaction of online learning environment among learners in Malaysia. A quantitative approach could be used to quantify and analyse the variables numerically and mathematically through specific statistical techniques to obtain the results and answer the research questions (Apuke, 2017). In general, quantitative method refers to the first-hand information obtained by the researchers from the respondents to represent a specific research study. A quantitative study is a technique of comprehending models that employ empirical research, computer methods, or traditional mathematical methods (Zikmund et al., 2013). Besides, quantitative research aims to develop and test numerical models, hypotheses, and theories that are relevant to the subject. With that said, this approach enables the researcher to collect accurate data from the large population in an effective and efficient manner.

The primary target of this research is Malaysians who have the experience in online learning environment. This research collects data from the targeted respondents by distributing online questionnaires via Google Form. Exploratory research is defined as research undertaken to study more about a particular topic that is not clearly

defined in order to have a greater prospect and knowledge of the current situation. Typically, a researcher begins with a broad concept and utilises the research to identify issues that might be used as a reference for future research. Therefore, this research was adopted an exploratory research approach with the aim to examine the factors that influence the satisfaction of online learning environment among Malaysians.

3.2 Sampling Design

3.2.1 Target Population

The entire group of people, events, or things of interest that the researcher desires to explore is referred to as the population (Sekaran & Bougie, 2016). The target population of this research was primarily focus on Malaysians aged between 18 and above who have participated in or presently participating in online learning. This is due to the fact that they would have had perceived different levels of satisfaction with the involvement of online learning in their learning environment or daily life. Furthermore, because of their diverse traits and backgrounds, this group of people may have varying viewpoints and feelings about the satisfaction they derive from learning using online platforms.

3.2.2 Sample Size and Sampling Location

The targeted respondents are drawn from the large population to represent the real population for this research. Delice (2010) proposed that a sample size of more than 250 respondents is adequate for statistical data analysis and increases the reliability and accuracy rate of the findings. An adequate size of random sample is needed to avoid sampling biases or errors in generalizing a random sample. Taherdoost (2016) also stated that the larger

the sample size, the lesser the probability that findings will be biased. Hence, a minimum sample size of 280 respondents is targeted to be the representative for this research in order to provide useful data to achieve the objectives of research.

The sampling location could be defined as the location where this research is being conducted. However, there is no specified location selected for this research as long as the targeted respondents have experienced online learning in Malaysia. Also, the questionnaires will be distributing to the targeted respondents virtually via Google Form. This is because the targeted respondents would be difficult to reach physically during the global pandemic COVID-19 outbreak in Malaysia. By distributing online questionnaire, it is relatively easier for the targeted respondents from different states in Malaysia to access to the questionnaire where they could fill up the questionnaire through any available electronic devices.

3.2.3 Sampling Technique

Sharma (2017) stated sampling is a technique used in selecting a small number of group of individuals to represent as data source for researching or experimentation. The non-probability sampling technique consists of several different methods such as convenience sampling, self-selection sampling, snowball sampling, quota sampling and purposive sampling. The **convenience sampling** of non-probability sampling technique was chosen as the sampling technique for this research because the respondents are often easily and readily to obtain and available. The convenience sampling is a sort of the specific types of non-probability sampling technique in which the information is collected from the any individuals of the population who are accessible and convenient to contribute to the research. Aside from that, **snowball sampling** is a sort of non-probability technique which also known as chain-referral sampling, was chosen in this research where the

participated members invite the new members to take part in the questionnaire (Naderifar, Goli, & Ghaljaei, 2017).

The global pandemic COVID-19 outbreak in Malaysia has restricted people's movement, making it challenging for researcher to reach out to targeted respondents on face-to-face basis. As a result, this research has to accommodate to the current social norm by distributing online questionnaires randomly to the targeted respondents via Google Form. The Google Form could assist to help researcher to receive responses from targeted respondents more efficiently and minimize data entry errors. However, collecting data via Google Form may restrict the researcher's ability to interact with respondents for further explanation and clarification on the enquiries regarding the questionnaire which may affect the quality of the data collected.

3.3 Data Collection Method

Data collection is defined as the process of acquiring and computing information about the interested variables through a systematic method that enables the researcher to answer the specific research questions, hypotheses testing and assess the final results (Kabir, 2016). Generally, data collection method could be classified into two groups, including primary data and secondary data for a specific research study. Hence, primary data will be adopted in this research.

3.3.1 Primary Data

The term "primary data" refers to first-hand information collected from the general population for the purpose of addressing a specific research problem through various procedures and methodologies that is appropriate and relevant to the research problem (Hox & Boeije, 2005). Furthermore,

primary data could be acquired through several approaches such as surveys, interviews, experiments, and so forth. The researcher could collect precise data from the large population by employing primary data as the data collecting approach for this investigation. Hence, the primary data for this study will be collected by digitally distributing questionnaires to the targeted respondents who have had prior experience with online learning in Malaysia through Google Form.

3.4 Pilot Test

A pilot test is a research rehearsal in which a small number of respondents are being chosen to participate in a pre-test prior to conducting the research. In general, the pilot test is normally undertaken after the questionnaire has been finalized from other sources and before it is distributed to large-scale audiences (In, 2017). This allows researchers to discover faults, enhance quality and minimize pitfalls such as confusing statements, ambiguous questions and poorly phrased questions, resulting in an increased accuracy and reliability of the questionnaire for this research study (Zikmund et al., 2013). Moore et al. (2011) suggested that a minimum of 12 sets of samples are sufficient to perform the pilot test by taking into the consideration of the time and financial constraints. Therefore, 30 sets of questionnaires were distributed to Malaysians via Google Form on 5th of January 2022 (Wednesday) to perform the pilot test. The IBM Statistical Package for the Social Sciences ("SPSS") Version 26 will be used to analyse the collected data from the questionnaires. The pilot test results obtained from 30 respondents is showed in the table below:-

Table 3.1: Pilot Test Results

Variables	Constructs	Number of Items	Cronbach's Alpha	Reliability Level
Independent Variable(s)	Perceived Usefulness	4	0.704	Good
	Course Quality	6	0.853	Very Good
	System Quality	6	0.850	Very Good
	Instructor	6	0.866	Very Good
Dependent Variable	Satisfaction of Online Learning Environment	9	0.882	Very Good

3.5 Constructs Measurement

3.5.1 Origin and Modification of Constructs

Table 3.2: Summary of Measures Used in Present Research

Variables / Authors	Adoption of questions	Modification of questions
Perceived Usefulness (IV1) **(Lake, 2020)**	1) I believe blended e-learning system ("BELS") improves my performance.	1) Online learning system improves my performance.
	2) I believe BELS is a useful learning tool.	2) Online learning system is a useful learning tool.
	3) I believe BELS helps me accomplish my learning effectively.	3) Online learning system helps me accomplish my learning effectively.
	4) I believe BELS makes my work easier.	4) Online learning system makes my work easier.

Course Quality (IV2) **(Ali, Ramay, & Shahzad, 2010)**	1) Overall, I have valuable learning experiences from my courses.	***Fully Adopted**
	2) The assignments were relevant and useful.	
	3) Courses materials were relevant and useful.	
	4) Expectations were clearly stated either verbally or in the syllabus.	
	5) The testing and evaluation procedures were fair.	
	6) The workload was appropriate for the hours of credit.	
System Quality (IV3) **(Lake, 2020)**	1) BELS provides learners with overall control on learning activities.	1) Online learning system provides me with overall control on learning activities.
	2) Students can learn BELS anytime and anywhere.	2) Online learning system allows me to learning anytime and anywhere.
	3) BELS offers mixed media such as audio, video and content forms of course materials.	3) Online learning system offers mixed media such as audio, video and content forms of course materials.
	4) BELS provides the method of taking quizzes and assignments.	4) Online learning system provides me the method of taking quizzes and assignments.
	5) BELS display subject material in appropriate	5) Online learning system displays subject material in

	structure and understandable format.	appropriate structure and understandable format.
	6) BELS can clearly present course content.	6) Online learning system can clearly present course content.
Instructor (IV4) **(Ramly et al., 2019)**	1) The instructor makes me feel that I am a true member of the class.	Adopted
	2) I am satisfied with the availability of the instructor.	Adopted
	3) The instructor uses blended learning technology appropriately.	**3) The instructor uses online learning technology appropriately.**
	4) I understand the assignments given by the instructor.	Adopted
	5) Feedback on evaluation of tests and other assignments was given in a timely manner.	Adopted
	6) The instructor gives enough time for students to complete the given assignments.	Adopted
Satisfaction of Online Learning Environment (DV) **(Suwantarathip, 2019)**	1) The technologies used for online learning were user-friendly.	
	2) The design of the learning modules was motivating.	
	3) The application of these technologies was at a satisfactory speed.	

	4) Technical problems that occurred when I studied online were not frequent.	***Fully Adopted**
	5) The online materials were easy to follow.	
	6) The online exercises were helpful in understanding the course content.	
	7) I didn't have any difficulty managing my time for the online part of the course.	
	8) I could control the pace of my own learning in online platforms.	
	9) Online learning enabled me to revise what I learned as much as possible.	

3.5.1.1 Perceived Usefulness

The questions were adopted from Lake (2020) to examine the relationship between perceived usefulness and satisfaction of online learning environment. Based on the questionnaire of Lake (2020), there is a total of four questions in Section 2 that asked responses from participants regarding perceived usefulness in a blended e-learning system. Because the adopted questions are mostly focused on blended e-learning system, all four questions were modified to make it relevant to contribute to this research. Hence, the questions were revised to focus on online learning environment.

3.5.1.2 System Quality

A total of six questions were adopted from Lake (2020) to examine the relationship between system quality and satisfaction of online learning environment. The blended e-learning system was the primary emphasis for all of the adopted questions. As a result, the questions have been modified by altering the statement from blended e-learning system to online learning system in order to increase relevancy and applicability for this research.

3.5.1.3 Instructor

The questions were taken entirely from Ramly et al. (2019). It comprises of six questions designed to examine the relationship between instructor and satisfaction of online learning environment. However, in Question 3, the original sentence was revised from "The instructor uses blended learning technology appropriately" to "The instructor uses online learning technology appropriately". While, the other questions remained unchanged.

3.5.2 Scale of Measurement

The online questionnaire in this research was divided into three sections which include of Section A, B, and C. The demographic profiles of the targeted respondents were collected in Section A. The demographic profiles of the targeted respondents such as gender, age, ethnicity, and employment status were measured in nominal scale. Meanwhile, the education level of the targeted respondents was measured in ordinal scale.

Following by Section B includes questions relating to the independent variables of factors influencing online learning environment, including perceived usefulness, course quality, system quality and instructor. On the other hand, Section C includes questions about the dependent variable of this research study which is satisfaction of online learning environment.

Generally, the ratio scale and the Five-point Likert Scale were used for each question in Section B and C. In the questionnaire, targeted respondents are asked to select a scale from 1 to 5 to indicate their perspective about the statements. The table below demonstrated the example of Five-point Likert Scale that was used in the online questionnaire to represent the statements:-

Table 3.3 Example of Five-point Likert Scale

Likert Scale Description	Likert Scale
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

3.6 Data Analysis

The computer software program, IBM Statistical Package for the Social Sciences ("SPSS") Version 26 is used in this research to evaluate the research questions and perform the data analysis for the variables. Moreover, the results obtained from the software would be used to support the hypotheses developed in this research. This research would include several types of data analysis methods including descriptive analysis, reliability test, and inferential analysis.

3.6.1 Descriptive Analysis

Descriptive analysis refers to the process of calculating, describing and concluding the demographic variables provided by the respondents without the needs of creating any inferences (Kaliyadan & Kulkarni, 2019). Besides, it assists the researcher in summarizing data and finding its patterns because it consists of measures of central tendency, variation and asymmetry

(Gebreamlak, 2019). Additionally, the analysis serves as the foundation for any quantitative data analysis and other simple analysis such as percentage, frequency distribution, mean, standard deviation, and coefficient of variation. Generally, it provides a general information from the data provided by the targeted respondents in form of tables and graphical such as pie charts and histograms. In this research, descriptive analysis help researcher to simplify the data captured from 280 respondents by reducing a large amount of data in a more efficient way and adapting numerical approach. Therefore, descriptive analysis allows the researchers to develop a clearer and in-depth picture to the respondents' perception towards satisfaction of online learning environment among Malaysians.

3.6.2 Reliability Test

The reliability test is used to measure the validity and consistency of the variables in order to create uniformity of measure and generate accurate results for the research study (Zikmund et al., 2013). The level of reliability could be identified through Cronbach's alpha coefficient rules of thumb. A reliability test is performed in this research to assist researcher in testing the level of reliability of each independent variables and dependent variable. Certainly, Cronbach's alpha coefficient is undoubtedly one of the most often used tests employed for measuring the level of reliability for the variables. The stronger the alpha coefficient, the more reliable the variables are. The rules of thumb of Cronbach's alpha coefficient value are presented in the following table:-

Table 3.4: The rules of thumb of Cronbach's Alpha Coefficient value

Cronbach's Alpha Coefficient Value	Level of Reliability
0.9 >	Excellent
0.8 to < 0.9	Very Good
0.7 to < 0.8	Good
0.6 to < 0.7	Moderate
< 0.6	Poor

Note. From Nawi, F. A., Tambi, A. M., Samat, M. F., & Mustapha, W. M. (2020). A review on the internal consistency of a scale: The empirical example of the influence of human capital investment on Malcom Baldridge Quality Principles in TVET institutions. *Asian People Journal, 3*(1), 19-29.

3.6.3 Inferential Analysis

Inferential analysis is concerned with estimating population parameters and statistical hypothesis test or test of significance. The objective of inferential analysis is to analyse the information of a small sample of observations in order to draw a conclusion about the larger population. Additionally, inferential analysis is defined as a process that attempts to make judgements and estimations centred on the data collected from the targeted respondents. The aim of the inferential analysis is to determine the degree of certainty with which the independent variables are associated to the dependent variable (Omair, 2014). Pearson correlation analysis, multiple linear regression analysis, independent T-test, and one-way ANOVA were used in this research to examine the proposed hypotheses and research questions pertaining on the independent variables and dependent variable.

3.6.3.1 Pearson Correlation Coefficient Analysis

Pearson's correlation coefficient is known as a statistical test that analyses the strength and direction of a linear relationship between two variables (Ratner, 2009). Pearson's correlation coefficient is commonly used to assess the strength of linear association between two continuous variables. The results obtained through the Pearson's correlation coefficient could show a positive or negative correlation to represent the degree of association between the variables (Saunders, Lewis, & Thornhill, 2012). There was a range from positive one (+1) to negative one (-1) which show both perfect positive and negative linear relationship. As an example, the value "+1" indicates that the independent variable would have strong positive impact towards dependent variable. Conversely, the value "-1" indicates that the independent variables would have strong negative impact towards dependent variable. In this research, Pearson's correlation coefficient is used to investigate the linear relationship between independent variables including perceived usefulness, course quality, system quality, and instructor and the dependent variable, satisfaction of online learning environment. Table 3.5 shows the rule of thumb of Pearson's correlation coefficient.

Table 3.5: The rules of thumb of Pearson's Correlation Coefficient

Size of Correlation	Interpretation
± 0.90 to 1.00	Very high positive (negative) correlation
± 0.70 to 0.90	High positive (negative) correlation
± 0.50 to 0.70	Moderate positive (negative) correlation
± 0.30 to 0.50	Low positive (negative) correlation
± 0.00 to 0.30	Negligible correlation

Note. From Mukaka, M. M. (2012). Statistic corner: A guide to appropriate use of Correlation coefficient in medical research. *Malawi Medical Journal, 24*(3), 69-71.

3.6.3.2 Multiple Linear Regression Analysis

Multiple linear regression is a model of regression that consists of one dependent variable and two or more independent variables. The purpose is to investigate the connection between a single dependent variable with two or more independent variables (Zikmund et al., 2013). By using this analysis, it allows the researcher to find out whether the relationship between independent variables (X1;X2;X3; and X4) and dependent variable (Y) is positive or negative, as well as to forecast the value of the dependent variable provided if the independent variable value is increased or decreased. Multiple linear regression analysis is used in this research to investigate the relationship between independent variables and dependent variable, which are perceived usefulness (X1), course quality (X2), system quality (X3), and instructor (X4) that influence the satisfaction of online learning environment (Y). The general equation for multiple linear regression model is formulated as below:

$$\boxed{Y = b0 + b1X1 + b2X2 + b3X3 + b4X4 + e}$$

Where ***Y*** represents Satisfaction of Online Learning Environment

X1 represents Perceived Usefulness;

X2 represents Course Quality;

X3 represents System Quality; and

X4 represents Instructor

b0 = intercept; ***b1, b2, b3*** and ***b4*** = slope of coefficient;

e = an error term

Accept H1 if p-value is less than 0.05 ($p < 0.05$). Otherwise, reject H1 if p-value is greater than 0.05 ($p > 0.05$).

3.6.3.3 Independent T-test

The independent T-test is a statistical analysis that measures the means of two independent groups to discover whether there exists a statistical evidence that the associated population means differ significantly (Zikmund et al., 2013). It is utilised when there are two unrelated samples and wished to check if there are any difference between the means of the two separate populations from which the samples were drawn. The independent T-test is used to examine the respondents' gender because gender has two groups which include "male" and "female". Hence, independent T-test is employed to measure whether satisfaction of online learning environment differed based on gender.

3.6.3.4 One-way ANOVA

One-way ANOVA is a type of statistical analysis that is used to examine the significant difference between two or more independent groups (Kim, 2017). In other words, it allows to make comparison of the means of more than two independent groups to determine whether the samples are derived from the same population and the degree of significant difference between the means of the independent groups. One-way ANOVA would be used to measure the significant difference between demographic profile of the respondents such as age group on satisfaction of online learning environment because age group have more than two independent groups.

3.7 Conclusion

In conclusion, Chapter 3 covered the research methodology adopted in this research study. The Cronbach's alpha reliability analysis was adopted to obtain a greater reliability results for this research. The hypotheses developed in this research were also tested using Pearson's correlation coefficient, multiple linear regression analysis, independent t-test analysis, and one-way ANOVA. The analysed data and findings generated from the SPSS software will be discussed further in Chapter 4.

CHAPTER 4: RESEARCH RESULTS

4.0 Introduction

In Chapter 4, the data collected from 280 sets of questionnaires were interpreted through SPSS software Version 26. The interpretation of the results on the demographic profile of respondents, scale measurement and inferential analysis will be discussed further in this chapter comprehensively.

4.1 Descriptive Analysis

In this section, the researcher will analyse and summarise the demographic profile of respondents, which includes gender, age, ethnicity, education level, employment status, types of online learning experience, and frequency of joining an online learning programme. The data was interpreted by using descriptive analysis and the data was collected from the 280 respondents in the **Section A** of the questionnaire. The data are presented through tables and charts generated from SPSS software.

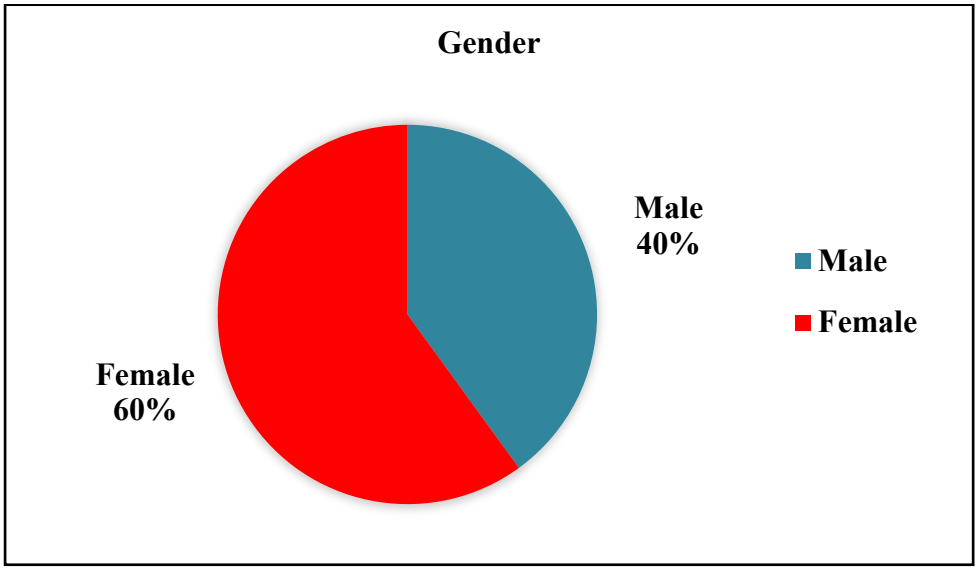
4.1.1 Demographic Profile of Respondents

4.1.1.1 Gender

Table 4.1: Gender

Gender	Frequency	Percentage (%)
Male	112	40
Female	168	60

Figure 4.1: Gender



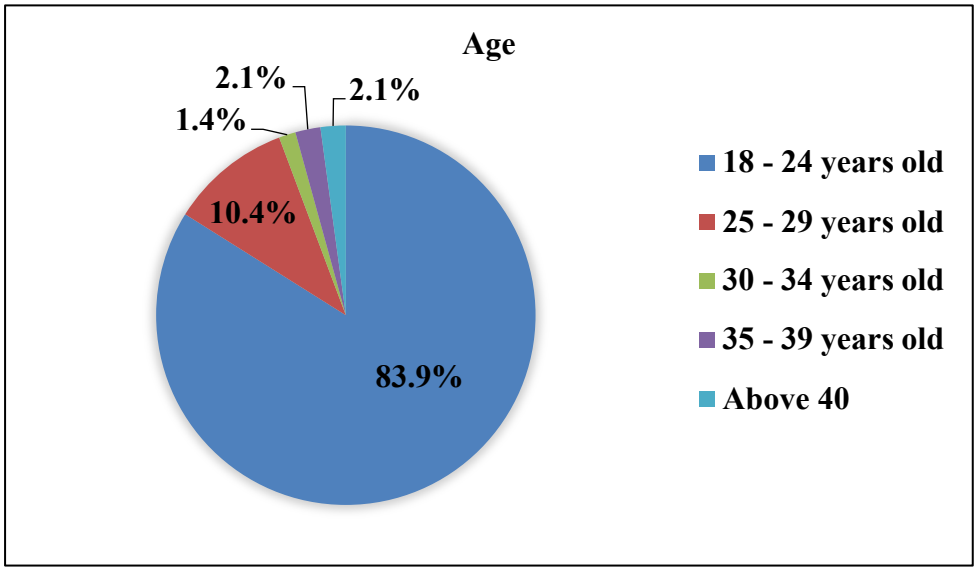
According to the findings shown in Table 4.1 and Figure 4.1, there is a total of 280 respondents took part in the survey, with female respondents accounted for 168 (60%) and male respondents accounted for 112 (40%).

4.1.1.2 Age

Table 4.2: Age

Age	Frequency	Percentage (%)
18 – 24 years old	235	83.9%
25 – 29 years old	29	10.4%
30 – 34 years old	4	1.4%
35 – 39 years old	6	2.1%
Above 40	6	2.1%

Figure 4.2: Age



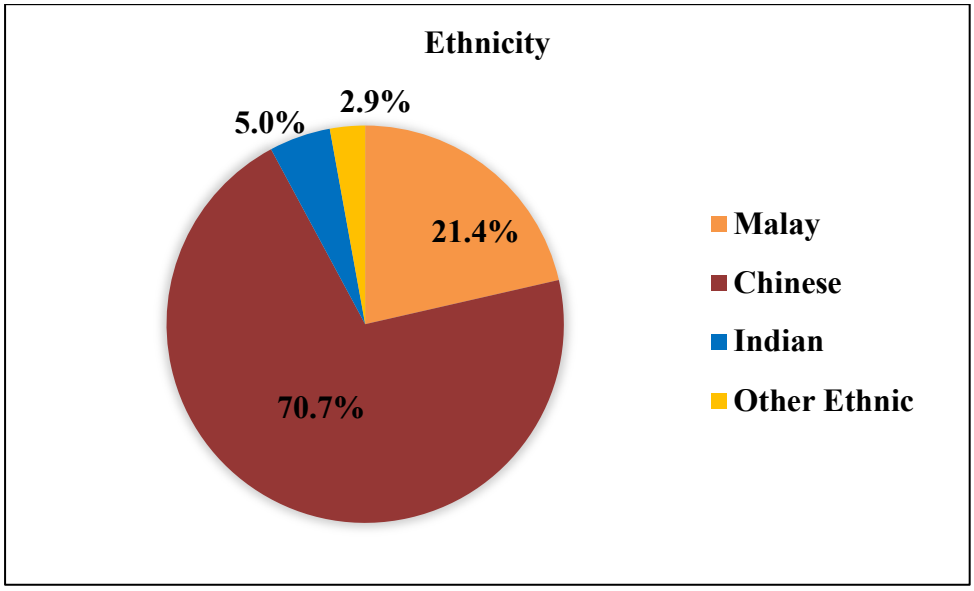
Based on the findings above, the age group of 18 – 24 years old contributed the most to this research which accounted for 235 (83.9%), followed by the age group of 25 – 29 years old accounted for 29 (10.4%), both the age groups of 35 – 39 years old and above 40 are accounted for 6 (2.1%), and only 4 (1.4%) respondents are between 30 – 34 years old.

4.1.1.3 Ethnicity

Table 4.3: Ethnicity

Ethnicity	Frequency	Percentage (%)
Malay	60	21.4
Chinese	198	70.7
Indian	14	5.0
Other Ethnic	8	2.9

Figure 4.3: Ethnicity



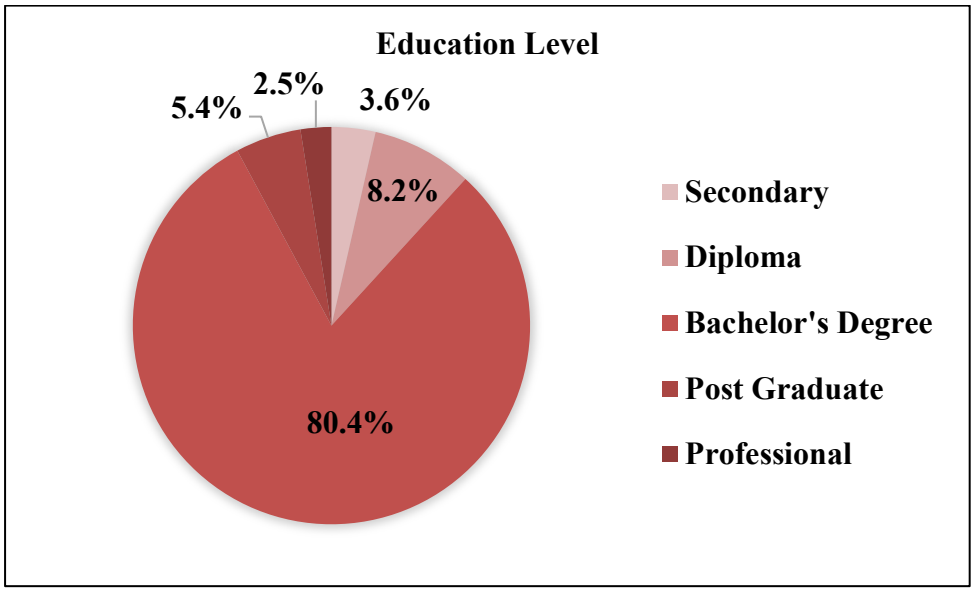
The total number of targeted respondents in this research is 280, with Chinese ethnicity contributing for 198 (70.7%) which made Chinese as the majority ethnicity to participate in this survey. Apart from that, there are 60 (21.4%) respondents are Malay, followed by 14 (5%) respondents are Indian and 8 (2.9%) respondents are from other ethnicity groups.

4.1.1.4 Education Level

Table 4.4: Education Level

Education Level	Frequency	Percentage (%)
Secondary	10	3.6
Diploma	23	8.2
Bachelor's Degree	225	80.4
Postgraduate	15	5.4
Professional	7	2.5

Figure 4.4: Education Level



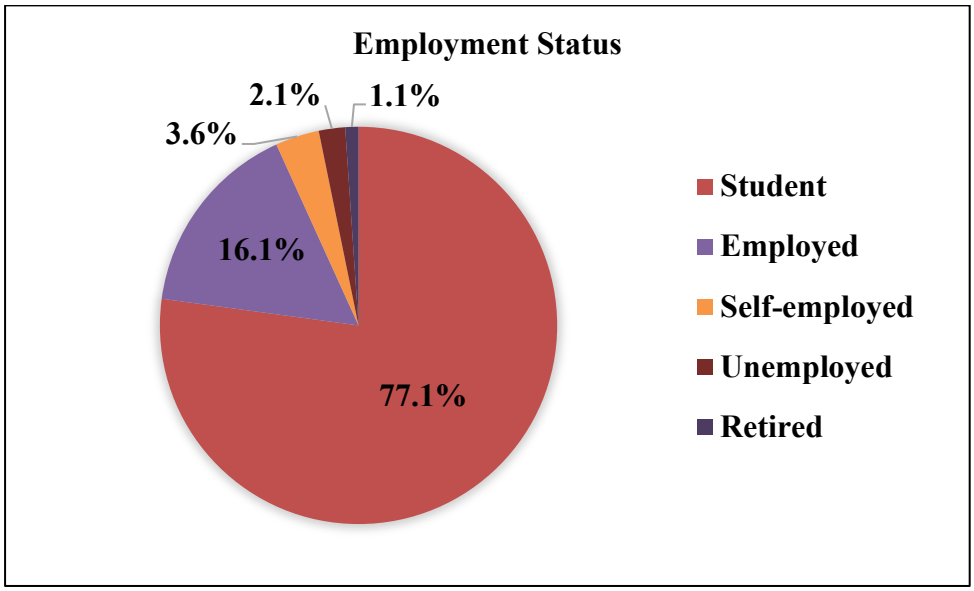
The majority of respondents (225 respondents; 80.4%) that participated in this research are Bachelor's Degree holders, followed by 23 respondents (8.2%) who have a Diploma and 15 respondents (5.4%) are postgraduates. Besides, 10 respondents (3.6%) had completed secondary education, and 7 respondents (2.5%) possessed a professional certificate.

4.1.1.5 Employment Status

Table 4.5: Employment Status

Employment Status	Frequency	Percentage (%)
Student	216	77.1
Employed	45	16.1
Self-employed	10	3.6
Unemployed	6	2.1
Retired	3	1.1

Figure 4.5: Employment Status



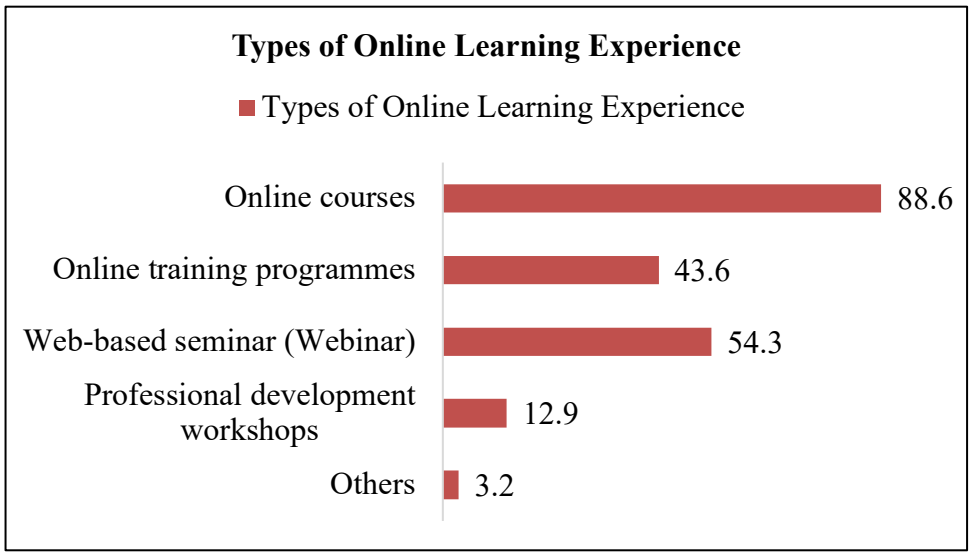
The table and figure above have displayed the employment status of respondents in which the majority of the respondents are students (216 respondents; 77.1%). Following that are 45 respondents (16.1%) being employed, 10 respondents (3.6%) are self-employed, 6 respondents (2.1%) are unemployed, and a minority of 3 respondents are retired (1.1%).

4.1.1.6 Types of Online Learning Experience

Table 4.6: Types of Online Learning Experience

Types of Online Learning Experience	Frequency	Percentage (%)
Online courses (e.g. University courses, Accredited courses, Certification courses, etc.)	248	88.6
Online training programmes (e.g. Employees training, Technical skills development training, Mandatory training, etc.)	122	43.6
Web-based seminar (Webinar) (e.g. Live sharing sessions relating to financial planning, real estate management, personal growth and development, fashion, etc.)	152	54.3
Professional development workshops (e.g. Continuing professional development (CPD))	36	12.9
Others	9	3.2

Figure 4.6: Types of Online Learning Experience



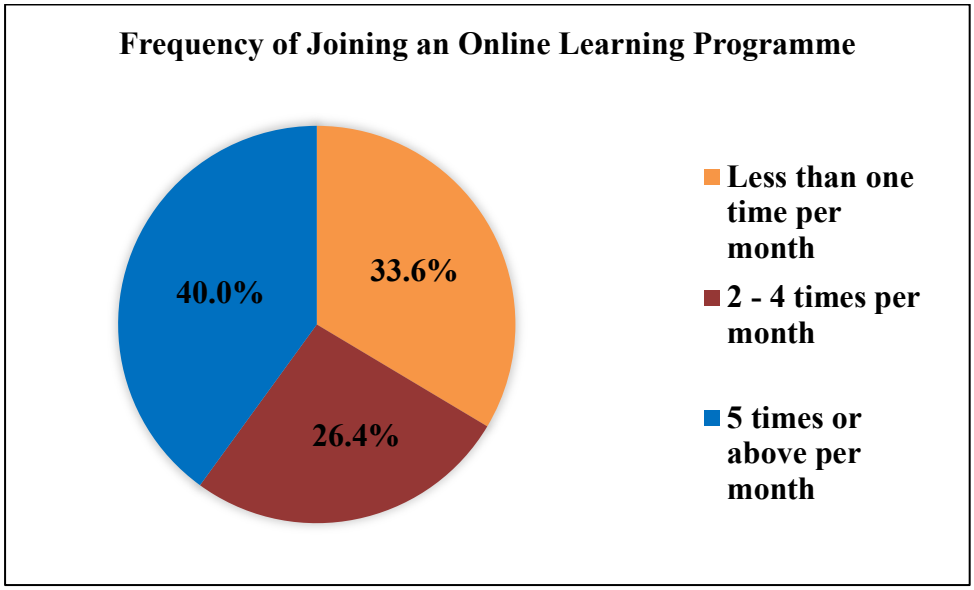
According to the findings, a total of 280 respondents have experienced in an online learning programme, with majority of them (248 respondents; 88.6%) have participated an online course, followed by 152 respondents (54.3%) have joined in web-based seminar (Webinar), 122 respondents (43.6%) have experienced online training programmes. Besides, only a small proportion of the 280 respondents have participated in professional development workshops (36 respondents; 12.9%) and other online learning programmes (9 respondents; 3.2%).

4.1.1.7 Frequency of Joining an Online Learning Programme

Table 4.7: Frequency of Joining an Online Learning Programme

Frequency of Joining an Online Learning Programme	Frequency	Percentage (%)
Less than one time per month	94	33.6
2 – 4 times per month	74	26.4
5 times or above per month	112	40.0

Figure 4.7: Frequency of Joining an Online Learning Programme



Based on the findings listed above, most of the respondents (112 respondents; 40%) are participate in an online learning programme regularly up to 5 times or above every month, while 94 of the respondents (33.6%) participate in an online learning programme less than once every month and the remaining 74 of the respondents (26.4%) are participate in an online learning programme 2 to 4 times every month.

4.2 Scale of Measurement

4.2.1 Reliability Test

The reliability test is aimed to measure the accuracy and stability of the data through 280 sets of data collected from respondents by using Cronbach's Alpha Reliability Analysis to examine each of the construct along with the Rules of Thumb. The results of reliability test will be summarized and discussed further in the following table.

Table 4.8: Cronbach's Alpha Reliability Analysis

Variables	Constructs	Number of Items	Cronbach's Alpha	Reliability Level
Independent Variable(s)	Perceived Usefulness	4	0.827	Very Good
	Course Quality	6	0.825	Very Good
	System Quality	6	0.835	Very Good
	Instructor	6	0.882	Very Good
Dependent Variable	Satisfaction of Online Learning Environment	9	0.876	Very Good

Based on the findings as listed in Table 4.8, there are two constructors have scored the greatest in Cronbach's alpha coefficient which are **Instructor** and **Satisfaction of Online Learning Environment** with 0.882 and 0.876 respectively. In addition, **System Quality** is shown to have 0.835, while **Perceived Usefulness** is shown to have 0.827. However, **Course Quality** is the constructor that scored the lowest in Cronbach's alpha coefficient among the other constructs which comprised of 0.825. In sum, all of these constructs have achieved satisfactory internal consistency accuracy (≥ 0.7) and have a "Very Good" strength of association (0.8 to < 0.9) in accordance with the Rule of Thumb as stated in Table 3.4. Hence, all statements used in this research are measured and proven to be reliable and accurate.

4.3 Inferential Analysis

4.3.1 Pearson Correlation Coefficient Analysis

Table 4.9 Pearson Correlation Coefficient

		Satisfaction of Online Learning Environment (DV)
Perceived Usefulness (IV1)	Pearson Correlation	.666**
	Sig. (2-tailed)	.000
Course Quality (IV2)	Pearson Correlation	.656**
	Sig. (2-tailed)	.000
System Quality (IV3)	Pearson Correlation	.695**
	Sig. (2-tailed)	.000
Instructor (IV4)	Pearson Correlation	.683**
	Sig. (2-tailed)	.000
Satisfaction of Online Learning Environment (DV)	Pearson Correlation	1
	Sig. (2-tailed)	

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

According to the findings above, all the independent variables (IV1; IV2; IV3; and IV4) are shown to have a significant impact over the dependent variable (DV) at p-values of less than 0.05 ($p < 0.05$). In reference to the Rule of Thumb of Pearson's correlation coefficient as stated in Table 3.5, the results in Table 4.9 have revealed that there is a moderate positive correlation between satisfaction of online learning environment and other four independent variables, including perceived usefulness (0.666), course quality (0.656), system quality (0.695), and instructor (0.683).

4.3.2 Multiple Linear Regression Analysis

Table 4.10 Multiple Regression (Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.779[a]	.607	.601	.40067	.607	106.119	4	275	.000

a. Predictors: (Constant), Instructor, Perceived Usefulness, Course Quality, System Quality

The model summary as shown in the table above provides statistical information on the regression model's ability to describe the overall variance of dependent variable and the strength of each of the predictor variables. The Adjusted R^2 in this multiple regression model is shown to have 0.601 which indicated that 60.1% of variation in the satisfaction of online learning environment could be estimated from the four different predictor variables such as instructor, perceived usefulness, course quality and system quality. Besides, the remaining 39.9% of variation in the satisfaction of online learning environment could be explained by the other predictors variables that are not included in the regression model.

Table 4.11 Multiple Regression (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.146	4	17.036	106.119	.000[b]
	Residual	44.148	275	.161		
	Total	112.294	279			

a. Dependent Variable: Satisfaction of Online Learning Environment

b. Predictors: (Constant), Instructor, Perceived Usefulness, Course Quality, System Quality

According to the findings in Table 4.10 and Table 4.11, it is discovered that the F value is 106.119 indicating that a null hypothesis is rejected, while an alternative hypothesis is accepted, and it is significant at the level of 0.05 because the p-value in the finding is 0.000, which is lesser than the common acceptable alpha level of 0.05 ($p < 0.05$). As a result, this model has clarified a substantial amount of variance in the satisfaction of online learning environment by combining other constructs such as instructor, perceived usefulness, course quality, and system quality.

Table 4.12 Multiple Regression (Coefficients)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.530	.179		2.961	.003
	Perceived Usefulness	.161	.051	.186	3.145	.002
	Course Quality	.189	.056	.192	3.350	.001
	System Quality	.304	.064	.283	4.780	.000
	Instructor	.214	.054	.236	3.965	.000

a. Dependent Variable: Satisfaction of Online Learning Environment

The Coefficient table as shown in Table 4.12 includes information for developing a regression equation that describes satisfaction of online learning environment in terms of perceived usefulness, course quality, system quality and instructor. The equation is developed for this research as listed below:-

$$\boldsymbol{Y = b0 + b1X1 + b2X2 + b3X3 + b4X4 + e}$$

$$SOLE = 0.530 + 0.161(PU) + 0.189\ (CQ) + 0.304\ (SQ) + 0.214\ (I)$$

The unstandardized coefficients as illustrated in the Table 4.12 provides information that explains on the degree for each of the predictors that affect the dependent variables if the effects are held constant in other predictors. Additionally, the relationship between the dependent variable and other predictors variables could be determined through the information provided in the table above. As in Table 4.12,

there is a positive relationship between perceived usefulness (0.161), course quality (0.189), **system quality (0.304)**, and instructor (0.214) towards the satisfaction of online learning environment. This explains that whenever a single score increased in **system quality**, the score for the satisfaction of online learning environment will be increased by **0.304**.

Based on the findings, system quality is the variable with the strongest influence over the satisfaction of online learning environment because the variable has the highest unstandardized coefficient value (0.304) among the other factors. This explains that system quality is found to be the greatest factor that influence satisfaction of online learning environment the most. In short, the satisfaction of online learning environment is significantly influenced by perceived usefulness, course quality, system quality, and instructor.

Hypotheses

H1: There is a positive relationship between perceived usefulness and satisfaction of online learning environment.

The p-value for H1 is 0.002 ($p < 0.05$), which indicates statistically significance and the relationship was supported at 95% confidence level (accept H1).

H2: There is a positive relationship between course quality and satisfaction of online learning environment.

The p-value for H2 is 0.001 ($p < 0.05$), which indicates statistically significance and the relationship was supported at 95% confidence level (accept H2).

H3: There is a positive relationship between system quality and satisfaction of online learning environment.

The p-value for H3 is 0.000 ($p < 0.05$), which indicates statistically significance and the relationship was supported at 95% confidence level (accept H3).

H4: There is a positive relationship between instructor and satisfaction of online learning environment.

The p-value for H4 is 0.000 ($p < 0.05$), which indicates statistically significance and the relationship was supported at 95% confidence level (accept H4).

4.3.3 Independent T-test

Table 4.13 Group Statistics on Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction of Online Learning Environment	Male	112	4.0486	.66780	.06310
	Female	168	4.0185	.61290	.04729

Table 4.14 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Differences
Satisfaction of Online Learning Environment	Equal variances assumed	1.225	.264	.388	278	.698	.03009	.07751
	Equal variances not assumed			.382	223.768	.703	.03009	.07885

Level of significance can be chosen either 0.05 or 0.01, and in this study, 0.05 was chosen. Since significance value is 0.264 ($p > 0.05$), null hypothesis can be accepted and assume the variances are approximately equal as the standard deviation for male (0.66780) and female (0.61290) which are square root of the variants are similar. Based on the findings, $p = .264$ and that is not unlikely enough to reject the null hypothesis as stated. The t-values are 0.388 and the degree of freedom value is 278. With the degree of freedom value as 278 and a significant at the level of 0.05, the calculated t-value is larger than the table value at a significance level of 0.05. Hence, the null hypothesis that there is no difference between means may be safely rejected.

Hypothesis

H5: There is a significant difference between gender towards satisfaction of online learning environment.

The p-value for H5 is 0.264 ($p > 0.05$), which indicates insignificance difference and the relationship between gender and satisfaction of online learning environment was not supported at 95% confidence level (reject H5).

4.3.4 One-way ANOVA

4.3.4.1 Age Group

Table 4.15 One-way ANOVA on Age Group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.918	4	.729	1.834	.122
Within Groups	109.376	275	.398		
Total	112.294	279			

The findings as listed in Table 4.15 revealed that the p-value for age group ($p = .122$), which is greater than common acceptable alpha level of 0.05 ($p > 0.05$). Thus, the significant level as determined by one-way ANOVA represents that there was no statistically significant difference between the age group and satisfaction of online learning environment.

Hypothesis

H6: There is a significant difference between age group towards satisfaction of online learning environment.

The p-value for H6 is 0.122 ($p > 0.05$), which indicates insignificance difference and the relationship between age group and satisfaction of online learning environment was not supported at 95% confidence level (reject H6).

4.4 Conclusion

In sum, SPSS software was utilized to summarize the data collected from 280 respondents in this research. Several sorts of analysis methods were employed to examine the significant relationship on the variables that might influence the satisfaction of online learning environment among Malaysians. The results shows that all of the independent variables are affecting satisfaction of online learning environment. The further discussion on the findings will be discussed in the following chapter.

CHAPTER 5: DISCUSSION, RECOMMENDATIONS AND CONCLUSION

5.0 Introduction

The further discussion on the research findings will be explained thoroughly in this chapter. This chapter will provide a summary and discussion of the major findings, implications of the study, limitations of the study, and recommendations for future research. Lastly, the relationship between independent variables and dependent variable will be concluded at the end of this chapter.

5.1 Summarization and Discussions on Major Findings

Table 5.1: Summary of Results on the Hypotheses Testing

Hypotheses	Value Scored	Result
H1: There is a positive relationship between perceived usefulness and satisfaction of online learning environment.	$\beta = 0.161$ p-value = 0.002 < 0.05	Accepted
H2: There is a positive relationship between course quality and satisfaction of online learning environment.	$\beta = 0.189$ p-value = 0.001 < 0.05	Accepted
H3: There is a positive relationship between system quality and satisfaction of online learning environment.	$\beta = 0.304$ p-value = 0.000 < 0.05	Accepted
H4: There is a positive relationship between instructor and satisfaction of online learning environment.	$\beta = 0.241$ p-value = 0.000 < 0.05	Accepted

H5: There is a significant difference between gender towards satisfaction of online learning environment.	p-value = 0.264 > 0.05	Not Accepted
H6: There is a significant difference between age group towards satisfaction of online learning environment.	p-value = 0.122 > 0.05	Not Accepted

5.1.1 Perceived Usefulness

Based on the findings above, it shows a positive relationship between perceived usefulness and satisfaction of online learning environment. Several previous studies have supported that perceived usefulness is positively influencing satisfaction of online learning environment (Daneji, Ayub, & Khambari, 2019; Masrom, 2018; Chang, Hajiyev, & Su, 2017; Abdullah, Ward, & Ahmed, 2016). As an example, learners that perceived a new technology that may assist them to accomplish a given task and enhance performance tend to have greater satisfaction in an online learning environment. The findings showed that most of the respondents are satisfied in online learning environment and realized the usefulness of applying technology in their daily life to achieve their assigned tasks effectively.

5.1.2 Course Quality

The accuracy, relevance and richness of the content that are being delivered to the learners is the key elements that used to determine the course quality. The course quality is relatively important in an online learning setting because the learners that encountered a high quality of course tend to have higher satisfaction and engagement in the online courses. Certainly, course quality is one of the key factors that could affect learner's effectiveness and progress in online learning environment (Patricia, 2020). A previous study has supported that the course quality has a direct effect on student's

satisfaction level in an online learning environment than any other sort of technology used (Mtebe & Raphael, 2018). Hence, the findings indicated that course quality has positive relationship on satisfaction of online learning environment.

5.1.3 System Quality

System quality is the most significant factor that influence satisfaction of online learning in this research, according to the findings. System quality is measured based on the features of education system in terms of accessibility, flexibility, informative, speed, communication process, and student portals (Almaiah, Al-Khasawneh, & Althunibat, 2020). Indeed, a good quality of student learning portal could enhance learner's motivation to participate in online courses since they could access to the course material easily and less frequently technical problems occurred. For instance, an online learning system that is user-friendly and provides learners with up-to-date features could improve their learning process and motivation to engage in online learning courses. It was supported by the study of Ali et al. (2018) which concluded that a high quality and user-friendly system employed in the online learning system could increase the learners' satisfaction and accomplish learning outcomes. With that, learners that exposed to smooth online learning system could effectively enhance their engagement in learning, as a result of lower frustration and exhaustion. Several past studies have concluded that system quality is positively influence towards students' satisfaction in an online learning. (Shahzad et al., 2021; Mulhem & Wang, 2020).

5.1.4 Instructor

Instructor is the most common variable that is used by many scholars in examining the satisfaction of online learning among learners. Besides, instructor is the additional variable that was added in this research, by considering the studies from other scholars highlighting on the direct relationship between instructor and satisfaction of learners in online learning (Baber, 2021; She et al., 2021). Instructor is regarded as a facilitator of learning and also a motivator for learners at the same time, they have taken the role to assist learners in achieving academic success more effectively. As a matter of fact, instructor is closely related to satisfaction of online learning among the learners where a good instructor could positively keep the learners involved and motivated in the learning process. A consistent interaction between instructor and learners could positively enhance learners' motivation and satisfaction in online learning (Ramly et al., 2019). With that, the intention of online learners in continuing to study increases as their motivation increases at the same time. Based on the findings, it was discovered that instructor has a positive relationship towards satisfaction of online learning environment, hence, this particular variable could be included in future researcher's research within same area of topic.

5.1.5 Gender

Based on the findings above, it was concluded there is no significant difference between gender and satisfaction of online learning environment. Certainly, previous research claimed that male learners tend to perform even better than female learners when it comes to technology. Nevertheless, people often establish a perception that males are more technologically-savvy than females (Dang et al., 2016). However, such perception is shrinking to a point where females are now possessing greater knowledge pertaining to information technology system than their male counterparts (Punter, Meelissen, & Glas, 2016). Nistor (2013) asserted that the learning

outcomes are not influenced by genders. Harvey et al. (2017) found that there are no differences between genders in the satisfaction of online learning. Therefore, a conclusion was formed to explain that gender may not able to determine the satisfaction of online learning environment.

5.1.6 Age Group

Because of the technological advancement, more and more learners are actively participating in online courses regardless how old are they. It is common to see that online courses comprise of learners with a variety of age groups, making the online learning environment is evolving and getting more diverse in terms of age. With more and more individuals starting to engage in the online learning environment, it was found that age is directly associated with the level of satisfaction in an online learning environment (Kumar et al., 2021). However, the findings in this research found that there is no statistically significant difference in the satisfaction of online learning environment based on age group. It was further supported by Nikou and Maslov (2021) claimed that age group does not influence the satisfaction of online learning environment.

5.2 Implications of the Study

According to the findings listed above, system quality is found to be most influential factor that affect learner's satisfaction in an online learning environment. With that, educational institutions should place a greater emphasis on developing and enhancing online learning systems as well as student learning portals. With that being said, a high quality of learning system in an educational institution is important for both instructors and learners to achieve communication effectiveness since the system the medium that used to upload course materials, conduct classes, and interacting with peers and faculty. For instance, educational institutions could

regularly update the features in the online learning system in accordance with the needs of the learners in order to increase learning effectiveness. A study indicated that a high quality of system may entice learners to increase their usage of the online learning system (Koh & Kan, 2020). Other than that, the outcomes of this research further highlighted that instructor has a significant impact towards satisfaction of online learning environment. The instructor is taking the role as a facilitator and a motivator at the same time, and this had been shown to have a direct effect on learner's satisfaction with the online courses. Having said that, the educational institutions should offer several continuous in-house training sessions to their instructors in order to increase subject matter comprehension and to be more proficient in delivering online learning content to the learners (Chung, Subramaniam, & Dass, 2020). Besides, educational institutions should standardize its online teaching and learning platform in order to minimize complications caused by learners to deal with a range of learning platforms used by different instructor.

The online learning environment is gradually becoming a new normal for most learners these days. As a result of the widespread of global pandemic COVID-19 in Malaysia, it is a game changer for many educational institutions and organizations to alter its traditional teaching approach to online teaching approach. It was a challenging task for them at the beginning stage of the implementation of online learning across educational institutions and organization due to lack of knowledge in the specific approach. Likewise, learners must also adapt to such changes in the learning environment. However, Moni et al. (2021) revealed that many online learners are experiencing mental distress, especially during the global pandemic COVID-19. The satisfaction of learners remains as the top priority in an online learning environment because the higher the satisfaction that a learner perceives, the greater the productivity and motivation to engage in the online courses. With that being said, each of individual possesses a different level of satisfaction by taking into account of their unique expectations and attitudes in online learning environment. From there, this research provides individuals an overview on the significance of satisfaction in online learning environment which serves as a motivation tool to support ones in achieving academic success. With that, individuals should regularly take the advantage of technology to engage with their

peers, instructors, and information searching in order to enhance self-motivation in online learning environment.

In conjunction with the emergence of the "Education 4.0" in Malaysia, the government should take the initiative to improve technology infrastructure in suburban and rural areas so that learners may go through an effective learning process without being disrupted. It goes without saying that accessibility to internet and connectivity is the fundamental component in an online learning, learners with weak internet connection may have a negative impact on their learning experience and progress. There are over 50 percent of students in Sabah, Malaysia have experienced poor internet connection, making online learning a challenging task for learners based in Sabah (Berita Harian, 2020). Hence, it is important for government to take their steps to improve the technology infrastructure in these suburban and rural areas in order to support online learners in accessing to the online learning system. In addition, government should provide an adequate technical support and effective training programmes to instructors, educational institutions, and training centres with the aims to enhance learners' engagement and motivation in online learning environment. For instance, there are over 21,000 Malaysian students quit from education system during COVID-19 between March 2020 to July 2021 (Lim, 2021). In fact, these learners found that the online learning environment is the primary cause of their major mental health issues and lack of enthusiasm to learn. With the drastic increase in the number of student withdrawals, government is accountable for preventing such issue from occurring and persisting in the future. Furthermore, government should provide a proper training of technical skill to both instructors and learners, especially those who are new to the online learning environment. Despite the fact that many educational institutions have begun to employ hybrid teaching and learning approaches, however, a technical skill will continue to be essential for instructors and learners in the future.

5.3 Limitations of the Study

There are several limitations are faced in this research process. Because of the global pandemic COVID-19 outbreak, the data collection methods that applied in this research are being restricted to only target respondents virtually via Google Form instead of face-to-face basis. In line with the current trends of the society, online survey has becoming more popular in collecting primary data among researchers. However, by distributing surveys through online platform, it diminishes the real-time communication and clarification with the targeted respondents regarding their queries. In that situation, online surveys may stimulate response falsification where respondents would randomly choose the statement to represent their opinion, which may affect the accuracy and reliability of the findings. With that, the responses provided by the respondents may all be true, but the data will be erroneous and misleading for the purpose of data analysis.

Other than that, time constraints in conducting the research are another drawback for this research. In fact, time is a critical aspect in the development of high-quality research. Due to the time constraints, the sample size for this research was reduced to a bare minimum that is sufficient for conducting a research in order to achieve the validity, reliability and objectives of the research within a short period of timeframe. In analysing the factors that influence satisfaction of online learning environment, a small sample size may present different statistical analysis findings than a large sample size. To present an accurate relationship between independent variables and dependent variable, a smaller sample size may be affecting the research study in a way of accuracy and reliability. Therefore, high-quality research should dedicate a longer time frame and more effort to target a larger sample size that could adequately reflect the population as a whole, while also contributing to more accurate findings.

Following that, it was discovered that the demographic profile of the targeted respondents was imbalanced. Limited respondents from varied background were targeted as the majority respondents participated in this research survey were students which accounted for 77.1%. The survey was distributed through the social

media, with the expectation of receiving responses from the similar social group. By receiving responses from similar social background may possibly affect the accuracy of the research findings. Besides, the fact that survey questions are only available in English may create limitation to some other respondents. This is because Malaysia being a multi-racial country which consists of Malay, Chinese, Indian and other races speaking different mother tongues. The respondents who do not use English frequently may have difficulty in answering the survey questions, despite the fact that English is the second language in Malaysia. The researcher found it challenging to target some older age group of respondents as they preferred physical surveys or interviews. Hence, the responses received may not be reliable due to respondents' misinterpretation of questions.

5.4 Recommendations for Future Research

There are several recommendations for future researcher to enhance the findings on this related topic research. To address the response falsification, future researcher could include a short explanation note in each of every question, giving respondents a better grasp of the questions. Other than that, future researcher may create a real-time mini chat group that is particularly designed to answer the queries of respondents. Besides, the future researchers should dedicate a longer time in targeting larger sample sizes that are large enough to reflect the population. This is due to the reason that larger population samples sizes could provide future researcher a more accurate and reliable findings for the research, increasing precision, representativeness, and consistency.

To enhance response rates, future researchers could design a multilingual survey that consists of English, Bahasa Malaysia, and Mandarin. Though, the process of preparing and constructing survey questions might be time-consuming and challenging, however, language barriers among respondents could be overcome and eliminated. With that, respondents could answer the survey questions with greater confidence. As a consequence, respondents may have a better comprehension of the survey questions, increase the accuracy and dependability of the findings. To avoid

targeting respondents derived from similar social background, it is proposed that future researchers to apply probability sampling technique rather than non-probability sampling technique when targeting the respondents. This research applied convenience and snowball sampling of non-probability sampling techniques to target the respondents because of the inability to target a diverse group of respondents due to the COVID-19 outbreak in Malaysia. By using probability sampling technique, it allows the researchers to draw a sample from the large population by using a random sampling technique which could provide accurate and reliable statistical inferences about the population of interest. The researcher could target a wider range of respondents in a population by using a random sample technique, further increasing the significant contribution to represent the population as a whole.

In addition, it is suggested that future researcher could conduct research that examine the satisfaction of learners in a blended learning system. A blended learning system refers to the learning approach that incorporates both online and offline methods in the learning process (Medina, 2018). With Malaysia entering into COVID-19 endemic phase in April 2022, it is expected that many educational institutions and organizations will still continue to implement online learning systems, however, an integration with face-to-face learning may also take place concurrently with the online learning to reach greater effectiveness (Malay Mail, 2022; The Star, 2021). Having said that, several Malaysian educational institutions have begun to implement blended learning that allows students to attend the lecture class virtually and attend the practical and tutorial class in person. There are only a fewer number of scholars who have conducted research focusing on blended learning environment, particularly in Malaysia context. Hence, future researchers could make their move to conduct a study that relates to blended learning system in Malaysia in order to assist educational institutions to enhance its teaching approach.

5.5 Conclusion

The main objective of this research study is to examine the factors that influence satisfaction of online learning environment among Malaysians along with the significant differences among gender and age group toward satisfaction of online learning environment. According to the findings, the hypotheses H1, H2, H3 and H4 are accepted ($p < 0.05$), while H5 and H6 are rejected ($p > 0.05$). With the findings, it indicates that all the independent variables (perceived usefulness; course quality; system quality; and instructor) have a significantly influence over the dependent variable (satisfaction of online learning environment). On the other hand, H5 and H6 are rejected which concluded that gender and age group are not statistically significant difference towards satisfaction of online learning environment. Based on the findings, it was concluded that system quality is the most influential factor that affects learners' satisfaction in an online learning environment, hence, related parties in the education sectors shall emphasize more on the development of high-quality learning system such as online learning platforms and student learning portals to enhance the learners' intention to continue studying in an online learning setting, as well as enhancing their satisfaction and motivation in the learning process. In short, this research has proven that all of its independent variables could have contributed to the satisfaction of online learning environment among Malaysians, including the newly added independent variable which is instructor. Therefore, this research findings could serve as a future reference for future research on comparable topic relating to satisfaction of online learning environment.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

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MKMA25106 RESEARCH PROJECT

FINAL YEAR PROJECT (FYP)

MASTER OF BUSINESS ADMINISTRATION (BAC)

Research project title:	Factors Influencing Satisfaction of Online Learning Environment Among Malaysians
Student's name:	CHONG BOON KENG
Student's ID:	21UKM02809
Supervisor's name:	Ms Chung Chay Yoke

UNIVERSITI TUNKU ABDUL RAHMAN
Faculty of Accountancy and Management

FINAL YEAR PROJECT
Title of Topic:

Factors Influencing Satisfaction of Online Learning Environment Among Malaysians

Survey Questionnaires

Dear respondent,

I am post graduate student from Universiti Tunku Abdul Rahman (UTAR) pursuing Master of Business Administration (MBA) program. I am conducting a research project entitled "Factors Influencing Satisfaction of Online Learning Environment Among Malaysians".

The purpose of this research is to examine the factors that influence satisfaction of online learning environment among Malaysians. There are three sections in this questionnaire which are Section A, Section B and Section C. Please answer all the questions to the best of your knowledge. All responses are collected for academic research purpose and kept **private** and strictly **confidential**.

Thank you for your participation and cooperation.

Sincerely,
Chong Boon Keng (21UKM02809)
bkchong@1utar.my

Voluntary Participation

Participation in this research is completely voluntary. If you decide not to participate there will not be any negative consequences. This is an anonymous questionnaire.

By signing this form, I am attesting that I have read and understand the information above and I agree to participate this survey.

Signature:

_____

SECTION A: Demographic Profile

INSTURCTION: Please read the questions carefully and select **ONE (1)** answer for each question.

1. What is your gender?
   - ☐ Male
   - ☐ Female

2. What is your age?
   - ☐ 18-24
   - ☐ 25-29
   - ☐ 30-34
   - ☐ 35-39
   - ☐ Above 40

3. What is your ethnicity?
   - ☐ Malay
   - ☐ Chinese
   - ☐ Indian
   - ☐ Other Ethnicity

4. What is your highest education level?
   - ☐ Secondary
   - ☐ Diploma
   - ☐ Bachelor's Degree
   - ☐ Postgraduate
   - ☐ Professional

5. What is your current employment status?

☐ Student

☐ Employed

☐ Self-employed

☐ Unemployed

☐ Retired

6. What kinds of online learning have you experienced? (You may choose more than one)

   ☐ Online courses (e.g. University courses, Accredited courses, Certification courses, etc.)

   ☐ Online training programmes (e.g. Employees training, technical skills development training, mandatory training, etc.)

   ☐ Web-based seminar (Webinar) (e.g. Live sharing sessions relating to financial planning, real estate management, personal growth and development, fashion, etc.)

   ☐ Professional development workshops (e.g. Continuing professional development (CPD))

   ☐ Others

7. How frequently do you join an online learning programme?

   ☐ Less than one time per month

   ☐ 2 – 4 times per month

   ☐ 5 times or above per month

SECTION B: Factors Influencing Satisfaction of Online Learning Environment

This section is looking for your opinion regarding the factors influencing satisfaction of online learning environment. The respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5-point Likert scale response framework. Please **CIRCLE ONE (1)** number per line to indicate the extent to which you agree or disagree with the following statements. The indicators are as below:

Strongly Disagree (SD)	**Disagree (D)**	**Neutral (N)**	**Agree (A)**	**Strongly Agree (SA)**
1	2	3	4	5

Statement		**SD**	**D**	**N**	**A**	**SA**
Perceived Usefulness (PU)						
1.	Online learning system improves my performance.	1	2	3	4	5
2.	Online learning system is a useful learning tool.	1	2	3	4	5
3.	Online learning system helps me accomplish my learning effectively.	1	2	3	4	5
4.	Online learning system makes my work easier.	1	2	3	4	5
Course Quality (CQ)						
1.	Overall, I have valuable learning experiences from my courses.	1	2	3	4	5
2.	The assignments were relevant and useful.	1	2	3	4	5
3.	Courses materials were relevant and useful.	1	2	3	4	5
4.	Expectations were clearly stated either verbally or in the syllabus.	1	2	3	4	5

5.	The testing and evaluation procedures were fair.	1	2	3	4	5
6.	The workload was appropriate for the hours of credit.	1	2	3	4	5
System Quality (SQ)						
1.	Online learning system provides me with overall control on learning activities.	1	2	3	4	5
2.	Online learning system allows me to learn anytime and anywhere.	1	2	3	4	5
3.	Online learning system offers mixed media such as audio, video and content forms of course materials.	1	2	3	4	5
4.	Online learning system provides the method of taking quizzes and assignments.	1	2	3	4	5
5.	Online learning system displays subject material in appropriate structure and understandable format.	1	2	3	4	5
6.	Online learning system can clearly present course content.	1	2	3	4	5
Instructor (I)						
1.	The instructor makes me feel that I am a true member of the class.	1	2	3	4	5
2.	I am satisfied with the availability of the instructor.	1	2	3	4	5
3.	The instructor uses online learning technology appropriately.	1	2	3	4	5
4.	I understand the assignments given by the instructor.	1	2	3	4	5
5.	Feedback on evaluation of tests and other assignments was given in a timely manner.	1	2	3	4	5
6.	The instructor gives enough time for students to complete the given assignments.	1	2	3	4	5

SECTION C: Satisfaction of Online Learning Environment

This section is looking for your opinion regarding the satisfaction of online learning environment perceived by Malaysians. The respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5-point Likert scale response framework. Please **CIRCLE ONE (1)** number per line to indicate the extent to which you agree or disagree with the following statements. The indicators are as below:

Strongly Disagree (SD)	**Disagree (D)**	**Neutral (N)**	**Agree (A)**	**Strongly Agree (SA)**
1	2	3	4	5

Statement		**SD**	**D**	**N**	**A**	**SA**
Satisfaction of Online Learning Environment (S)						
1.	The technologies used for online learning were user-friendly.	1	2	3	4	5
2.	The design of the online learning modules was motivating.	1	2	3	4	5
3.	The application of these technologies was at a satisfactory speed.	1	2	3	4	5
4.	Technical problems that occurred when I studied online were not frequent.	1	2	3	4	5
5.	The online materials were easy to follow.	1	2	3	4	5
6.	The online exercises were helpful in understanding the course content.	1	2	3	4	5
7.	I didn't have any difficulty managing my time for the online part of the course.	1	2	3	4	5
8.	I could control the pace of my own learning in online learning platforms.	1	2	3	4	5
9.	Online learning enabled me to revise what I learned as much as possible.	1	2	3	4	5