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Acceptance of online distance learning (ODL) among students: Mediating role of utilitarian and hedonic value

Syed Shah Alam[1] · Mohammad Masukujjaman[1] · Maisarah Ahmad[2] · Romlah Jaffor[3]

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Abstract

Nowadays, the teaching methods are changed from offline to online primarily for the advent of the internet facility. The Industrial Revolution 4.0 ("Education 4.0") stresses offering online courses at the university level. The study aims to find out the factors influencing students' intentions to admit to online distance learning courses. In addition, the study wanted to establish the utilitarian and hedonic value construct in mediating the association between attitude and intention. Based on an intensive literature survey, an extended Technology Acceptance Model was proposed including some cognitive and technology-specific factors to test empirically. This is a quantitative study with an exploratory and descriptive scope and cross-sectional design. The information was gathered by applying the convenience sampling method from 293 Malaysian students who participated in anonymous surveys. The obtained data were analyzed using structural equation modeling applying AMOS 21 version. The study reveals that hedonic value, utilitarian value, perceived ease of use, and attitude except for perceived usefulness, affect behavioral intention to accept online distance learning courses except for perceived usefulness construct. The antecedents of utilitarian value are perceived fees, attitude, perceived usefulness, and perceived ease of use, whereas the antecedents of hedonic value are perceived fees, attitude, and perceived usefulness, except for perceived ease of use. Finally, self-efficacy affects perceived ease of use, perceived usefulness, and attitude towards joining online distance learning courses. This study's conclusions will benefit all stakeholders in the education system who are considering or have already adopted e-learning.

Keywords Adoption intention · Hedonic value · Online distance learning · Utilitarian value

✉ Syed Shah Alam
shahalam@ukm.edu.my

Extended author information available on the last page of the article

1 Introduction

Today's educational system is increasingly sophisticated and dynamic. There is a rising realization that the current system of learning delivery has to be improved and changed. People can see a big change in the education sector due to Industry 4.0 revolution. Due to easy access to the internet technology and technological advances, an increasing trend is found in distance learning compared with the traditional learning environment. This Industry 4.0 need higher qualified people. In the near future to support the requirement education sector has to train its students and make them competent to cope with Industry 4.0 (Baygin et al., 2016) which is also called Education 4.0. Under this education 4.0, learning must be possible from anywhere, anytime, and at any location as it is not limited to a certain time and place. However, the concepts, Web-based Learning (WBL), E-learning, collaborative work, distance education, Mobile Learning (M-Learning), etc. put forward become important in educational communities and higher education as standard components in many courses.

Distance learning entails learning experiences that make use of technology to increase accessibility, flexibility, connectivity, and the capacity to foster interactions among learners. Learning over the internet is referred to as "online education" (Bower, 2019; Gonzalez et al., 2020). Many people around the world who are unable to attend classes in person have found it to be an effective substitute. A wide range of industries, museums, and higher education institutions have all benefited from online learning in recent years (Panigrahi et al., 2018). As a prerequisite, participants must have access to an internet-enabled device or in a blended/hybrid style where the majority of the information is offered online, allowing students to complete projects at a time and location that is convenient for them (Allen & Seaman, 2015; Hall et al., 2020). Online education has the potential to open up higher education to previously underserved groups while also ensuring that students meet their academic objectives (Bozkurt & Sharma, 2020; Hodges et al., 2020).

The unanticipated pandemic in 2020 highlighted the benefits and drawbacks of e-learning (Qiao et al., 2021). No other choice was available, thus educators and students alike had to swiftly adopt distance education methods (Affouneh et al., 2020; Aguilera-Hermida et al., 2021; Ali, 2020; Daniel, 2020; Hodges et al., 2020). Traditional teaching methods were frequently simply "transferred" to the online classroom (Crawford et al., 2020; Hodges et al., 2020). Evidence suggests that online education during the epidemic provided benefits for students. COVID-19 students performed better than students from the prior year, according to Gonzalez et al. (2020). Gonzalez et al. (2020) looked at the results of tests that were made for both online and face-to-face modes. When students were constrained by COVID-19, both online and face-to-face scores improved significantly. As a result of the extra work required by schools and universities, as well as uncommon challenges such as a shortage of time, bad infrastructure, and inadequate digital content, students and faculty members have experienced shock and tension (Khalaf, 2020). However, if students don't use the system, the effectiveness of educational technology will be underutilized. Thus, the success of e-learning technologies depends on student interest.

The factors affecting technology use, adoption, and acceptability have gained a lot of attention. Instruction, content, motivation, connections, and mental health are crucial parameters to consider when transitioning to e-learning (Martin, 2020). During the COVID-19 epidemic, George (2020) was worried about students' feedback on remote learning and underlined the important benefits acquired by students for learning. Even if a pandemic were to occur, this study's teaching method might be used for lectures. Allo (2020) researched online learning attitudes during the COVID-19 epidemic and advocated the usage of unique media such as Voice Note. While the COVID-19 epidemic necessitated the use of online learning, his research also highlighted concerns about Internet availability, budgetary challenges, and other online learning uses. Online education (Lee et al., 2019) and m-learning (Fatima et al., 2017), as well as e-learning, were the focus of early research (Pham & Tran, 2020; Yakubu & Dasuki, 2019). Especially in Malaysia, there is a paucity of studies on the post-Covid-19 acceptability of distance learning courses. Malaysian researchers Zain et al. (2022) studied the impact of home learning-based qualitative review from parents' perspective, while a SWOT analysis on the acceptance of massive open online courses during covid 19 in Malaysia was conducted by Albelbisi et al. (2022). Looi et al. (2022) investigate the relationship between the challenges of emergency remote learning and the preference of undergraduates for e-learning during the shutdown of Malaysian Higher Education Institutions. However, Rahim et al. (2022) is identified to investigate the acceptance of distance learning in Malaysia but they applied a few factors (two contextual factors only) and ignored the cognitive factors. Thus, further empirical research is required with new model, which is vital to create a policy to make online distance learning more effective.

As a result of its widespread application, the technology acceptance model (TAM) has evolved into a theoretical framework for the usage and acceptance of online technologies (Jung, 2014). The characteristics that these models rely on are based on a variety of ideas, including those relating to motivation, PC utilization, cognitive theory, and knowledge acceptance, amongst other things (Guerrero, 2019; Jung & Lee, 2020; Kemp et al., 2019). For example, open educational resources (Jung & Lee, 2020), e-learning systems (Pham & Tran, 2020; Yakubu & Dasuki, 2019), multimedia technology (Park et al., 2019), and other house loans (for home technological educational tools) have all been studied using these models by numerous researchers. Even though TAM is widely utilized in information system research, various drawbacks have been discovered. When it comes to new products or services, TAM can have some limitations because of various constrained factors (Wu, 2011). According to (Garača, 2011), there is little utility in trying to forecast or explain the future. The explanatory power is a concern utilizing TAM, the introduction of additional factors with TAM, according to (Tarhini et al., 2017), could boost the model's explanatory power. This justification emphasizes the significance of including additional context-specific elements in the TAM model. According to the findings of this study, self-efficacy is a separate construct from perceived value, and it moderates outcomes. The research questions that guided this study are:

Q1: What is the students' perception regarding the factors influencing students' intentions to admit to online distance learning courses?

Q2: To what extent does the extended TAM validate online distance learning in the Malaysian context?

1.1 Objectives of the study

To address the above-discussed gap in the literature, the following objectives are undertaken for this study. Thus, the study aims.

(i) to analyze the factors influencing students' intentions to admit to online distance learning courses.
(ii) to determine the mediating effect of the utilitarian and hedonic value construct in the association between attitude and intention.

1.2 The rationale of the study

To improve the E-learning system which ultimately leads to a better understanding of student participation in online distance learning courses, this research will guide and assist the person who develops, implement and deliver online distance learning courses at the university. Once it will be better understood, the system designer and course curriculum developer will develop the course guide properly. This research will also provide important information that would lead to a greater understanding of course curricula revision and the student will adjust to the revised course curricula easily. Moreover, this study will also provide the factors that will influence students' intention to join online distance learning courses. A greater understanding of how students regarded their online learning transition would help policymakers and practitioners plan better-planned instruction techniques during this pandemic and prepare higher education institutions for future catastrophes (e.g., natural disasters, and pandemics). It will also enable online learning instructors and developers better integrate emergency online learning into future hybrid and/or online curricula.

The remainder of the paper is structured as follows: we address the literature review and hypothesis development in the next section. This is followed by the presentation of the research methodology, result, discussion of findings, implications, conclusions, and finally recommendations for future studies.

2 Literature review and hypothesis development

2.1 Education industry in Industrial Revolution (IR) 4.0

The fundamental paradigm has shifted due to the integration of future-oriented technologies and Internet technologies in Industry 4.0. According to (Baygin et al., 2016) by using Internet of Things (IoT) sensors, machines, devices, and people can plan to communicate with each other. Baheti and Gill (2011) opined that the process that can use to communicate is called a cyber-physical system (CPS) where

machines-to-humans and machines-machines would have the facility to interact with each other from the production to consumption process.

Besides manufacturing industrial revolution has had an impact on education, business, ICT, workforce recruitment, and others. It is necessary to change the recruitment process of talented people due to industry 4.0. Now talented are required to have some basic knowledge about technology such as organizational and procession understanding, knowledge of IT, and the ability to interact with modern devices. Likewise, it is difficult for SMEs to cope with this present industrial revolution era as they do not have skilled people to handle technologies surrounding industry 4.0. It is also clear that most SMEs are not interested to invest in present technology as they find it is losses for their business.

Malaysia is a developing nation, thus certainly will face the same issues relevant to Education 4.0 and Industry 4.0. Moreover, it is needed for the education institution in Malaysia to develop a new curriculum to support future demand in Industry 4.0. As Malaysia is a developing country, it is essential to be exposed to this matter. To cope with this new era, it is certainly required for Malaysia to make their people talented to cope with expected conditions towards Education 4.0. Malaysian Higher Education Ministry (MoHE) has developed the Malaysia Education Blueprint 2015–2025 which is known as MEB (HE) (Ministry of Education MoE). Figure 1 shows the blueprint. The purpose of this program is to accomplish Malaysia's education system in alignment with global trends.

2.2 Theoretical background

The most frequently used theories for technology adoption are Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), Davis's (1985) Technology Acceptance Model (TAM), Roger's (1983) Diffusion of Innovation (DOI), Venkatesh et al.'s. (2012), the Unified Theory of Acceptance and Use of Technology, the DeLone and McLean model of IS success and Measurement and Bailey and Pearson's (1983) analysis of computer user satisfaction. The main focuses of these models are on technological factors.

Among the other models, TAM is the most extensively used model for measuring technology in information system research. The TAM is a very much popular model

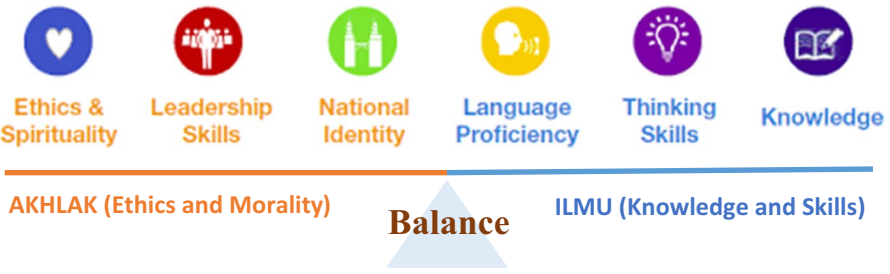

Fig. 1 Focus on redesign Malaysian higher education system, Source: Ministry of Education (MoE) Malaysia

which explains how individuals and firms adopt new technology. The TAM is developed based on Fishbein and Ajzen (1975) TRA which is rooted in social psychology. The main effort of TRA is to examine why individuals involve in intentionally intended behaviors. The TRA model has also been widely employed by researchers in several fields, whereas Davis (1985) introduced TAM during the time of the emergence of the information system. In reality, TAM is used mainly to examine computer technology usage behavior. TRA explains attitudes, subjective norms, and the behavioral intentions of individuals. The user's incentive to accept new technology can be explained by three constructs: attitude toward the system, perceived ease of use, and perceived usefulness. When it comes to attitude, attitudes are influenced by beliefs such as Perceived ease of use and perceived usefulness. On the other hand, Perceived ease of use affects perceived usefulness directly. Behavioral intention (BI) was later added to TAM by Davis (1989) as a new construct that is influenced directly by attitude and perceived usefulness. In TAM subjective norm was not added due to the very low correlation found with behavioral intention and because of "its uncertain theoretical and psychometric status" (Davis, 1989). Various researchers identified the importance of perceived usefulness and perceived ease of use in examining consumers' technological product adoption intention (Ayeh, 2015; Kim & Shin, 2015; Lunney et al., 2016; Scherer et al., 2019).

There are three principal concepts in TAM: Perceived ease of use, which refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989); perceived usefulness, which refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" and behavioral intention, "the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior". Two constructs of TAM; perceived usefulness and Perceived ease of use have been identified to be valid and reliable cognitive dimensions and CICO by many systems researchers (Burton-Jones & Hubona, 2006; King & He, 2006). They emphasized that TAM accounts for between 30 and 40% of system usage. Moreover, PU was the strongest construct in the model identified by past researchers (Burton-Jones & Hubona, 2006; Legris et al., 2003; McFarland & Hamilton, 2006), and (King & He, 2006) found PU was the strongest construct in the model. To determine the new technology acceptance among consumers TAM is considered the most preferable model (Chuah et al., 2016; T. Kim & Chiu, 2019). Numerous researchers used TAM to test empirically consumers' adoption intention of technology in different contexts, such as wearable healthcare technology (Cheung et al., 2019; Talukder et al., 2019), mobile banking (Alam et al., 2018) and e-learning (Aguilera-Hermida et al., 2021; Baber, 2021; Estriegana et al., 2019; Ibrahim et al., 2017; Maheshwari, 2021; Salloum et al., 2019; Zhou et al., 2021) (Table 1). Thus, we employed the TAM model in this study.

In TAM, attitude is presented as the descendant construct of perceived ease of use and perceived usefulness. Whereas, the extended version of TAM namely the Unified Theory of Acceptance and Use of Technology (UTAUT) completely excluded attitude as a construct. The other behavioral theory TPB used attitude but did not use it as an indirect factor in predicting behavioral intention. Ajibade (2018) and Davis and Venkatesh (1996) criticized such use of attitude. According to the

Table 1 Recent studies on E-learning

Authors (Year)	Context	Sample Size/ Methods	Product	Guiding Theory/ Dependent Variable	Significant Predictor
(Rahim et al., 2022)	Malaysia	321/ PLS-SEM	Open & distance learning	TAM/Intention to use online distance learning technology	Optimism and innovativeness, perceived ease of use (PEU), and perceived usefulness (PU)
(Al-Bashayreh et al. 2022)	Jordan	415/ SEM	Mobile learning apps	Behavioral intention to use	Perceived enjoyment, perceived convenience, self-efficacy, and perceived compatibility
(Taat & Francis, 2020)	Malaysia	230/ SPSS	E-learning	TAM/Acceptance of learning	Information, system quality, technical support, useful, usability, and lecturer's factor
(Maheshwari, 2021)	Vietnam	145/ SEM	Online learning	TAM/Online learning intention	Extrinsic factors, institutional support, perceived enjoyment, intrinsic factors, and perceived usefulness
(Zhou et al., 2021)	China	500/ PLS-SEM	Emergency remote teaching	TAM/ Behavioral intention	Media richness, social presence, PEOU, PU, attitude
(Prasetyo et al., 2021)	Philippine	360/ SEM	Medical Education eLearning platforms	UTAUT-2 /Behavioral intention	Learning value, performance expectancy (PE), hedonic motivation, instructor characteristics
(Cicha et al., 2021)	Poland	670/ PLS-SEM	Distance learning	GETAMEL/ actual use	Subjective Norms, self-efficacy (SE), PU, PEU, enjoyment, computer anxiety, attitude
(Baber, 2021)	South Korea	375/ PLS-SEM	e-learning	Extended TAM/ Behavioral intention	Instructor attitude, instructor competency, instructor interaction, student motivation, mindset, collaboration, PEU, PU, and perceived severity

Table 1 (continued)

Authors (Year)	Context	Sample Size/ Methods	Product	Guiding Theory/ Dependent Variable	Significant Predictor
(Aguilera-Hermida et al., 2021)	Mexico, Peru, Turkey, and USA	1009/ ANOVA test	Emergency online learning	TAM/ Cognitive engagement	Self-efficacy, attitude, affect, motivation, accessibility, and perceived behavioral control
(Rizun & Strzelecki, 2020)	Poland	1692/ PLS-SEM	Distance learning	GETAMEL/ Actual use	Experience, enjoyment, computer anxiety, self-efficacy, PU, PEU, attitude
(Salloum et al., 2019)	UAE	251/ PLS-SEM	e-learning	e-learning acceptance	Knowledge sharing, quality
(Estriegana et al., 2019)	Spain	223/ PLS-SEM	Virtual laboratory & practical work	Extended TAM/ Actual use	Attitude, PEU, PU, satisfaction
(Samsudeen & Mohamed, 2019)	Sri Lanka	469/ SEM	e-learning	UTAUT-2 / Use behavior	PE, effort expectancy, social influence, work-life quality, hedonic motivation, internet experience, facilitating condition

GETAMEL General Extended Technology Acceptance Model for E-Learning, *UTAUT* Unified theory of acceptance and use of technology, *TAM* Technology Acceptance Model, *SEM* Structural equation modeling

persimmons TAM by Davis and Venkatesh (1996), many studies found poor mediation effect of attitude with the relationship between PU-Intention and PEU-Intention and thereby should not use as with such relationships. However, they kept the relationship between PEU and PU with behavioral intention. Ajibade (2018) believed that behavioral expectations could, therefore, be measured in relation to the levels of compliance and not solely based on perceptions. Also, the studies (Diop et al., 2019; Hansen et al., 2018) refrained from using attitude as the descendant variable of PEU and PU in different contexts. Preferably, this paper kept the attitude factor but argues that perceive usefulness and ease of use might not influence the attitude of students in support of persimmons TAM.

2.3 Related works

A study conducted in Malaysia during Covid 19 to test the factors affecting the intention to use online distance learning technology which undertakes the technology readiness and revealed that perceived ease of use and perceived usefulness affect ODL acceptance and optimism, innovativeness moderates the same relationship mentioned earlier (Rahim et al., 2022). Another study in Malaysia found that information and system quality, technical support, usefulness and usability, and lecturer's factors influence the acceptance of e-learning (Taat & Francis, 2020). Al-Bashayreh et al. (2022) studied the acceptance or rejection factor of mobile learning apps in Jordan and found that perceived enjoyment is related to the behavioral intention to use mobile learning apps. Also, self-efficacy and perceived compatibility influence the perceived usefulness and perceived ease of use of mobile learning apps. Cicha et al. (2021) studied polish students to know the factor linked with distance learning and identified that subjective norms, self-efficacy, PU, PEU, enjoyment, computer anxiety, and attitude are the significant factor. Zhou et al. (2021) in their study in China opened up that media richness, social presence, PEOU, PU, and attitude are the predictor of emergency remote teaching. In the Philippines, Prasetyo et al. (2021) studied medical education eLearning platforms and explored that learning value, performance expectancy, hedonic motivation, and instructor characteristics are the antecedents of behavioral intention.

2.4 Proposed conceptual framework, constructs, and hypotheses

The conceptual framework developed in this study is based on Technology Acceptance Model with additional constructs of self-efficacy, perceived value, and perceived fee (Fig. 2).

2.4.1 Self-efficacy (SE)

BANDURA (1977) first introduced self-efficacy in his social cognitive theory. It is the belief of an individual about one's motivation and ability to act on certain tasks. Later (Compeau & Higgins, 1995) adapted this definition to the technology adoption context and defined it "as the assessment of one's own ability to use an information

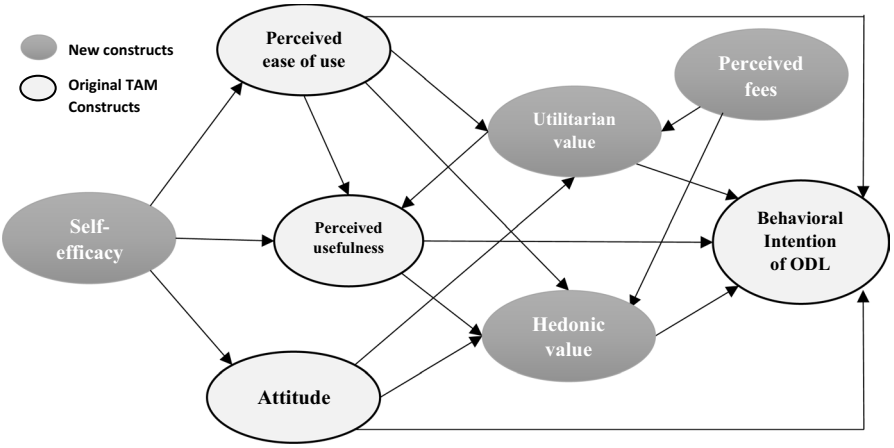

Fig. 2 Conceptual model

technology" (Pramana, 2018). Researchers (Mutahar et al., 2018; Ozturk et al., 2016; Singh & Srivastava, 2020) identified that self-efficacy has *an* impact on the perceived ease of use of the system using. Hypothetically Self-efficacy facilitates the development of intention, action, and the formulation of action plans. The findings indicated that computer self-efficacy, an individual's perception of his or her ability to use computers given a specified task, had a significant impact on the ease of use of eLearning systems (Ibrahim et al., 2017; Salloum et al., 2019). To complete an online course, you must have perceived skill as well as the usage intention to complete it. Other researchers (Chawla & Joshi, 2020; Mutahar et al., 2018; Singh & Srivastava, 2020) found a positive link between self-efficacy and perceived usefulness. Self-efficacy has been found to influence attitudes and positive links in several studies, ((Budu et al., 2018; Zhao & Shi, 2018).

H1: SE is positively related to PEU.
H2: SE is positively related to PEU.
H3: SE is positively related to PEU.

2.4.2 Perceived ease of use (PEU)

Rogers (1983) defined perceived ease of use as the extent to which consumers believe new services or goods to be preferable to substitutes. Other researchers agreed, stating that innovation might be as simple as being easy to use or understand (Zeithaml et al., 2002). When it comes to perceived ease of use and perceived usefulness, researchers (Cicha et al., 2021; Estriegana et al., 2019) found a connection between the two. Based on their findings, perceived ease of use has a major impact on perceived usefulness. Huang et al. (2020) identified that perceived ease of use influences the behavioral intention of system use. Additionally, Esteban-Millat et al. (2018) back up their findings from their study on the perceived usefulness of an online learning system in their article. The authors of (Selamat et al., 2009) claim

that when a piece of technology is simple to use, people will accept it, while complexity discourages people from using it. Likewise, Ozturk et al. (2016) assert that simplicity of use has a major effect on utilitarian value and hedonic values. Another study confirmed the association between ease of use and hedonic and utilitarian value (Yang & Lee, 2010). Ozturk et al. (2016) study result shows that perceived ease of use has a significant effect on utilitarian value.

H4: PEU is positively related to HV.
H5: PEU is positively related to UV.
H6: PEU is positively related to BI.
H7: PEU is positively related to PU.

2.4.3 Perceived usefulness (PU)

Perceived usefulness was found to be a major predictor of users' readiness to accept new technology (Chuah et al., 2016; Dutot et al., 2019; Kalantari, 2017). When consumers think that information communication technology is advantageous to their everyday life, this positive impression encourages them, and this favorable perception ultimately results in the intention to adopt information communication technology. According to the findings of the (Avcilar & Özsoy, 2015) study, Perceived usefulness has a statistically significant influence on HV.

In a variety of research settings, it was found that perceived usefulness had a considerable impact on new technology adoption behavior intention such as virtual reality (Fagan et al., 2012), mobile exergames (Broom et al., 2019; Liu & Li, 2011), e-learning (Shen & Eder, 2009) and mobile applications (Hsu & Lin, 2015; Ngai et al., 2007; Šumak et al., 2011), and Ozturk et al. (2016) study confirmed that perceived usefulness has a significant positive influence on hedonic value.

H8: PU is positively related to HV.
H9: PU is positively related to BI.

2.4.4 Attitude

A person's attitude has a substantial impact on their Behavioral intention (Ajzen, 1991). There was one study done in India by (Yadav & Pathak, 2017), and the outcomes demonstrate that attitude had a favorable impact on Behavioral intention. Numerous research has demonstrated that attitude and behavioral intention have a substantial positive link (Cicha et al., 2021; Karjaluoto & Leppäniemi, 2013). When clients have a favorable opinion of the system, the larger the propensity to employ technology (Chang & Wang, 2008). Researchers (Avcilar & Özsoy, 2015; Chen et al., 2020)found that attitudes have a large impact on the hedonic value and utilitarian value, as well as happiness. Rong-Da Liang and Lim (2011) discovered that consumer perceptions toward online food shopping influence their behavioral intentions.

H10: Attitude is positively linked to HV

H11: Attitude is positively linked to UV
H12: Attitude is positively linked to BI

2.4.5 Perceived fee (PF)

Kim et al. (2009) and Kim et al. (2007) outlined fee as the individual's perception which is a sacrifice to receive a service. As the online course would be used for personal purposes so the individual has to bear the cost of the course. So, monetary cost plays an important role in accepting online courses. To decide to adopt an online course perceived fee is considered as the major constrain for forming a positive attitude. (Cronin et al., 2000) identified perceived fees negatively affect perceived value. Seo and Lee (2021) revealed that price had a significant impact on the hedonic value and utilitarian value from the perspective of street food repurchase intention. Likewise, Researchers (Hanzaee & Ghafelehbashi, 2012; Kim & Han, 2011) study confirmed the significant association between fee and utilitarian and hedonic value.

H13: PF is negatively linked to HV
H14: PF is negatively linked to UV

2.4.6 Perceived Value (PV)

Perceived value is the function of receiving and giving. Receiving is what benefits are gained from service providers and how much cost involves in getting the offerings (Parasuraman & Grewal, 2000). Other researchers also highlighted that perceived value is the evaluation by consumers in which received and given are the two components of perceived value (Zeithaml, 1988). Perceived value can be categorized into hedonic value and utilitarian value (Babin et al., 1994).

According to (Venkatesh & Brown, 2001) utilitarian value is related to efficiency and effectiveness that gain from the use of service. (Overby & Lee, 2006) defined utilitarian value as sacrifices and functional benefits or overall judgment. Consumers are very rational and task-oriented in utilitarian values. (Hong & Tam, 2006) and (Kim et al., 2007) identified utilitarian value as one of the essential predictors of usage and adoption intention of IS as customers assess the functional benefits and sacrifices, they do. On the other hand, (Yang & Lee, 2010) argued that hedonic value is more personal and subjective. (Sweeney & Soutar, 2001) and (Kim & Han, 2009) stated that hedonic value is affective, experiential, and non-instrumental. According to (Sheth et al., 1991), clients feel hedonic value when the activity of using IS is valued for its own sake. (Turel et al., 2007) and (Venkatesh & Brown, 2001) opined that hedonic value is also another important determinant of consumer perceived IS usage context. Voss et al. (2003), Okada (2005) and Kwon and Park's (2015) studies confirmed that utilitarian value has a significant relationship with perceived usefulness.

Researchers (Hanzaee & Khonsari, 2011; Nejati & Moghaddam, 2012, 2013) stated that hedonic value and utilitarian value have a significant effect on behavioral intention. (Ozturk et al., 2016) the study found that utilitarian value and hedonic value have a significant effect on continuous intention. In 2015, Basaran and Buyukyilmaz (2015) study confirmed the association between hedonic value

and utilitarian value with behavioral intention. A recent study also confirmed that hedonic value and utilitarian value have a significant effect on BI (Yu et al., 2018).

In this research, both utilitarian value and hedonic value would be key determinants affecting acceptance of the online course. Since the online course pervade several services whose utilitarian performance serves as the primary determinant such as participating in a course online and users will achieve their personal aim by using these services.

H15: HV is positively linked to BI.
H16: UV is positively linked to PU
H17: UV is positively linked to BI

2.4.7 Mediating effect of utilitarian value (UV) and hedonic value (HV)

UV and HV were examined by Mehmood and Hanaysha (2015). They discovered that hedonic value and utilitarian value mediate BI. Kim & Yang, 2019) found that hedonic value and utilitarian value are somewhat mediated by representativeness, adjustment, and affect heuristics. Re-patronage intents were found to be mediated by human crowding and ambient harmony. According to An and Han (2020), there is a correlation between HV and social value. According to Hashmi et al. (2019), the association between online impulse buying behavior and website quality factors is mediated by utilitarian value. (Chen et al., 2020) found a mediating relationship between hedonic value and utilitarian value between attitude and behavioral intention. Based on the preceding research, we conclude that consumers' hedonic value and utilitarian value influence their attitudes and behavioral intention.

H18. There is a mediating role of UV between attitude and BI.
H19. There is a mediating role of HV between attitude and BI

3 Research methodology

3.1 Research design

This study applied a quantitative approach to assess factors affecting the behavioral intention of online distance learning applying a cross-sectional survey design (Fig. 3). To examine the respondents, data were collected online survey using Google Forms. All existing students who are taking traditional bachelor programs were asked to respond to these questions.

3.2 Procedure: Sample and data collection

The target population of this study was the total potential online distance learning course students in Malaysia. The study used a convenience sample technique to choose respondents following the study of Baber (2021). Convenience sampling

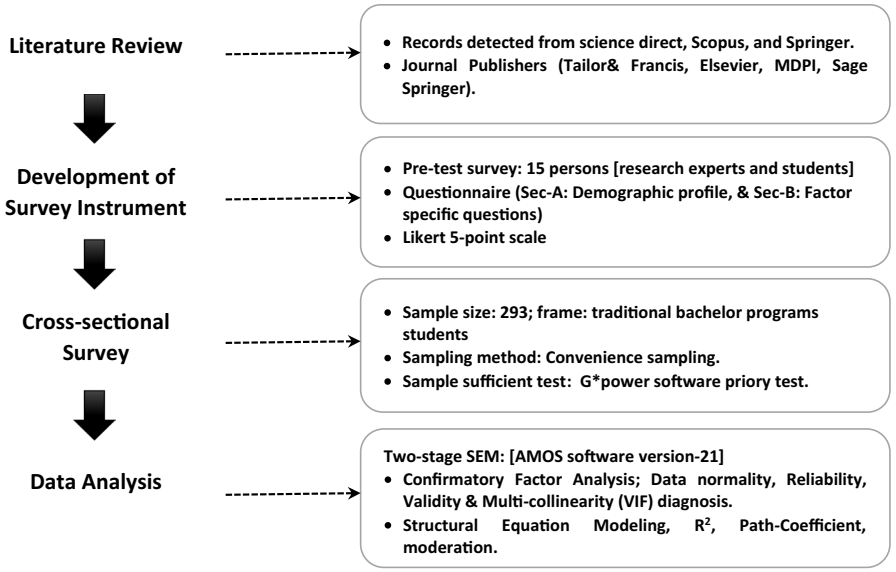

Fig. 3 Flowchart of research methodology

was considered a viable alternative due to its cheaper costs and ease of gathering required responses. Fifteen questionnaires were provided to researchers as part of the pre-test study between colleagues and research method class students, and before the final data collection, a few alterations were made based on pre-test study recommendations. The smallest sample size was determined using G*power software (Faul et al., 2009) and used to compute the total number of respondents required for the study. While (Vidaver-Cohen, 1998) advised a sample size of 153 for seven independent constructs or predictors ($f^2 = 0.15$ for effect size, 0.05 for type 1 error, and 0.20 for type 2 error), (Barclay et al., 1997) suggested a tenfold (multiplying number of indicator used by ten) sample rules. These criteria require 240 (10×24) respondents. To alleviate the possible challenges associated with small sample numbers, 350 respondents were considered using a non-probability convenience selection strategy from the universities in the Klang Valley, Malaysia (Fig. 4). Despite this, 293 samples were selected following the screening of incomplete inquiries, thereby blotting out missing data and screened-out responses.

3.3 Instruments

As an instrument of this research, a questionnaire was used. The questionnaire was designed in such a manner that it does not take more than 10 min for getting the maximum response and reduce incomplete answers. There were two parts to the question (1) demographic characteristics and (2) an acceptance-related questionnaire. The survey was given in English because all of the students who took it were studying in an international curriculum.

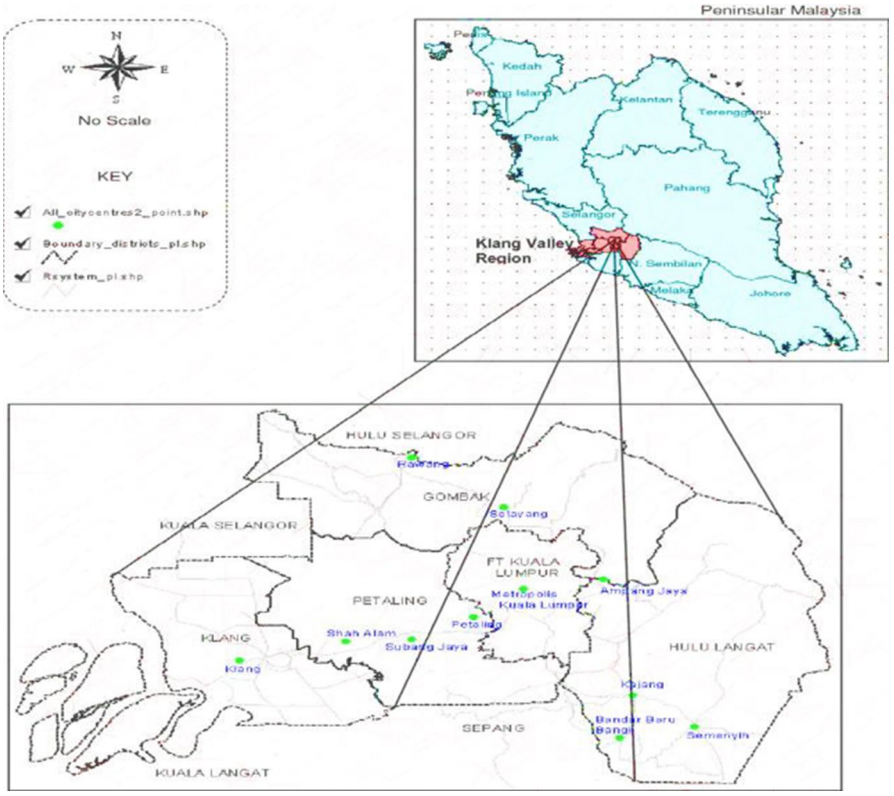

Fig. 4 Study area (Klang Valley), Source: Rashid (2009)

All the variables employed in the present investigation were evaluated with the 5 Point Likert scales, underpinned by Strongly Disagree (1) and Strongly Agree (5). The items of each variable are modified depending on the available literature and the present condition of this investigation. The items for hedonic value and utilitarian value were adapted from Ghali (2020). Constructs like behavioral intention are derived from Gansser and Reich (2021), while the perceived fees are sourced from Kim and Han (2011). The items of attitude, perceived ease of use, and perceived usefulness are adapted from Nguyen et al. (2019) study. Finally, self-efficacy was sourced from Chao (2019) (Table 2).

3.4 Data analysis method

The conceptual model was examined using empirical data processed using AMOS software version 21, SPSS 25, and MS-Excel. Construct validity, convergent validity, discriminant validity, and questionnaire reliability were the four indicators that were analyzed to determine the effectiveness of the questionnaire items to ensure the validity of the questionnaire survey and find out how effective the questionnaire

Table 2 'Cronbach's Alpha, Composite Reliability, and AVE

Constructs	Item loading	Alpha α	CR	AVE
Hedonic Value (HV)		0.884	0.841	0.639
HV1: Online distance learning (ODL) course is one that I would enjoy	0.797			
HV2: ODL course would make me feel good	0.833			
HV3: ODL course is one that I would feel interesting	0.766			
Attitude (ATT)		0.755	0.816	0.597
ATT1: I believe taking an ODL course is a good idea	0.768			
ATT2: I like the idea of distance learning online	0.779			
ATT3: ODL course is a positive idea	0.771			
Behavioral Intention (BI)		0.899	0.885	0.720
BI1: I predict that in the future, I will take an ODL course	0.822			
BI2: I intent to do an ODL course in the future	0.871			
BI3: I will recommend ODL courses to my friends and colleagues	0.851			
Perceived Fee (PF)		0.827	0.825	0.611
PF1: Compared to conventional education ODL course fee I have to pay would be high (reverse)	0.750			
PF2: Compare to conventional education, the ODL course fee I have to pay would be reasonable (reverse)	0.777			
PF3: I would be happy to pay the fee for an ODL course	0.816			
Utilitarian Value (UV)		0.853	0.847	0.649
UV1: The quality of ODL would be reliable	0.782			
UV2: ODLcourses offer good value for money	0.796			
UV3: ODL courses would be a convenient way to learn	0.837			
Perceived usefulness (PU)		0.797	0.773	0.533

Table 2 (continued)

Constructs	Item loading	Alpha α	CR	AVE
PU1: The ODL course can improve my learning efficiency	0.773			
PU2: The ODL course can enhance my learning performance	0.686			
PU3: The ODL course increases my learning output	0.728			
Perceived Ease of Use (PEU)		0.764	0.779	0.541
PEOU1: It is easy to understand the course curricula through an ODLcourse system	0.710			
PEOU2: Human interface of the ODL course is clear and easy to understand	0.746			
PEOU3: Interacting with ODL courses does not require much attention or care	0.750			
Self-efficacy (SE)		0.826	0.762	0.516
SE1: I am confident on I to become knowledgeable in attending ODL courses	0.756			
SE2: I feel confident in my ability to handle an ODL course, even though I never use it before	0.695			
SE3: I could use the online distance system correctly if I spent some time on it	0.703			

items were. Construct validity was determined through both factors loading and cross-loading of the factors. A study's convergent validity can be seen in the factor loading, construct reliability, and average variance extracted. The differences between the average variance extracted and the correlation coefficients between variables reveal discriminant validity. The reliability of the questionnaire was seen by both Cronbach's alpha coefficient and the composite reliability. Also, descriptive statistics like the mean, standard deviation, skewness, and kurtosis were used to figure out how normal the data was. The Variance Inflation Factor (VIF) was employed in the study to determine the severity of multicollinearity. This refers to the degree to which the behavior (variance) of an independent variable is modified, or inflated, by its interaction or correlation with the other independent variables.

The AMOS 21.0 software tool evaluated the hypothesized constructs' relationships. Anderson and Gerbing (1988) developed a two-stage SEM approach that included a confirmatory factor analysis (CFA) to evaluate the reliability and validity of the measurement model. The second step of the structural model tested the overall fitness and postulated links using standardized (β) and p-value regressions using AMOS software. Using a two-stage technique is justified by the need to keep the measurement models and structural parts distinct during estimating in order to avoid cross-contamination. Maximum likelihood has traditionally been used to fit all parameters at the same time. This can lead to challenges with the interpretation of latent variables because of structural model misspecification. The second benefit is that it makes it easier to pinpoint the issues with an inappropriate model. When convergence problems arise in the first step of the measurement process, it enables researchers to pinpoint problematic measurement models. If in the second step, the model does not converge, the problem is structural (Anderson & Gerbing, 1988).

4 Result

4.1 Demographic profile

Overall, a greater proportion of respondents (58.24 percent) were female, and respondents aged 15–25 years were the most notable age group in this study. Chinese made up 52.22 percent of total respondents, followed by Malays at 40.35 percent.

4.2 Reliability & validity

Table 1 lists the indexes of validity and reliability. Cronbach's alpha and composite reliability (CR) scores were used to assess each item's dependability. Each variable's Cronbach's CR was determined to be greater than 0.8 (Hair et al. 2021), and the Cronbach's alpha is greater than 0.7 (Taber, 2018) indicating good internal consistency.

The validity of the scale was evaluated in terms of both content and structure. To ensure that the scales employed in this study have good content validity, they

Table 3 Correlation of latent variables and square roots of AVE

	HV	ATT	BI	PF	UV	PU	PEU	SE
HV	**0.799**							
ATT	0.415**	**0.723**						
BI	0.747**	0.484**	**0.849**					
PF	0.666**	0.382**	0.473**	**0.782**				
UV	0.745**	0.452**	0.744**	0.549**	**0.806**			
PU	0.545**	0.423**	0.650**	0.443**	0.636**	**0.730**		
PEU	0.557**	0.439**	0.673**	0.445**	0.587**	0.595**	**0.736**	
SE	0.573**	0.341**	0.500**	0.453**	0.513**	0.449**	0.630**	**0.718**

**. Correlation is significant at the 0.01 level (2-tailed). *(In the Table, bold elements, the square root of AVE)*

Table 4 Heterotrait-Monotrait Ratio (HTMT)

	HV	ATT	BI	PF	UV	PU	PEU	SE
Hedonic Value								
Attitude	0.503							
Behavioral Intention	0.839	0.583						
Perceived Fee	0.777	0.485	0.549					
Utilitarian Value	0.827	0.561	0.848	0.652				
Perceived usefulness	0.647	0.539	0.765	0.541	0.770			
Perceived Ease of Use	0.680	0.578	0.813	0.560	0.726	0.758		
Self-efficacy	0.672	0.433	0.577	0.545	0.608	0.548	0.789	

were all developed by academics, adjusted by domestic specialists in related subjects, and then checked by a small sample pre-investigation.

Convergent and discriminant validity are both included in structural validity. There are two major indicators used to determine convergent validity among them. Table 1 shows that all item loading values are more than or equal to 0.686, and hence significant as its greater than 0.6 (Awang et al., 2015). It also shows good convergent validity, since the AVE for all scales is more than the suggested value of 0.5.

The degree to which constructs differ is referred to as the discriminant validity, and it is often assessed by comparing the AVE square root. The correlation coefficient of each latent construct is expressed as an absolute value (Fornell & Larcker, 1981). It's clear from Table 3 that the square root of AVE, which measures discriminant validity, is bigger compared to the correlation coefficient for each latent variable.

Due to its superiority over Fornell-Larcker in many conditions, the HTMT value was also assessed in this study for robustness (Henseler et al., 2015). Based on individual item association and utilizing the HTMT formula in MS Excel, the

HTMT ratio in Table 4 was generated. The result was less than 0.85/0.90, indicating that there was no concern with discriminant validity (Henseler et al., 2015). Since this study meets the criteria outlined in Table 3, the indicated reliability and validity can be confirmed as appropriate.

4.3 Testing normality, multicollinearity, and coefficient of determination

Statistical normality, multicollinearity, and construct coefficients of determination are all highlighted in Table 5. The results were good in terms of normality since the variance derived from the normality testing showed no problems. In this case, the skewness and kurtosis values were both below 3 and 10 (Table 7). (Kleinbaum et al., 1988) advocated the effective strategy of assessing the VIF (variance inflation factor) to identify whether or not the independent variables were multicollinear. As a result, the VIF ranges from 1.380 to 3.171, a value well below the value of 10. As a result, multicollinearity does not appear to be an issue in our study.

Model explanatory power is assessed using the R square, which highlights endogenous factors as determining coefficients. (Vidaver-Cohen, 1998) states that an endogenous variable's R^2 value is significant when it is greater than 0.26, while a value of up to 0.13 is considered moderate. A score below 0.13, on the other hand, is regarded as low. Table 4's R^2 values for each endogenous value are based on (Falk & Miller's, 1992) assumptions, which show that the suggested model has high explanatory power.

4.4 Common method bias (CMB) and CFA fit indices

Data from a self-report questionnaire suggests that CMB may occur in this study. (Harman, 1976) single-factor analysis methodology, which uses the factor analysis method, was used to check for common method bias. A single component accounted for around 31.3% of the variance. This reaffirmed the lack of a CMB in typical methodological practices.

The fit indices for the Confirmatory Factor Analysis and structural models are shown in Table 6. Confirmatory Factor Analysis was used to validate the

Table 5 Data normality, multicollinearity, and coefficient of determination

Construct	Mean	Standard deviation	Skewness	Kurtosis	VIF	R^2
Hedonic Value	3.406	0.839	−0.356	-0.451	3.071	0.69
Attitude	3.929	0.602	−0.482	0.519	1.380	0.38
Behavioral Intention	3.405	0.795	−0.182	−0.278	–	0.81
Perceived Fee	3.653	0.663	−0.303	0.126	1.873	
Utilitarian Value	3.338	0.814	−0.178	0.146	2.830	0.60
Perceived usefulness	3.296	0.689	0.156	−0.228	1.962	0.68
Perceived Ease of Use	3.143	0.706	−0.189	−0.301	2.228	0.59
Self-efficacy	3.231	0.749	−0.383	−0.387	1.889	–

Table 6 Results of CFA and structural model with standards

Fit indices	values for CFA	values for Structural Model	Standards with Sources	
$\chi 2$/df	2.638	2.743	<3	(Holbert & Stephenson, 2002)
IFI	0.927	0.908	>0.900	(Bentler & Bonett, 1980)
NFI	0.913	0.902	>0.900	(Bentler & Bonett, 1980)
CFI	0.926	0.907	>0.900	(Jöreskog & Sörbom, 1993)
GFI	0.928	0.917	>0.900	(Bentler & Bonett, 1980)
AGFI	0.922	0.907	>0.900	(Fornell & Larcker, 1981)
TLI	0.927	0.922	≥ 0.90	(McDonald & Ho, 2002)
SRMR	0.027	0.042	<0.080	(Bentler & Bonett, 1980)
RMSEA	0.072	0.074	<0.080	(McDonald & Ho, 2002)

measurement model, and the resulting Confirmatory Factor Analysis model had the following good fit indices: There is a root mean square error of approximation of 0.072 and goodness of fit index (GFI) of 0.928, Tucker-Lewis's index (TLI) of 0.927, IFI of 0.927, and comparative fit index (CFI) of 0.926. (All of the t-values were significant at below 5 percent).

4.5 Structural modeling

The structural model depicted in Fig. 5 is used in this study. Because the Confirmatory Factor Analysis test of the measurement model was a success, the structural model was validated to verify the proposed model's goodness of fit indices following

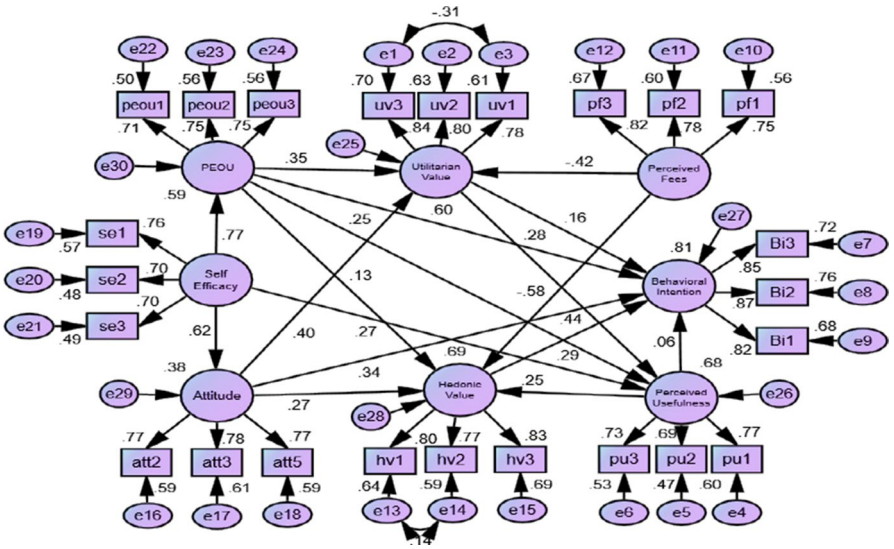

Fig. 5 Structural Model

the Confirmatory Factor Analysis test measurement model. There was a very good fit between the theoretical model and the data ($\chi 2/df = 2.743$), according to the SEM results (Table 5). According to the standard value of less than 0.08, the Root Mean Square Error Approximation (RMSEA) has achieved a value of 0.075 (Browne & Cudeck, 1992). Additionally, GFI, TLI, and TLI fit indices met the 0.9 requirements (Bagozzi & Yi, 1988).

Table 7 and Fig. 2 highlight the statistic of the path model to find the path relationship among constructs as hypothesized. The results indicated that self-efficacy influences the perceived ease of use (β = 0.769; t = 9.278), perceived usefulness (β = 0.274; t = 2.570) and ATT (β = 0.620; t = 8.156). Likewise, the AMOS output (Table 6) values specified that perceived ease of use affect utilitarian value (β = 0.351; t = 5.426), behavioral intention (β = 0.282; t = 4.168) and perceived usefulness (β = 0.250; t = 2.323) significantly except hedonic value (β = 0.126; t = 1.488) that shows insignificant. Likewise, the relationship between perceived usefulness with hedonic value (β = 0.253; t = 2.682) was found significant while behavioral intention (β = 0.059; t = 0.689) was insignificant statistically.

Additionally, attitude relates with the utilitarian value (β = 0.403; t = 6.193), hedonic value (β = 0.268; t = 4.147) and behavioral intention (β = 0.339; t = 6.143). Perceived fees found linked negatively with the hedonic value (β = -0.579; t = -9.605), utilitarian value (β = -0.420; t = 6.604) and behavioral intention (β = -0.404; t = -4.163). Similarly, hedonic value (β = 0.287; t = 5.035 influence

Table 7 Structural model and hypothesis testing result

Hypotheses	STD Beta	STD Error	*t*-Values	*P*-Values	Significance ($p < 0.05$)
H1: SE→PEU	0.769	0.103	9.278***	0.000	Accepted
H2: SE→PU	0.274	0.149	2.570**	0.010	Accepted
H3: SE→ATT	0.620	0.093	8.156***	0.000	Accepted
H4: PEU→HV	0.126	0.098	1.488	0.137	Rejected
H5: PEU→UV	0.351	0.076	5.426***	0.000	Accepted
H6: PEU→BI	0.282	0.081	4.168***	0.000	Accepted
H7: PEU→PU	0.250	0.122	2.323**	0.020	Accepted
H8: PU→HV	0.253	0.096	2.682***	0.007	Accepted
H9: PU→BI	0.059	0.091	0.689	0.491	Rejected
H10: ATT→HV	0.268	0.075	4.147***	0.000	Accepted
H11: ATT→UV	0.403	0.077	6.193***	0.000	Accepted
H12: ATT→BI	0.339	0.067	6.143***	0.000	Accepted
H13: PF→HV	−0.579	0.068	−9.605***	0.000	Accepted
H14: PF→UV	−0.420	0.063	−7.679***	0.000	Accepted
H15: HV→BI	0.287	0.059	5.035***	0.000	Accepted
H16: UV→BI	0.165	0.072	2.347**	0.019	Supported
H17: PU→UV	0.437	0.068	6.241***	0.000	Supported
H18: ATT→UV→BI	0.108	0.0367	2.195**	0.028	Supported (Partial)
H19: ATT→HV→BI	0.117	0.0289	3.211***	0.001	Supported (Partial)

** Significant at 5% level, *** Significant at 1% level

behavioral intention and utilitarian value affect perceived usefulness (β = 0.437; t = 6.241) and behavioral intention (β = 0.165; t = 2.347). Therefore, we accept hypotheses 1–3, 5–7, and 9–17, all of which are significant at the 5% level except for H4 & 8, which exhibit non-significance.

4.6 Mediating effect of utilitarian and hedonic value

The current research used the Sobel test to examine whether utilitarian and hedonic values moderate the link between attitude and behavioral intent, which is what (Hayes & Preacher, 2010) proposed back in 2010. Rather than bootstrapping, we used a Sobel test because the data set was normally distributed. The proper analysis, which can provide the necessary endorsement, is the joint significance of the indirect effect method. According to the results of this study, utilitarian values (β = 0.108, t = 2.288, $P < 0.05$) and hedonic values (β = 0.117, t = 0.917, $P < 0.05$) partially mediate the relationship between attitude and BI. We accept hypotheses 18 and 19 as a result.

5 Discussion

We extended TAM in this study by adding four more constructs, all of which are empirically established. Notably, the R^2 values for use intention in the current expanded model are 0.899, which is significantly greater than the 0.40 values obtained in the older TAM model (Sun & Zhang, 2006; Venkatesh et al., 2012). Even yet, this explanatory power exceeds that of earlier studies that expanded the TAM for the dependent variable of behavioral intention (Otter & Beer, 2021; Rafique et al., 2020; Zheng & Li, 2020). These findings indicate that, because extended TAM is capable of predicting behavioral intention, the suggested model is generally comprehensive, adequate, accurate, and useful for comprehending education in online distance learning.

This study's findings demonstrate that self-efficacy has a beneficial effect on perceived ease of use (H1). This finding is in line with previous research (Mutahar et al., 2018; Ozturk et al., 2016; Singh & Srivastava, 2020) indicating that students with a better sense of self-efficacy are more inclined to enroll in online distance learning courses. Additionally, studies supporting Hypothesis 2 indicate that self-efficacy has a positive effect on perceived usefulness. In general, these findings corroborate prior research (Chawla & Joshi, 2020; Mutahar et al., 2018; Singh & Srivastava, 2020) and found both relationships to be significant. Additionally, the study reveals (H3) that students believe their effort, perseverance, and anxiety are associated with their attitude toward online distance learning, which is matched with past studies (Budu et al., 2018; Zhao & Shi, 2018).

As hypothesized (H4-H7), perceived ease of use is one of the vital predictors that affect hedonic value, utilitarian value, behavioral intention, and perceived usefulness. As per the result, perceived ease of use is found significantly related to the utilitarian value and utilitarian value, which is partially aligned with the past study of (Ozturk

et al., 2016) who revealed how difficult the technology to use is correlated with utilitarian value, not with hedonic value. Inconsistent with the study of (Youn & Lee, 2019), perceived ease of use is found significantly correlated with perceived usefulness and behavioral intention which implies that the higher the ease of use the higher the perceived usefulness and the intention to adopt online distance learning courses for students.

As predicted (H8), the relationship between perceived usefulness and hedonic value was found significant. This is consistent with the earlier study of (Chun et al., 2012) and (Ozturk et al., 2016) who identified that the higher the perceived usefulness, the higher the hedonic value for the respondents. In contrast, perceived usefulness appeared insignificant with the behavioral intention in opposite to the hypothesized (H9). This result also reverses the past literature (Broom et al., 2019; Šumak et al., 2011).

By accepting the hypothesis (H10-H11), the outcome of this study confirms the positive relationship between attitude with utilitarian value and hedonic value. The results are in line with past studies (Avcilar & Özsoy, 2015; Chen et al., 2020). The result affirms that the higher the attitude of students, the higher the utilitarian value and hedonic value for accepting online distance learning courses. The study also endorses that attitude significantly affects behavioral intention (H12). Earlier research (Karjaluoto & Leppäniemi, 2013; Yadav & Pathak, 2017) are consistent with this study's results.

As expected in hypotheses H13-H14, PF was found negatively influenced by the utilitarian value and hedonic value for the online distance learning courses. The outcome is similar to the previous studies (Cronin et al., 2000; Hanzaee & Khonsari, 2011; Kim & Han, 2011). This means the higher the perceived fees or cost involved, the lower the utilitarian value and hedonic value for the online distance learning courses. Likewise, the results (Hypothesis 15 & 16) show the relationships between utilitarian value and hedonic value with behavioral intention are significant in compliance with the study (Seo & Lee, 2021). The student with higher utilitarian value and hedonic values intended greatly to adopt online distance learning courses. The result (H17) also shows that utilitarian value positively affects perceived usefulness meaning that the higher the utilitarian value the higher the perceived usefulness of ODL courses.

Regarding H18 and H19, the results are compatible with past research (Chen et al., 2020; Hashmi et al., 2019; Kim & Yang, 2019; Mehmood & Hanaysha, 2015; Vieira et al., 2018). The utilitarian value and hedonic value of consumers act as mediating factors between attitude and Behavioral intention. According to the findings of this study, utilitarian value and hedonic value are critical for students' decisions to enroll in distant learning courses.

6 Implications

6.1 Theoretical implications

This research has made some contributions to the existing body of knowledge. First, the study of online distance learning adoption is done in the context of

Malaysia which is progressing in terms of its educational qualities. Online education is prevailing for a long in western countries, but in Malaysia, this is not that much accepted so far. This study will search for the reasons behind which will help educational researchers. Second, the study contributes theoretically toward the validation of the Technological Acceptance Model (TAM) in the context of online education system acceptance. In this study, we applied TAM in the technology-driven education system perspectives based on students' opinions compared to the past others' use in different technology acceptance.

The extension of TAM is the third most important contribution of this work. This research successfully extended TAM by incorporating four additional variables (perceived fees, self-efficacy, utilitarian, and hedonic value) that are applicable to analyzing the acceptability of online distance learning courses in the given settings. Fourth, it contributes theoretically (especially the TAM model) by integrating perceived values in two-dimensional values contracts; utilitarian values and hedonic values. Most of the earlier studies in the technology context used a specific technology adoption model. None of the research included hedonic and utilitarian values in the TAM model as far as the researcher's limited knowledge is concerned.

Fifth, the attitude-intention gap is a much-talked issue in technology-driven research, most notably in educational technology. When students are questioned, they show an extremely favorable attitude toward educational technology, indicating a deficiency in intention-behavior, as many of these attitudes do not translate into intention or conduct. Accordingly, the present study dealt with the issue of identifying probable reasons for such gaps in Malaysia by introducing the utilitarian and hedonic value constructs into the research framework as a mediator and empirically demonstrating them. This will assist future researchers to understand the attitude-intention gap in educational technology perspectives.

6.2 Practical implications

Numerous policy implications for managers and policymakers are discussed in this study. First, the online distance learning program is not popularly run in Malaysia. By examining all factors, this study will benefit universities in Malaysia by recognizing the most important effective factors influencing the acceptance of online distance learning in Malaysia. Second, the outcomes of the self-efficacy study indicate that students who have a high degree of self-efficacy are more likely to find it easier to use this online distance learning at the university level. Furthermore, perceived ease of use was found to be relevant when participating in online distance learning courses. As a result, universities must offer training sessions to familiarize users with the educational system. These training sessions could be arranged through short physical and video demos during roadshows, on television, and/or on social media platforms, among other methods.

Third, the inclination to enroll in online distance learning courses is significantly influenced by utilitarian value and hedonic value exposure. The utilitarian value and hedonic value have a mediating influence on attitudes and consumer intentions to enroll in online distance learning courses when it comes to mediating effects. The

utilitarian value mediates between attitude and behavioral intention, showing that elements such as ease of decision-making are important. Taking into account prior experiences and projected future problems (such as fatigue and screenholic), the utilitarian value becomes even more critical to the pupils. As a result, educational authorities must constantly improve the overall quality of their hardware, software, and new, useful technologies for education. Students' past experiences (hedonic value) must be a priority for university authorities, who must exploit this information to boost use intentions.

Fourth, cheaper perceived fees are proved to be important for utilitarian and hedonic value maximization and thereby the joint intention. Since distance learning operates via the internet, the cost must be relatively lower than the physically offered course due to the lower operating cost. Universities must consider lowering the fees so that they can avail themselves to a large number of students and they should also promote their online education quality, accreditations or credibility, and fee information to the students to reduce students' misperception about online distance learning courses.

Fifth, the effective and smooth functioning of distance learning courses needs not only students' skills but also demands the skills of tutors handling technologies. Also, intervention with new and smart technology such as the Internet of things, Artificial intelligence in education is needed equally which could be difficult for the institutions to afford without the help of the government. The education ministry and government policymakers must ensure specific policy support in maintaining updated technology in distance learning infrastructure and giving subsidies in various forms if necessary.

7 Conclusion, limitations and suggestions for the future direction

The study aimed to identify the factors that affect students' intention to join online distance learning courses in Malaysia. The study also intended to determine the mediating role of hedonic and utilitarian values in the association between attitude and intention. The study reveals that hedonic value, utilitarian value, perceived ease of use, and attitude except for perceived usefulness, affect behavioral intention to accept online distance learning courses except for perceived usefulness. The antecedents of utilitarian value are perceived fees, attitude, and perceived ease of use, whereas the antecedents of hedonic value are perceived usefulness, attitude, and perceived fees except for perceived ease of use. Finally, self-efficacy affects perceived usefulness, perceived ease of use, and attitude towards the acceptance of online distance learning courses.

The study is not an exception without limitations. First, the study used behavioral intentions to participate in online distance learning courses in this research as the respondents are from traditional bachelor programs (beyond online mode). Future studies can add actual behavior to provide insight into the extent to which intention becomes action. Second, these outcomes suit well with the Malaysian or similar economic setting based on the student's opinions. The generalization might be inappropriate in another country's context, particularly in western countries where

already these courses are operating successfully. Thus, advanced research can be made in comparison with various countries by incorporating other stakeholders like administrating authorities, etc. Third, although present research covers the hedonic and utilitarian values as a mediator between attitude-intention gaps, future research could track the gap between values-intention gaps (hedonic/utilitarian value-intention) proposing further mediating or moderating variables. Fourth, the study applied a cross-sectional research design which means data were collected at a single point in time. This is because of the restricted resources for researchers to carry out this survey, and the research was quantitative. If this study had been longitudinal and mixed, the results would have shown more in-depth perspectives. Future research could come up with an experimental or longitudinal research design. Fifth, additional research could incorporate more constructs, particularly culture, technology readiness, and trust, as well as the moderating effects of demographic factors, by employing probabilistic sampling, to better understand students' acceptance and adoption of e-learning systems, as well as their reasons for doing so. The effectiveness of university students' learning can also be studied in the future if e-learning methods are used.

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Data availability statement The data that support the findings of this study are available from the corresponding authors (S.S.A) upon reasonable request.

Declarations

Conflict of interest The authors have declared no conflicts of interest.

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Authors and Affiliations

Syed Shah Alam[1] · Mohammad Masukujjaman[1] · Maisarah Ahmad[2] · Romlah Jaffor[3]

Mohammad Masukujjaman
masuk@ukm.edu.my

Maisarah Ahmad
drmaisarah.ahmad@idrperak.com

Romlah Jaffor
romlah@ukm.edu.my

[1] Graduate School of Business, The National University of Malaysia, Bangi, Malaysia

[2] Institute Darul Ridzuan Perak, Ipoh, Malaysia

[3] Faculty of Economics and Management, The National University of Malaysia, Bangi, Malaysia