The Role of Perceived Usefulness and Confirmation in Influencing Student's Satisfaction on Online Distance Learning

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Abstract: Today's learning opportunities are immense in scale and bolstered by the support of technological advancements. Many universities in Malaysia have contributed to the trend of advancements in education and technology. It was recommended that online distance learning (ODL) and online teaching processes should be used at all levels of education during the COVID-19 pandemic. However, the use of these technological advancements has encountered challenges, which were recognized during the initial application of ODL. Both students and academics faced many obstacles as first-time users of online education. This study explores students' expectations of ODL based on Expectation-confirmation theory (ECT). A survey was conducted with 579 university students to test the hypotheses of this study. The results of this questionnaire were tested using structural equation modeling (SEM) AMOS mediation analysis. The results showed partial mediating effects between perceived usefulness, confirmation, and satisfaction with online distance learning. Furthermore, it was found that perceived usefulness has a significant influence on student satisfaction with and confirmation of ODL. To ensure that students of higher learning institutions are satisfied with ODL, it is vital for universities and colleges to make these students believe that the application of ODL is useful and can create significant value for them.

Keywords: Expectation-confirmation Theory, Online Distance Learning, Perceived Usefulness, Student's Satisfaction, University Students

1. Introduction

COVID-19 has wreaked havoc on lives worldwide since its emergence from Wuhan, China. The pandemic has had a significant global impact on educational institutions, as it has on many other industries (Hashemi, 2021). Many national governments have temporarily closed educational facilities to combat the spread of COVID-19. More than 72 percent of the world's students population are not attending school or college as a result of the increasing number of lockdown situations worldwide (Verma & Prakash, 2020). To break the COVID-19 chain, the Malaysian government announced a Movement Control Order (MCO). The enforcement of this order was declared by the Prime Minister to be the most critical preventative measure going forward. Due to the unprecedented nature of the crisis, the government has introduced extensive changes to the whole educational system. Given the infeasibility of following the traditional ways of teaching and delivering classes, the adoption of online

distance learning (ODL) programs was deemed necessary (Matthew & Chung, 2020; Samat, Awang, Hussin, & Nawi, 2020). During this time, the ODL mode has been more popular than traditional educational modes. It allows innovation in education so both students and educators can interact online throughout times of crisis, providing creative and resilient solutions to combat the disruption they face. In addition, it can improve education in various ways, making it easier for educators to develop instructional materials that allow students to learn and collaborate in novel ways (Dhawan, 2020; Tareen & Haand, 2020). Institutes of Higher Learning (IsHL) in Malaysia started applying ODL during the semester session that started in April 2020 (Yusuf, 2020). Regardless of the educators' qualifications or the universities' facilities, all the educators in IsHL have been given complete autonomy in developing the teaching methodology and style (Othman, Kadar & Umar, 2020).

In making an ODL class a success, the students need to work together because this new learning technique is flexible and practical, so it should make them eager to study. Nevertheless, what to teach, how to teach, and how to meet basic needs (such as having an educational infrastructure) are all the questions that the country must face. The willingness to continue using ODL and the pleasure of students and educators are both important factors. Student consent to adopt and embrace the new system is critical to the successful progress of ODL (Wang, Lin, & Su, 2021). In addition, students have raised several concerns about internet stability, network coverage, and device compatibility, among other issues (Samat et al., 2020; Wikramanayake, 2014). Every country has its own distinct obstacles. However, due to the outbreak of the disease, few studies have been conducted exclusively on ODL in Malaysia that focus on students' satisfaction and willingness to continue using the online approach (Mohamad, Hashim, Azer, Hamzah, & Khalid, 2020). Hence, this study explored an IsHL on the East Coast of Malaysia to investigate the students' expectations of ODL based on the Expectation–Confirmation Model (ECM). Three constructs, namely perceived usefulness, confirmation, and satisfaction were used to measure the research study. This paper seeks to address the knowledge gap related to the students' expectations of ODL by identifying the influence of the three constructs. Therefore, the objectives of the study are as follows:

1. To identify the effect of perceived usefulness on students' satisfaction with online distance learning.
2. To identify the effect of perceived usefulness on students' confirmation of online distance learning.
3. To identify the effect of students' confirmation on expected satisfaction through online distance learning.
4. To examine the mediating effect of confirmation between perceived usefulness and expected satisfaction through online distance learning.

Given these research objectives, the researchers devised a set of research questions, as stated below:

1. What is the effect of perceived usefulness on students' satisfaction with online distance learning?
2. What is the effect of perceived usefulness on students' confirmation of online distance learning?
3. What is the effect of students' confirmation on expected satisfaction through online distance learning?
4. What is the mediating effect of confirmation between perceived usefulness and expected satisfaction through online distance learning?

1.1   Expectation–Confirmation Model (ECM)

Bhattacherjee (2001) proposed the Expectation–confirmation model (ECM) of IT sustainability, which was based on planned behavior theory and technology acceptance theory (Ajzen & Fishbein, Ajzen, 1991; 1980; Davis, 1989). The ECM focuses on the individual relationships between pre- and post-adoption perceptions, perceived usefulness, satisfaction, and, ultimately, the intention to continue (Bhattacherjee, 2001). The ECM has since been used in a variety of studies examining IT retention intentions and consumers' repeat purchase decisions. Stone and Baker-Eveleth (2013) also stated that all types of technology can be applied with the ECM model. The current researchers focused exclusively on student satisfaction with ODL because the online approach has only recently been widely implemented in response to the COVID-19 outbreak. The investigation of students' attitudes to ODL is critical for improving the ODL approach. Customer satisfaction reflects the degree to which the experience of a product's use meets the buyer's value expectations (Razak & Shamsudin, 2019).

Satisfied customers will purchase or use a service/product again (Davras & Caber, 2019). In the educational field, satisfaction is positively related to performance in online classes, so higher satisfaction will lead to better performance (Gopal, Singh & Aggarwal, 2021).

2.   Literature Review

ODL is a teaching method that fully utilizes the internet network and is easily accessible via a computer or mobile phone. Its video and audio capacities allow students not to physically attend lecture sessions (Zhang & Kenny, 2010). This method of learning has numerous advantages for higher learning institutes, educators, and students. The main advantage is that ODL is cost-saving. Due to its flexibility and convenience, ODL may save time and money for both educators and students. For online learners, learning is not limited to specific time zones or locations, and users are not hampered by distances. In asynchronous online learning, students can access online materials at any time, while synchronous online learning allows for real-time interaction between students and their instructor. Learners can use the Internet to access up-to-date materials and communicate with experts in specific fields of study. Given the universal benefits of ODL, this teaching method should be accepted widely but that has not been the case. Negative online learning experiences are sure to make students stop using this method of learning. Only when students are happy and satisfied with a new learning method will they continue to use it (Stone & Baker-Eveleth, 2013).

This study proposes a theoretical framework of satisfaction with using ODL in the context of institutes of higher learning in Malaysia. The framework is based on the expectation-confirmation model (ECM), which was developed based on expectation-confirmation theory (ECT) to forecast behavioral intention in an IT context (Oliver, 1980; Oliver 1997). The ECM predicts behavioral intention using only three variables: usefulness, confirmation, and satisfaction (Bhattacherjee, 2001). In this study, the researchers took into account perceived usefulness, confirmation, and satisfaction from the ECM to investigate the students' satisfaction with ODL, the aim being to improve this new learning method. As a new learning method of instruction, ODL requires further development before its continued use is fully approved. User or customer satisfaction reflects the degree to which a product's use experience meets the buyer's value expectations (Razak & Shamsudin, 2019) and their satisfaction may drive them to use the product/service again (Davras & Caber, 2019).

The ECM postulates that satisfaction is affected by users' perceived usefulness and confirmation while perceived usefulness is affected by users' confirmation (Hossain, Mahmud & Idrus, 2021). The model's three main constructs are perceived usefulness, confirmation, and satisfaction (Refer to figure 1.0). From the theoretical framework, it can be noted that the dependent variable is satisfaction, the independent variable is perceived usefulness, and the mediator is confirmation.
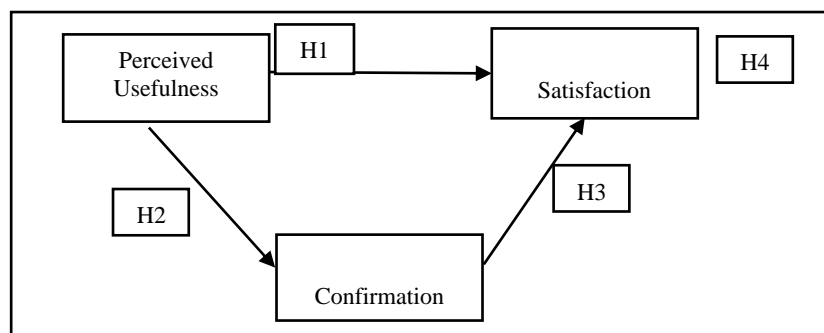

Fig. 1 Theoretical Framework

The term 'perceived usefulness' refers to a person's belief that using a particular system will improve his or her job performance. (Davis, 1989). Perceived usefulness has been found to have a strong positive influence on users' satisfaction (Bhattacherjee, 2001; Lin & Wang, 2012). This association has been identified in studies of different contexts, like e-learning systems (Almahamid & Rub, 2011; Ho, 2010) and electronic textbooks (Stone & Baker-Evelet, 2013). One study found that students believed that using new teaching methods, such as large-scale open online courses, is very useful and makes

them more knowledgeable, so they feel very satisfied (Daneji, Ayub & Khambari, 2019). Previous studies have found that perceived usefulness has a positive influence on users' satisfaction (Cao, Masood, Luqman & Ali, 2018; Huang, 2019; Stone & Baker-Eveleth, 2013; Tam, Santos, & Oliveira, 2020; Tsai, Lee & Ruangkanjanases, 2020; Wang, Li & Su, 2021; Zhou, 2017). Therefore, the following hypothesis was developed:

H1: There is a positive relationship between perceived usefulness and satisfaction.

Perceived usefulness is also referred to users' perceptions of the expected benefits of using a new system (Davis, 1989). Benefit expectation is associated with confirmation because it provides a baseline or reference information for product or service confirmation (Ashraf, Jaafar & Sulaiman, 2017). The relationship between benefit expectation and confirmation is complex and the existing literature has reported inconclusive results (including positive, negative, and no relationships) across a variety of research contexts (Oliver, 2010; Sarkar & Khare, 2019; Yi, 1990). The majority of the research suggests and supports a negative relationship between expectation and confirmation (Kim, Ferrin, & Rao, 2009). Assuming constant perceived performance, high benefit expectations are more difficult to meet or exceed, whereas low expectations are more easily met; thus, lower expectations typically result in higher confirmation (Kim et al. 2009). Additionally, empirical research has established that there is a positive correlation between expectation and confirmation. Previous studies have determined that perceived usefulness has a significant positive effect on confirmation; high expectations result in positive confirmation, whereas low expectations result in negative confirmation (Baharum & Jaafar, 2015; Xin, Shaoxia, Bin, Xin & Shun, 2020). Hence, the following hypothesis was developed:

H2: There is a positive relationship between perceived usefulness and confirmation.

Confirmation is defined as the extent to which a user perceives that their initial expectations are being confirmed during their actual use of a product/service (Samar & Ghani, 2019). Confirmation also refers to users' perception of a match between their expectations regarding the use of a form of technology and its actual performance (Bhattacherjee, 2001). The degree of confirmation has a positive effect on satisfaction (Zhou, 2017). If users believe that a form of technology is extremely useful and that their actual use experience corresponds to or exceeds their initial expectations, confirmation will lead to user satisfaction (Cao et al., 2018; Huang, 2019; Lu, Wang & Lu, 2019; Ouyang et al., 2017; Rahi et al.,2019; Tam et al., 2018). Furthermore, another study related to a technology service found that users will be satisfied when a service meets their previous expectations of the online service e.g Hoehle, Huff and Godde (2012). This is because the anticipated benefits of using the technology have been realized. As a result, users will compare their experience to their initial expectations. If their expectations are met, they will demonstrate higher levels of satisfaction.

H3: There is a positive relationship between confirmation and satisfaction.

Wu, Tennyson and Hsia (2010) defined satisfaction as the attainment of all the benefits a learner seeks to garner from learning, including improved beliefs and attitudes. Previous research has defined satisfaction as the customer's overall assessment of whether a particular service has met their expectations based on their experience (Bhattacherjee, 2001). The definitions of satisfaction highlight how an individual's psychological or emotional fulfillment depends on or originates from the expected performance discrepancy (confirmation). Satisfaction is a highly important factor in the decision to continue to learn (Sim, Sim & Quah, 2020). It is critical to sustaining one's motivation to continue learning (Bolliger et al., 2014). Several studies have identified a positive relationship between user confirmation, perceived usefulness, and satisfaction (Park, 2020; Tam et al., 2020). Users' perceived usefulness and confirmation influences satisfaction; while users' confirmation influences perceived usefulness (Hossain & Quaddus, 2012). Ashraf et al. (2017) concluded that users' perceived usefulness served as the baseline for confirmation, which subsequently determined the level of satisfaction. According to Stone and Baker-Eveleth (2013), students' confirmations of their perceptions of e-texts prior to and following e-text use had an effect on both their perceived satisfaction and perceived

usefulness. Due to these findings, this study investigated the mediation effect that confirmation had on perceived usefulness and satisfaction in ODL; this approach can contribute by increasing the literature on this topic. Therefore, the following hypothesis was devised for use in the context of ODL:

H4: Confirmation mediates the relationship between perceived usefulness and satisfaction.

3.   Methodology

3.1   Procedures and Samples

This quantitative research was conducted in relation to the ODL techniques applied during the Malaysian MCO. Students from nine (9) faculties were involved as the target sample. Following a stratified random sampling approach (Sekaran & Bougie, 2009), all 1,495 final-year students from semesters four and five (diploma and degree level), as well as students from the pre-higher educational level, were invited to participate in this survey. The samples were selected based on the differences in educational level and teaching methods applied, which depended on each faculty's requirements. The final-year students presented interesting views on how teaching and learning are ordinarily applied, as they had been exposed to both approaches. Specifically, these students had been used to conventional face-to-face methods of class teaching, while they had also been exposed to the new university academic requirements regarding, for instance, final assessments, tests, and quizzes. Lecturers from selected classes were approached to disseminate the survey to their students via a Google Forms link. Potential students were informed that participation was voluntary and that responses were anonymous. Online survey data collected from 18 study programs during the final week of study resulted in 656 participants being drawn. A total of 77 had either incomplete or conflicting answers and were therefore discarded. This left a total of 579 usable answers.

3.2   Measures

Three variables were used in describing the "Perceived Usefulness", "Confirmation" and "Satisfaction" factors. The constructs, including some reverse items, were measured using a five-point scale ranging from (1) "Strongly Disagree" to (5) "Strongly Agree".

Perceived Usefulness. The measurement of Perceived Usefulness used Davis' (1989) study (α = 0.98). A total of six items were used to measure each student's expectations of ODL. Sample statements from this scale were "ODL helps to improve my learning" and "ODL helps me to focus more on my study". In this study, the α reliability was 0.88 for this construct.

Confirmation. Furthermore, this research employed the confirmation scale used by Bhattacherjee (2001). The items measured were each student's confirmation that they had achieved certain expected benefits through the experience of using ODL. This construct was assessed using six items (α =0.82). Sample statements included "My experience with ODL is better than I had expected" and "The ODL system has fulfilled my learning needs". The α reliability for this construct was 0.93.

Satisfaction. Following the work of Bhattacherjee (2001), six items (α = 0.87) were used to measure the respondents' engagement of satisfaction behavior. This construct was used to identify the extent to which the students' expectations of ODL had been fulfilled. Some of the statements used were "The ODL system has increased my understanding level while learning" and "ODL makes me happy to study more". The α reliability for this construct was 0.92.

3.3   Data Analysis

The research model was tested using the Structural Equation Modeling (SEM) technique, which employed the SPSS AMOS 26 Graphics computer software. The statistical approach incorporates path analysis, factor analysis, and linear regression into a theoretical causal model for the analysis of latent constructs and measurable variables. This research followed a two-step modeling technique, which involved developing the measurement model before proceeding with the structural model, as recommended by Mulaik and Millsap (2000), to assess the relationships between the conceptual

constructs. The measurement properties of the constructs were assessed first, and then the structural model was analyzed to test the hypotheses.

This research adopted measures that are commonly used to evaluate models, namely the root-mean-square error of approximation (RMSEA) <0.08, goodness of fit index (GFI) >0.90, adjusted goodness of fit (AGFI) >0.90, comparative fit index (CFI) >,0.90 Tucker-Lewis index (TLI) >,0.90 normed fit index (NFI) >0.90, and the parsimonious fit indices, which can be measured by the normed chi-square ($\chi 2/df$) <5.0. Furthermore, covariances that were not significant in the SEM path analysis were deleted.

4.   Results

The reliability and validity were assessed once the uni-dimensionality of the constructs had been achieved. Reliability was assessed using Cronbach's alpha, construct reliability (CR), and the average variance extracted (AVE). The summary of the measurement model evaluation is shown in Table 1. The Cronbach's alpha result for all the constructs exceeded the benchmark of 0.65 (Piaw, 2009). Using confirmatory factor analysis, the construct reliability (CR) and average variance extracted were calculated based on the formulas proposed by Hair Jr et al. (2010). These tests further confirmed the reliability of the constructs. All the constructs used in this research fulfilled the benchmarks of CR ≥ 0.60 and AVE ≥ 0.50, as recommended by Zainudin (2012). Moreover, the results for discriminant validity showed that the correlation between the measurement model factors did not exceed 0.85, as suggested by Kline (1998); therefore, the measurement model could be regarded as acceptable.

The sample consisted of a total of 579 university students. The majority of the respondents were female (73%) and the remainder were male (27%). More than half of the respondents (51.5%) were from urban areas, while the rest were from rural areas (48.5%). Most respondents (70.3%) were diploma students, while the remainder were degree (26.9%) and Pre-Diploma students (2.8%).

Table 1. Measurement Model Evaluation

Construct	Items	Standardized Loading	Cronbach's Alpha	Construct Reliability (CR) >0.60	Average Variance Extracted (AVE) >0.50
Perceived Usefulness	PU1	0.82			
	PU2	0.90			
	PU3	0.89	0.88	0.890	0.673
	PU4	0.65			
Confirmation	CON1	0.88			
	CON3	0.81			
	CON5	0.90	0.93	0.929	0.766
	CON6	0.92			
Satisfaction	SAT2	0.89			
	SAT3	0.89			
	SAT4	0.77	0.92	0.925	0.713
	SAT5	0.74			
	SAT6	0.91			

The descriptive statistics (the means, standard deviations, and correlations) for all the variables used in this research are shown in Table 2. The correlation values between the variables were found to be less than 0.85, as recommended by Kline (1998). Furthermore, the measurement model achieved discriminant validity as its diagonal value was higher than the values in the rows and columns. In this research, all the scales' internal reliabilities (Cronbach's alpha coefficients) exceeded the minimum level of 0.70 (Nunnaly & Bernstein, 1994), ranging from 0.88 to 0.93 (Table 2), while the correlations between the variables were found to range between 0.46 and 0.65.

Table 2. Means (M), Standard Deviation (SD) and Correlation between Constructs

	Constructs	M	SD	Cronbach's Alpha	1	2	3
1	Perceived Usefulness	2.38	0.92	0.88	0.82		
2	Confirmation	2.40	0.93	0.93	0.49	0.87	
3	Satisfaction	2.37	0.92	0.92	0.46	0.65	0.84

The hypothesized structural model of this study was tested using path analysis. Initially, confirmatory factor analysis (CFA) was conducted to assess the dimensionality and fit of the measures used in the model. The model fit was verified through the ChiSq/df, RMSEA, GFI, AGFI, CFI, TLI, and NFI, as mentioned in the previous section. The results after testing the measurement models used are summarized in Table 3.

Table 3. Summary of Goodness-of-Fit Indices of Measurement Models (CFA)

Measurement Models	Value	Cut-off Values
RMSEA	0.046	p< 0.08
GFI	0.964	p> 0.90
AGFI	0.947	p>0.90
CFI	0.990	p>0.90
TLI	0.987	p>0.90
NFI	0.981	p>0.90
ChiSq/df	2.220	<5.0

The fit indices of the structural model showed consistency with the empirical data, as all fit statistics fulfilled the cut-off values. Based on the new fitness index results, the hypothesized model was deemed to provide a good fit since all the indexes achieved the minimum required level. The reviewed structural model, as shown in Figure 2, clearly indicates a strong fit to the data.
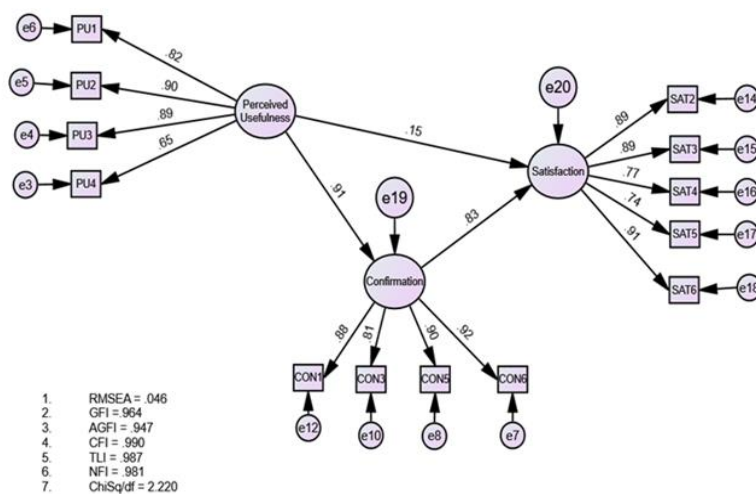

Fig. 2 Structural Model

Table 4 presents the results of the direct effect of perceived usefulness, confirmation, and satisfaction. It reveals that the beta coefficients for the direct effect of perceived usefulness and

satisfaction were significant (p< 0.05), which supports Hypothesis 1. Meanwhile, the beta coefficients for the direct effect between perceived usefulness and confirmation, and between confirmation and satisfaction, were also significant (p<0.001), which supports Hypothesis 2 and Hypothesis 3.

Table 4. Results of Hypotheses Tests

Hypothesized Paths	Beta Estimate	Standardized Estimate	C.R	P-value	Result	Hypothesis
Perceived Usefulness ⭢ Satisfaction	.186	.072	2.560	.010	Supported	H1
Perceived Usefulness ⭢ Confirmation	0.983	.068	17.340	***	Supported	H2
Confirmation ⭢ Satisfaction	.791	.058	13.551	***	Supported	H3

***indicate a highly significant at <0.001

The full CFA model was conducted to test the hypotheses and measure the mediation effect. This research employed suggestions by Baron and Kenny (1986) to determine the extent of the mediation effect. When establishing the mediation effect, it is essential to evaluate the direct effect between perceived usefulness and satisfaction. If both the indirect and direct effects are significant, this shows partial mediation. If the indirect and total effects are significant but the direct effect is not significant, this indicates full mediation.

Table 5. The Hypothesis Testing for a Direct Effect

Hypothesized Paths	Beta Estimate	Standardized Estimate	C.R	P-value	Result
Perceived Usefulness ⭢ Satisfaction	0.908	.066	16.757	***	Significant

Table 5 reveals that the beta coefficient for the direct effect of perceived usefulness and satisfaction was significant (p=0.001). Meanwhile, the beta coefficients for the indirect effect between perceived usefulness and confirmation, and between confirmation and satisfaction, were significant (p=0.001) (Table 6). Based on the results obtained, it was confirmed that the confirmation construct partially mediates the relationship between the perceived usefulness and satisfaction constructs. Thus, Hypothesis 4 was supported.

Table 6. Multiple Regression Weights

Hypothesized Paths	Beta Estimate	Standardized Estimate	C.R	P-value	Result
Perceived Usefulness Satisfaction	.186	.072	2.560	.010	Significant
Perceived Usefulness Confirmation	0.983	.068	17.340	***	Significant
Confirmation Satisfaction	.791	.058	13.551	***	Significant

***indicate a highly significant at <0.001

5. Discussion

The purpose of this study was to explore students' expectations of online distance learning (ODL) based on expectation-confirmation theory (ECT). The samples involved in this study were final-year diploma and degree students from several faculties. The results showed the direct effect of perceived usefulness, confirmation, and satisfaction. The beta coefficient for perceived usefulness and satisfaction was significant at (p< 0.05), which supports Hypothesis 1. These findings not only are

consistent with several previous studies (Stone & Baker-Eveleth, 2013; Hsu, Chang & Lin, 2013; Zhou, 2017) but also provides a possible explanation that perceived usefulness has a positive influence on users' satisfaction. It was determined that in using ODL, all the students felt satisfied that they had garnered more knowledge without any restriction.

Meanwhile, other direct effects exist, with the beta coefficients between perceived usefulness and confirmation, and between confirmation and satisfaction being significant at (p<0.001), which supports Hypothesis 2 and Hypothesis 3. These results are consistent with those of studies undertaken by Ashraf et al. (2017) and (Zhou, 2017). Hypothesis 4 is supported as the confirmation construct partially mediates the relationship between the perceived usefulness and satisfaction constructs. Therefore, to raise levels of satisfaction, it should be noted that perceived usefulness played a more significant role than confirmation for all students in the ODL context in higher learning institution.

5.1   Theoretical and Managerial Implication

Grounded on Expectation-confirmation theory, the findings of this study reveal that perceived usefulness has a significant influence on students' satisfaction with and confirmation of ODL. These factors (ODL satisfaction and confirmation) have been impacted by perceived usefulness in terms of assisting the students in their learning, preparing them for exams or assignments, and improving their academic performance. Basically, students need to shift their traditional perspective and open up a world that is beyond their typical classroom. Usage of technology in ODL offers wide range of benefits and opportunities including the access to many new resources. These new benefits discovered may have positive impact on the education process which will bring satisfaction to them. In order to ensure that students at higher learning institutions are satisfied with ODL, it is crucial for universities and colleges to make their students believe that the application of ODL is useful and can create significant value for them (Lin & Wang, 2012). To increase the level of perceived usefulness based on the students' views, the role of the instructors is to share interesting and quality teaching material, as well as to apply effective interactivity through the ODL platforms. These actions are essential in allowing students to feel the enjoyment, effectiveness, and experience gained through the different learning approach via ODL. Hence, both ODL instructors and students are equally involved and embraced the usage of technology to enhance all possible potential for teaching and learning (Mathew & Chung, 2021; Nasir & Hameed, 2021).

Furthermore, the current study found that the confirmation construct has a positive relationship with student satisfaction. This suggests that to satisfy students through ODL, educational institutions must match the students' expectations with their actual experience while using ODL. To achieve this requires the appropriate resources to be provided, which would make the students' actual experience tally with or surpass their initial expectations. Educational institutions should invest in developing and maintaining e-learning systems for the students. Students need to be introduced to these e-learning systems and their functions, the use of which should be widely promoted. Universities also need to train lecturers in how to use online platforms for teaching and learning so that they become more effective in delivering their online content (Chung, Subramanian & Dass, 2020; Saidi, Sharip, Rahim, Zulkifli & Zain, 2021). In addition, the courses taught using the ODL approach need to be continuously improved so that students perceive that ODL courses are being used more extensively (Gantasala et al., 2021; Samat, Awang, Hussin & Nawi, 2020). Besides, the quality of ODL courses also needs to be constantly upgraded in terms of pedagogy, design, and instructions.

6.   Conclusion

This study was conducted to assess the relationships that perceived usefulness, confirmation, and student satisfaction have with online distance learning. The influence of students' confirmation and its mediating role on student satisfaction were also studied. The outcomes of the SEM analysis confirmed that perceived usefulness and satisfaction are significantly related, so Hypothesis 1 was verified. The relationships between perceived usefulness and confirmation, and between confirmation and satisfaction, were also significant, which verified Hypothesis 2 and Hypothesis 3. The findings from the study also confirmed that the confirmation construct partially mediates the relationship between perceived usefulness and the satisfaction construct, which verified Hypothesis 4. These findings will

contribute by offering valuable evidence to researchers and practitioners aiming to understand the reasons why students may be satisfied with ODL.

This study contains some limitations despite its contributions. This study was limited to studying the impacts that perceived usefulness and confirmation of student satisfaction had on ODL. The impact of satisfaction with ODL in terms of student performance was not studied in this study. In future, the impact of ODL on students' grades and learning achievements should be studied. Additionally, the study findings are based on a sample population of undergraduate level students from a Malaysian public university. It would be interesting for future research to expand the topic to other types of students, potentially those not studying at university.

7.   Co-Author Contribution

All authors have declared that there is no conflict of interest in this article. Author 1 has conducted the statistical analysis and interpretation of the results. Authors 2 and 5 have carried out the field work and prepared the literature review part, while authors 3 and 4 have complete writeup of the whole article.

8.   Acknowledgment

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