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Technology Continuance Theory in Support of Continual Intent to Use Learning Management System in the Philippines

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Abstract

The study is anchored on the use of "Technology Acceptance Theory" (TCT) of Liao (2009) which includes factors like satisfaction, purposefulness, and simplicity perceptions. Following the quantitative research design, it aims to suggest that Learning Management System (LMS) could be adopted after experiencing the COVID-19 global crisis. Three hundred and eighty-two teachers from institutions in education, business administration, accountancy, marketing, management, and arts and sciences were involved in a survey using google forms. survey using google forms. SmartPLS3.3.9 was used for the statistical treatment of data. The findings revealed that information reliability richness (IRR) has a favorable effect on continual intention to utilize available LMS (H1) including purposefulness perception (PUP) (H3), technical facilitating conditions (TFC) (H4), and satisfied beliefs (SB) (H5). Technical facilitating conditions (TFC) has an impact on learners' satisfied beliefs (SB) (H6); purposefulness perceived (PUP) by respondents has a linkage with satisfaction; thus, they will continually utilize LMS after the outbreak (H7); PUP relates to technical facilitating conditions (TFC) (H8); the perceived purpose of utilizing LMS is likely influenced by the level of simplicity of use perception (SUP) (H10), and that prior learners' informational-reliability richness (IRR) could validate the continual intention to use LMS (H11). Having a personal technology device such as a laptop or cell phone with an internet connection encourages continuous use of technology even after the pandemic outbreak. Involving respondents outside of Southeast Asia and conducting more studies related to the same study are highly recommended.

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Introduction

Adopting the learning management system as a result of the COVID-19 pandemic has not been fully resolved in several Philippine higher education institutions most especially in places where the internet is not accessible. At the start of the global crisis, many teachers were uncomfortable using any of the suggested learning management systems such as Google Classroom integrated with Google Meet, Canvas, and other related platforms for educating and learning from the web. Besides, the disruption of classes due to internet connectivity is unavoidable. Online classes have to go on for synchronous sessions supported by learning modules for asynchronous sessions prepared by teachers and administrators in the field.

Since 2020, with all the problems encountered by teachers, the researchers intended to investigate if higher education teachers still wanted to continue with the usage of LMS with their learners. Since, TCT forecasts that users will continue using technology-based services by combining satisfaction and attitude into a single framework (Liao et al., 2009) and the TAM is a theory of information systems that describes how people come to accept and use technology and suggests two major factors: perceived usefulness and ease of use (Davis, 1989). Factors influencing the adoption of learning platforms were to be studied, and the technology continuance theory (TCT) of Liao (2009) and others were found to be applicable in this study.

Literature Review

Liao et al. (2009), in their technology continuance theory, affirm that satisfaction among users could refer to their expectations without any confirmation at all. Moreover, the behavioral intention of a person can be a function of attitude which could develop as a perception of satisfaction. This helps a lot in figuring out the intentions of individuals. Their verification after the act of usage of technology is greater than or equal to their expectations before using a specific technology. Verification reflects the realization of an expected value. This further increases the level usage of the chosen technology.

Rahim et al. (2021) used the TCT model established by Liao et al. (2009) to assess satisfaction in relation to the intention to continue usage of a specified technology. However, it might be difficult for teachers and students to transition to online learning while working from home. Vitales et al. (2021) mentioned that the difficulties noted that users needed to overcome in their study are accessibility of information, interaction, and communication gaps.

In the study conducted by Croucher and Locke (2020), it was anticipated that there would be more acceptability of learning through the web due to the situation. True enough, the global safety advice for the COVID-19 virus's most critical phase has increased the popularity and acceptability of online-based learning methods.

In a study conducted in Indonesia by Aliyyah et al. (2020), it was anticipated that there was a relationship between collaborative learning instructors, institutions, and parents/guardians towards the learners' academic success and their preferred behavior in terms of readiness for technology adoption while learning online.

Several earlier studies focused on LMS acceptability; few dealt with the function of facilitating circumstances and efficacy of information richness on the aspects of technology indicating satisfaction and continuing LMS usage. Thus, it is necessary to look at how satisfied they are with technology use and how they feel about continuing to use LMS, especially with the government's decision to start offering face-to-face sessions by the end of 2022.

Hypothetical Framework

With eleven recommended links, Figure 1 shows the research paradigm in examining the adoption and continual utilization of learning management system during COVID-19 outbreak. The adopted key components for this current study include satisfied beliefs (SB), purposefulness perception (PUP) (i.e., usefulness), and simple to use perceptions (SUP), as well as technical facilitating conditions—as well as technical facilitating conditions to suggest continued use of LMS for institutions in the Philippines.

According to prior usage, some factors which include information-reliability richness, benefits or purpose of using, and usability with ease, as well as technical facilitating aspects, may have a bearing on how users perceive acceptance of a specified technology or system and intention to continue using it.

Aspects of the TCT model proposed by Liao et al. (2009) are integrated with information reliability richness, technical facilitating conditions, and satisfied beliefs as shown in Figure 1.

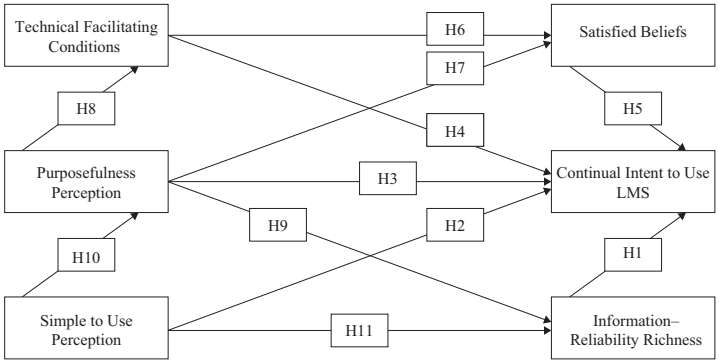

Figure 1 The paradigm proposed for the study

Hypothesis Development

Hypothetical direct and indirect effect paths

The researchers of this particular study acknowledge that any system's acceptability happens in phases. Furthermore, the initial model was modified to better depict the setting of LMS continuation and to solidify the arguments for the continued use of LMS as an "aspect of individual habit or behavior." Earlier studies have shown that "behavioral intent" is appropriate and reliable to employ as an actual adaptive behavior of people (Ajzen, 2009).

Elements like attitudes related to technical facilitating conditions and user approvals (i.e., satisfaction perceptions) were not sufficiently investigated in LMS research in the context of Asia, particularly in the Philippines, necessitating analysis in this setting to validate the claim. Although the most recent theories were utilized to establish the hypotheses, they were redirected in order to meet the acceptability and continuity requirements of this tagged LMS platform model. Moreover, this particular study suggested a framework for a deeper understanding of the factors in the technological continual model, especially through numerous linked articles.

The model is represented in Figure 1. tagged as the paradigm of the study. It depicts a continual intent to use LMS for higher institution teachers in the Philippines.

Information reliability richness (IRR) regressed on continual intent to use LMS (CIUL)

Most of the time, environmental settings influence the reliability and richness of information because of their profound influence on individual behavior. In this sense, the accuracy of deep information can enhance the embracement of technological engagement (Wu et al., 2022). Students appreciate the EMS platform that is proven with quality service content and affirm levels of satisfaction perception with higher ratings. A good EMS instructional platform would depend on the information's richness and reliability towards meaningful usage (Syakur et al., 2020). Thus, it is envisaged that information- reliability richness has a favorable effect on continual intent to use LMS (H1).

Simple to use perception (SUP), aside from purposefulness perception (PUP), and continual intent to use LMS (CIUL)

According to the concept of continuity technology, PUP and SUP are crucial elements in deciding satisfaction perception and a determination to keep using any specific system (Rahim et al., 2021). Perceived utilization is a potent indicator of continuous choice of using information technology following the COVID-19 situation, according to a publication on the model of compelled distanced digital education preferences' satisfaction as well as continuance variation in Microsoft team's apps (Venkatesh et al., 2003, Allo, 2020).

The principal concerns about the acceptability of any particular technology are its purposefulness and simplicity of use (Huang & Liao, 2018). The justified purpose of usage and simplicity of use are key considerations to consider while determining the efficacy of technologies because they either directly or indirectly influence users' inclinations to continue using the provided system. In publications that deal with technological knowledge and accessibility, some prior research has accepted the fundamental TAM components as most adaptable, with simplicity of use and benefits (i.e., usefulness) standing out as crucial features in their perspectives (Oluyinka et al., 2021). Therefore, the following assumptions are made: simple to use perception of the users has a favorable influence on continual intent to use LMS after a pandemic (H2). The users' purposefulness perception has a favorable influence on teachers' continual intent to use LMS (H3).

Technical facilitating conditions, and satisfied belief

Reyes-Chua et al. (2020) enumerated some problems with the use of e-learning platforms in their action research. Among them are the technical working materials' unavailability (i.e., resources), inadequate understanding of how to connect devices with wireless fidelity (Wifi), and insufficient seminars or workshops amongst the learners and some of the Gen Y instructors. Hence, they recommended career advancement through seminars amongst the instructors and learners. Also, users were advised to improve their mode of delivering lectures, slide shows, and exams for each subject they plan to deal with the recommended number of hours that the educational board of the country suggested. Alkhateeb and Abdalla (2021), however, believed that their research study on material usability (i.e., resource usability) in terms of technological acceptance would work as a potential guide for carrying out an in-depth study adopting a positivist paradigm to confirm conclusions on technical know-how of employing specific technologies. Therefore, it is projected that technical facilitating conditions) (H4) and satisfied beliefs (H5) would influence intent towards continual intent to use LMS.

However, some investigations have shown that the use of technological tools like handheld computers, cellphones, postpaid internet subscription, and others that enable virtual education results in unpleasant interaction between instructors and learners (Baticulon et al., 2021). As a consequence, individuals may potentially decide to stop using the educational management system designed for learning. Therefore, this current study postulated that technical facilitating condition might have an impact on teaches' satisfied beliefs (H6).

Purposefulness perception and simple to use perception

Islam and Azad (2015) contend that learners had more favorable opinions about the benefits/ suitability of e-learning than instructors in terms of their desire to adopt and continue using such. However, the study discovered that the learners' rating of how satisfied they were with usage was lower than the ratings of the professors. Learners' continual intentions varied from around 15 percent less than professors' continual intents, which also justified their satisfaction beliefs and the rationale for utilizing such a system. According to a framework that was examined using pertinent data from more than 150 university undergraduates, the best indication of learners' likelihood towards continual usage of learning management system is the purposefulness of their use of the system. The investigation suggests that learners' perceptions of EMS and their degree of being satisfied have no appreciable influence on whether they anticipate continuing using it (Ashrafi et al., 2020). Given the results of other investigations, this study assumes that purposefulness perception of respondents has a linkage with satisfied beliefs, and that they will continually utilize LMS after the outbreak (H7).

Cardullo et al. (2021) believe that hurdles to online courses include poor internet network settings, interactivity, encouragement, and student participation. Educators enhanced their own ability in terms of digital usage, an unsupportive environment, and a limited amount of technical facility resources as reasons why they struggle to deliver well while utilizing technology to impart knowledge remotely. Based on the references mentioned, this study suggests there is a relationship between purposefulness perception and technical facilitating condition (H8). Meanwhile, the assumption (H9) stated that purposefulness perception may influence information-reliability-richness.

The quality of information and personal ability to use the system had a significant impact on the purposefulness point of view, which in turn had an indirect impact on people's desires with regard to embracing it. Therefore, purposefulness perception in utilizing LMS is likely influenced by simple to use (H10). This current study assumed that prior users' informational-reliability richness could influence intent positively the continual intent to use LMS (H11).

Methodology

Respondents

This study is quantitative research, where questionnaires and predictions are based on the quantity of responses analyzed. The researchers of this study could not ascertain the total population. According to Raosoft.com, if the exact sample population is not known, it is safe to use 20, 000 as a basis to determine the appropriate sample size. Following Raosoft.com, this study achieved a total number of 382 The teacher respondents were properly considered for multiple linear regression analysis and modeling. In addition, research has found that in a general ratio, one factor may be justified by twenty respondents and that it is appropriate for multiple linear regression modeling depending on the number of factors within the range of 5 to 7 factors in the study (Feskens & Hox, 2018). Relationships among six factors were proposed in this investigation, and 382 respondents were considered adequate for this study.

Information about the Respondents (Teachers)

The findings of the study performed on the respondents' general characteristics are shown in Table 1. Females made 56 percent of the claims, compared to males at 44 percent. The respondent' average age was between 18 and 30 for 59 percent of the total, and 31 to 40 for 29 percent of the total. Those aged forty and above represented 12 percent of the total respondent, 67 percent were pursuing a first-degree certificate (i.e., bachelor), 26 percent master's degree, 3 percent doctoral degree, and the rest claimed 4 percent. Since reaching the interested respondents was considered optional, this study used a convenient data collection strategy.

Table 1 Information about the respondents

Matric	Parameters	Frequent	Proportions (%)
Gender	Female	214	56
	Male	168	44
	Total	382	100
Age	Bracket 18−30	227	59
	Bracket 31−40	110	29
	Bracket 41−50 above	45	12
	Total	382	
Program	Bachelor/Equivalent degree	257	67
	Master's degree	98	26
	Doctoral degree	12	3
	Others	15	4
	Total	382	100

The report suggested that the females seemed more willing to take part in the study than the males. It is also noted that the volunteers considered are encouraged to get higher educational certificates at an early level of education (Oluyinka et al., 2021).

Instruments

All constructs and stated assumptions in this study were examined (using valid instruments). The respondent measures consist of four items and twenty-seven adapted for the multiple linear regression model of this study. Moreover, four relevant specialists from universities in western Africa (Nigeria) and Asia (the Philippines) reviewed and confirmed the reliability of the approach.

The Questionnaire

A survey was administered to learners for completion via media platforms (Oluyinka et al., 2021). The information about the respondents focused on gender, age, and educational qualifications. The survey items or measurement indicators are related to the usage of LMS. Technical facilitating conditions has 5 measurement indicators including purposefulness perception and simple to use perception. Both information-reliability richness and satisfied beliefs have 4 measurement indicators. Continual intent to use LMS, the main direction of the study, has four as well.

Table 2 Factors and measurement indicators

The instruments and sources	Authors
Technical Facilitating Conditions (TFC)	Gupta et al. (2018), Oluyinka et al. (2021).
I have the necessary resources for online education (TFC 1).	
The connection to the internet, notebook tablet, or mobile at home is okay (TFC 2).	
For browsing, a relevant computer or smartphone is reachable (TFC 3).	
I think the housemates are ready to share their internet if requested (TFC 4)	
Connecting my device to the network and other equipment does not appear to be a problem for me (TFC5).	
Purposefulness Perception (PUP)	Abd Malik et al. (2021)
Our EMS is serving its purpose; the usage is continuous for me (PUP 1)	
EMS utilization justifies productivity enhancement (accessing assignments, materials assigned, etc.); utilization is continuous for me (PUP 2).	
The EMS improves my efficiency in teaching (PUP3).	
I hope adoption LMS is a never-ending usage for me because it is really helpful in acquiring lessons (PUP 4).	
I think usage of the system will still be very useful if continuously adopted (PUSE 5).	
Simple to Use Perception (SUP)	Solomon (2021)
Since LMS is not stressful to use, I anticipate continuing to use it (SUP 1).	
The system is understandable and simple in modification. I will keep using it (SUP 2).	
I might very well continue to use the model (EMS), because it is possible to collaborate with other learners (SUP 3).	
LMS helps in improving grammar and correcting compositions via the in-built plagiarism monitor in the system (SUP 4).	
Institutions employ various e-learning system and confirm that it is simple to become an adapter, frequent adoption is recommended (SUP 5).	

Table 2 Continued

The instruments and sources	Authors
Satisfied Beliefs (SB)	Liao et al. (2009).
I consider sustaining LMS use after the virus situation (SB1).	
Matches between professionals occur throughout the COVID-19 classroom context, I'm quite excited to use it in the future (SB2).	
I will use LMSs since they are such an essential source of academic resources for in-person sessions (SB3).	
Usage of LMS fits my studies program, in general continual usage confirmed in my case (SB4).	
Information-Reliability Richness (IRR)	Abd Malik et al. (2021).
I believe that my knowledge of the LMS compels me to keep embracing it (IRE 1)	
I think that having to use the EMS will enrich my expertise in delivering goals and outcomes (IRE 2).	
If I keep integrating LMS info with physical mode learning after the outbreak, it will improve my academic performance (IRE 3).	
It provides me with knowledge that is engaging and easy to understand. Therefore, continual usage is confirmed (IRE 4)	
Continual Intent to use LMS (CIUL)	Oluyinka et al. (2021).
I want to keep using our LMS rather than stop doing so (CIUL1).	
I will use it as frequently as possible (CIUL2).	
I will use it in my studies / work (CIUL3).	
Basically, my hopes for using an LMS were realized, and I want to continue enjoying the adoption (CIUL4).	

Table 3 Details on validity

Variables	Indicators	Loading>0.7	AlphaR	R_com	RhoA	AVE
Technical facilitation conditions	TFC2	0.860	0.701	0.763	0.842	0.683
	TFC3	0.761				
	TFC4	0.865				
	TFC5	0.896				
Purposefulness perception	PUP1	0.701	0.719	0.817	0.829	0.673
	PUP2	0.862				
	PUP 3	0.763				
	PUP4	0.905				
	PUP5	0.854				
Simple to use perception	SUP1	0.887	0.801	0.783	0.872	0.633
	SUP2	0.771				
	SUP3	0.700				
	SUP4	0.812				
Satisfied beliefs	SB1	0.906	0.896	0.823	0.874	0.800
	SB2	0.899				
	SB4	0.877				
Information-reliability richness	IRR1	0.792	0.808	0.856	0.819	0.730
	IRR 2	0.831				
	IRR 4	0.934				
Continual Intent to Use LMS	CIUL1	0.922	0.865	0.810	0.879	0.815
	CIUL2	0.898				
	CIUL3	0.890				
	CIUL4	0.909				

Validity and Reliability of the Instrument

Cronbach's alpha and a composite consistency value of 0.7 were adopted for the reliability of the instrument. The average variation of the number of items in a construct helped determine the validity of the items. The values were 0.5 above-average, and the loading factors were 0.6 higher than expected (Hair et al., 2019). Additionally, the elimination of the following items was recommended: TFC1 factor loading was 0.458, SUP5 factor loading was 0.505, SB3 factor loading was, and IRR3 factor loading indicated a value of 0.469.

The Pilot Study

A preliminary study was piloted to confirm the dependability of the items indicated. A total of 35 technical teachers from vocational and technical schools around Metro Manila, Philippines, were randomly selected. A new third-generation-friendly statistical app (Smartpls 3.3.9) was used, which confirmed that all the achieved coefficients of the measurement items were reliable using Cronbach Alpha above 0.70 (Hair et al., 2019).

Data Collection

An adapted form from Google was sent out to learners in higher institutions in Region III of the Philippines using apps for social communication (FB wall, WeChat, and WhatsApp status) by researchers to gather the needed data.

Adopted Software and Analytical Techniques

The SmartPLS version 3. Program was used to predict the factors that might influence continual LMS usage, multiple regression analysis and R-squares (variance explained) (Ringle et al., 2018). The analysis was based on the recommendation of a previous study using the PLS-modeling evaluation method (Hair et al., 2019).

Hypothesis Evaluation

A statistical software with a built-in estimator was to adopted to investigate the relationship between the independent and dependent variables (Hair et al., 2019). The model's predictive relevance for the LMS's continual usage even in the future was approximately 59 percent. Meanwhile, the variation explained (i.e., R^2) for technical facilitating conditions construct was approximately 45 percent, the information-reliability richness R^2 was approximately 51percent, purposefulness perception indicated a variance of 36 percent, and the satisfied beliefs R^2 suggested a 49 percent variation explained. All the variations explained in this study were based on the respondents' responses. The outcome was found to be aligned in accordance with past research (Ayodele et al., 2018). All the anticipated regressions were supported in this study. Simple to use perception regressed on continual intent to use LMS and *purposefulness perception* regressed on information-reliability richness based on the feedback from the respondents. Five independent factors regressed towards the dependent factor (i.e., continual intent to use) and four were noted significant at a probability value of .01, while the recommended value is $p < .5$ (Hair et al., 2019). Support for the teachers' opinion on the usability LMS is not that surprising since the study proved that most of the users are more conversant with technology (Valencia et al., 2021). More so, the report was found to have consistency with the study by Oluyinka (2016).

Results and Discussion

The findings reveal that information-reliability richness effects, purposefulness perception, technical facilitating conditions, and satisfied beliefs positively influence continual intent to use learning management system in higher education institutions particularly the institutes of business administration, education, and arts and sciences. Table 4 of this study shows a summary of the achieved output.

Table 4 A summary of the path coefficient statistics obtained

Regression/Dimensions paths				Sample Mean	Standard Deviation. Estimate	*t*-value	*p*-Values	Supported? Yes (Y)/NO (N)
H1	IRR	→	CIUL	0.290	0.098	2.859	.004	Y
H2	SUP	→	CIUL	0.012	0.093	0.159	.880	N
H3	PUP	→	CIUL	0.314	0.077	4.196	.000	Y
H4	TFC	→	CIUL	0.331	0.107	3.158	.001	Y
H5	SB	→	CIUL	0.250	0.096	2.591	.010	Y
H6	TFC	→	SB	0.577	0.086	6.700	.000	Y
H7	PUP	→	SB	0.419	0.098	4.311	.000	Y
H8	PUP	→	TFC	0.400	0.093	4.222	.000	Y
H9	PUP	→	IRR	0.150	0.094	1.531	.126	N
H10	SUP	→	PUP	0.430	0.098	4.318	.000	Y
H11	SUP	→	IRR	0.399	0.081	4.710	.000	Y

Note: Technical Facilitating Conditions (TFC), Purposefulness Perception (PUP) Simple to Use Perception (SUP), Satisfied Beliefs (SB), Information-Reliability Richness (IRR) and Continual Intent to Use (CIUL)

The outcomes indicated that technical facilitating conditions (TFC) have the biggest influence on satisfied beliefs (SB) and are posited to be the most significant with a *t*-value of 6.700; $p < .000$, accompanied by purposeful perceived notions (PUP) towards satisfied beliefs (SB) with a *t*-value of 4.311, $p < .000$. The simple-to-use point of view (SUP) and *purposefulness perception* (PUP) regressed on information-reliability richness (IRR), and purposefulness point of view (PUP) was justified with a *t*-value of 4.710; $p < .000$ and a *t*-value of 4.318; $p < .000$ correspondingly.

The attained value was (*t*-value < 1.531, $p > 0.126$). The inquiry into purposeful perception (PUP) regressed on the information-reliability richness (IRR), which indicates that purposefulness perception does not influence information-reliability richness (Hair et al., 2019). Support for 4 the teachers' opinion on the usability of LMS is not that surprising since the study proved that most of the users are more conversant with technology (Valencia et al., 2021).

Thus, two of the study's eleven (11) underlying assumptions were found to be unsupported. The first is "Simple to use perception of the users has a favorable influence on continual intent to use LMS after a pandemic" (H2). The continual intent to use LMS by the respondents is thus not positively affected by the simple to use perception of the users. The users do not mind whether the continued use of available LMS is simple to operate or not., The second assumption states that purposefulness perception influences information-reliability richness. On the contrary, information-reliability richness of an available LMS is not affected by the way users perceive its purpose. Valencia et al. (2021) noted in their study that users are already skillful in the use of technology. In achieving the objectives of this study for colleges or universities offering higher education, business administration, accountancy, marketing, management, and arts and sciences, the aspects of Liao et al. (2009) were integrated with information-reliability richness (IRR) and technical facilitating conditions (TFC). The relationship constructs were associated with information-reliability richness (IRR), simple to use perception (SUP), and purposeful perception (PUP). The influential constructs toward continual intent to use LMS (LMS) in the future include information-reliability richness (IRR), technical facilitating conditions (TFC), purposefulness perception (PUP), and satisfied belief (SB), all of which played an imperative part in the structural modeling of Continual Intent to use LMS even in the future.

The findings of this study are in line with earlier analyses of information-reliability richness, technical facilitating conditions, purposefulness perceptions, and satisfied beliefs in assessing the acceptance of LMS for continuity purposes. The positive relationships, as shown in Figure 2, show evidence for the continuous adoption of LMS even after pandemic (Alkhateeb & Abdalla, 2021; Oluyinka et al., 2021).

Conclusions and Implications

The positive outcomes on the relationship component of the study suggest the importance of obtaining computer access and gadgets, including an internet service, which foster resumption of LMS use in developing countries.

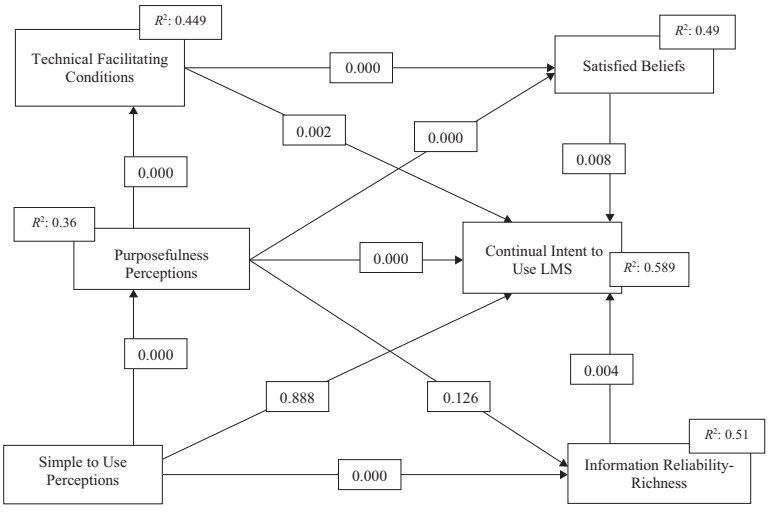

Figure 2 Structural equation modeling

A learning platforms system could be achieved even after the global crisis. Specific platforms which are made comprehensible for users promote better and more successful online teachings. The effectiveness signifies the importance of resources and items that boost the interest of learners in obtaining knowledge. In line with this, Cusipag et al. (2023) agree that successful online teaching contributes to job satisfaction and work-life balance Since face-to-face classes are now required, instructors can therefore enhance their teaching performance through e-learning platforms.

Recommendations

Future researchers may expand the limited time frame and degree programs used when conducting their own studies. The respondents were limited to instructors in education, business administration, accountancy, marketing, management, and arts and sciences. Hence other curricular programs may be included such as those in tourism, hotel and restaurant management, information technology, computer studies, allied medical courses, criminology, engineering, and others.

The TCT model was used in framing the CIUL model of this current study Future studies may include other theoretical models such as TAM and UTAUT. Moreover, this particular investigation is restricted to a set of respondents from other developing nations. Potential investigators might collaborate with teachers and learners from other nations or states. They may include issues that were included in this study.

Conflict of Interest

The authors declare that there is a conflict of interest in this research. One of the authors stopped communicating with the other authors when she was asked to submit her tasks and to contribute to the revisions suggested by the three reviewers.

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