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RURAL UNIVERSITY STUDENTS' CONTINUOUS USE OF ONLINE PROCTORED EXAMINATIONS

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ABSTRACT

The outbreak of the Covid-19 pandemic caused untold suffering and calamities. Many nations introduced national lockdowns as a way of curbing the spread of the virus. All services were halted except essential services. Unfortunately, higher education and training was considered non-essential and hence stopped. However, the academic project had to continue such that academic institutions had to find other means of operating. Online learning and online assessments were introduced and used during the pandemic. The purpose of this study was to explain rural university students' continuous use of online proctored examinations in the aftermath of the pandemic. The study used the Expectation Confirmation Model to develop the "Continuous Use of Online Proctoring Software Model" where the online proctored software was used to shadow the use of online proctored examinations. A cross-sectional survey was used to gather data from a sample of 335 respondents of which analysis was done using Partial Least Squares Structural Equation Modeling, with the help of SmartPLS version 3. The developed model explained 69,2% of the variance in continuous use of online proctored examinations. These results showed that rural university students were in favor of continued use of proctored examinations. The study recommended that university authorities should consider the continued use of online proctored examinations though this comes at an increased cost of students' access to relevant devices and connectivity.

Keywords: *Continuous Use, Online Proctored Examinations, Online Proctoring Software, Rural University Students, Expectation Confirmation Model*

1. INTRODUCTION

Worldwide, the majority of nations put in place national lockdowns to stop the spread of COVID-19 in 2020. All services, other than essential services, were stopped. Unfortunately, further education and training were not regarded as an essential service (1, 2). All universities had to shut down. The Department of Higher Education and Training urged universities to transition to online education. It was thought that course material and continuous assessment would be covered through online learning. Universities anticipated that students would be called for writing final examinations that were proctored on-site. However, as COVID-19-related mortality continued to rise, the countrywide lockdown lasted longer than anticipated. Universities were compelled to employ alternative assessment methods. Online assessment became the next best choice of assessment.

Online examinations presented a lot of difficulties because it was a new technology in most universities in developing countries (3-5). Reisenwitz (5) claimed that conducting online tests presented difficulties in providing feedback to students. According to Dendir and Maxwell (3), it is challenging to effectively gauge students' progress over time using online tests. It is challenging to ensure that students are taking examinations in an environment similar to that of on-site proctored examinations environment. Parks, Lowry (4)

highlighted widespread academic dishonesty as the major problem with online tests.

Academic dishonesty is the practice of misrepresenting other students' work as one's own, helping another student to do the same, or using any material that will benefit the student in the examination (3). Academic dishonesty is common in unsupervised, distant online examinations, according to several research studies. (3, 5, 6). In unmonitored distant online tests, academic dishonesty was demonstrated by Herdian, Mildaeni (6), who also promoted the use of online proctoring software (OPS) as a solution to the issue. Numerous studies backed the use of OPSs in executing online examinations, which contributed to their successful adoption in developed nations (7-9). OPSs are in their infancy stages in developing countries. Some universities that have used OPSs have since indicated the reduction of academic dishonesty as an advantage of using the software (5).

According to Bhattacherjee (10), organizations can only fully reap the rewards of an information system if users continue to use it. Chibisa and Mutambara (11) backed this up as well, pointing out that educational institutions can only gain from educational technologies if students, teachers, and support personnel continue to use them. It can be argued that institutions can only achieve a decrease in academic dishonesty in remote online examinations if they continue to use OPSs, (10, 11). Ye, Lee (12) and Wang, Lin (13) stated that users' post-acceptance perceptions of the system are what determine whether they continue to utilize the information system. The adoption of OPSs and, consequently, their acceptance in developed countries, was the result of numerous studies. Yet, studies that focus on the factors that influence university students to continue using OPSs in developing countries remain dearth.

The experience of online proctored examinations may have brought new thinking to stakeholders. Even though administrators required students to use OPS during the Covid-19 pandemic, it is unclear whether students are still interested in writing examinations online where the OPS is used now that the pandemic situation has improved. Online education is most likely to continue after the pandemic (12, 13). Based on the analysis of Ye, Lee (12) and Wang, Lin (13), the use of OPS is likely to continue after the pandemic. Therefore, research on the factors that motivate students to use OPSs is important. Consequently, discussing student viewpoints and their desire to keep using OPS will significantly contribute to the long-term growth of online education.

In order to better comprehend the current scenario, it is essential to pinpoint the underlying elements driving students' decision to keep using online proctored examinations which are written using OPSs. To fill this gap, this study extended the Expectation Confirmation Model to explain rural university students' continuous use of online proctored examinations. The results of this study could aid universities in developing nations in better comprehending the issue at hand and generating workable solutions. The results of this study might assist university administrators in reducing academic dishonesty and enhancing the integrity of their examinations and institutions by successfully using OPSs.

The next section will give a concise literature review discussing online proctoring software and the theoretical framework. This is followed by a detailed discussion of the conceptual framework used in the analysis of the problem. The methodology and presentation of results follow thereafter. The paper ends with discussion, theoretical contributions, practical implications, conclusions, and limitations of the study.

2. LITERATURE REVIEW

2.1 Online Proctoring Software

Online proctoring software (OPS), mimics the characteristics of a traditional test room with a proctor watching remotely and has long been regarded as one of the best online proctoring choices (3). By observing and limiting options for action and movement, OPS simulates exam hall settings remotely (14). OPS confirms each candidate's identification as well as their isolation from other people and resources that can improve their performance (3). Handling textbooks, mobile devices, or wearing earplugs could be viewed as a severe infringement of exam rules. Some services demand that users install software on their devices to limit access to specific files, programs, and websites. For the program to be able to manage webcams and

microphones, which keep an eye on the environment while the examination is taking place, authentication is typically required (5). Keyboard clicks, network traffic, and computer memory consumption are examples of additional information. Monitoring may be done in real-time, retrospectively through recordings, or both, and may involve a human or an algorithm that the examinee is unaware of and unable to observe (4). Before the examination, candidates must use their webcams to scan the testing area (typically a bedroom, kitchen, or another private area within their house).

Online proctoring software has provided university administrators with several benefits. For example, OPS give students the opportunity of writing exams from the comfort of their homes and still under supervision (14). OPS allows examiners to use diverse assessment techniques such as multiple choice, open-ended questions, matching, theory, and so on (14). Additionally, OPS can manage the timing of examinations and proctor interaction during exams (5). According to Reisenwitz (5), if an OPS is used properly, academic dishonesty can be minimized, even though it may be common in open-book examinations. Several studies (6, 13, 14) confirmed the findings of Reisenwitz (5), that OPSs help reduces academic dishonesty.

2.2 Theoretical Framework

The Expectation Confirmation Model (ECM) was employed in this study to explain and forecast the continued usage of OPS by rural university students. The ECM was utilized in this study since it was thought to be reliable in describing users' post-acceptance behavior (11, 13). Furthermore, Mutambara and Chibisa (2) observed that the ECM enables the researcher to include external context-related variables to contextualize the model to explain the technology under consideration. Additionally, the ECM has been extensively used to predict the post-adoption behavior of users of different information systems (10, 11, 15, 16). For instance, Saima, Rahman (15) used the ECM to explain the continuous use of mobile financial services in Bangladesh. The ECM was extended by Al-Sharafi, Al-Qaysi (16) to explore the sustainable use of mobile payment contactless technologies. The ECM has been accepted in explaining users' continuous use of educational technologies (11, 17).

The ECM was developed by Bhattacherjee (10) to explain users' continuous use of information systems. Three latent variables that explained and predicted users' willingness to continue utilizing information systems were identified by the model: expectation confirmation of expectations, perceived usefulness, and satisfaction (10). Before using an information system, users have initial expectations of the system. If the system performs better than those expectations, the expectations are confirmed; otherwise, there is disconfirmation (11). Continuous use is influenced by confirmation or disconfirmation through satisfaction or dissatisfaction (15). Users' perceptions of the usefulness of the information system are directly impacted by confirmation or disconfirmation (12). Continuous use and satisfaction are both influenced by perceived usefulness (10, 13). Figure 1 shows the ECM.

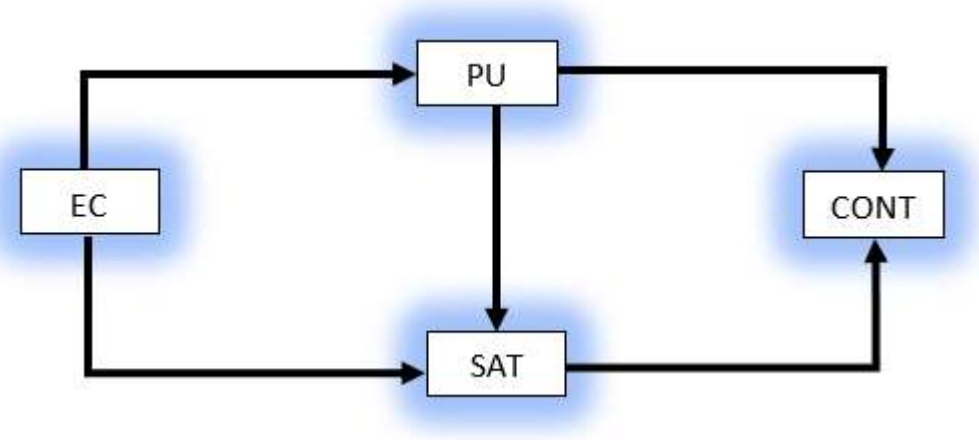

Figure 1: Expectation Confirmation Model

2.3 The Conceptual Framework and Model Hypotheses

In this study, the ECM is extended by the addition of three more constructs: institutional support (InS), and question quality (QQ) resulting in a new model which we named "The Continuous Use of Online Proctoring Software Model". This study postulates that expectation confirmation (EC), question quality, institutional support, and perceived ease of use have a direct influence on satisfaction (SAT) and perceived usefulness (PU). Perceived usefulness has both a direct and indirect impact on continued use (CONT) via satisfaction. This is illustrated in Figure 2.

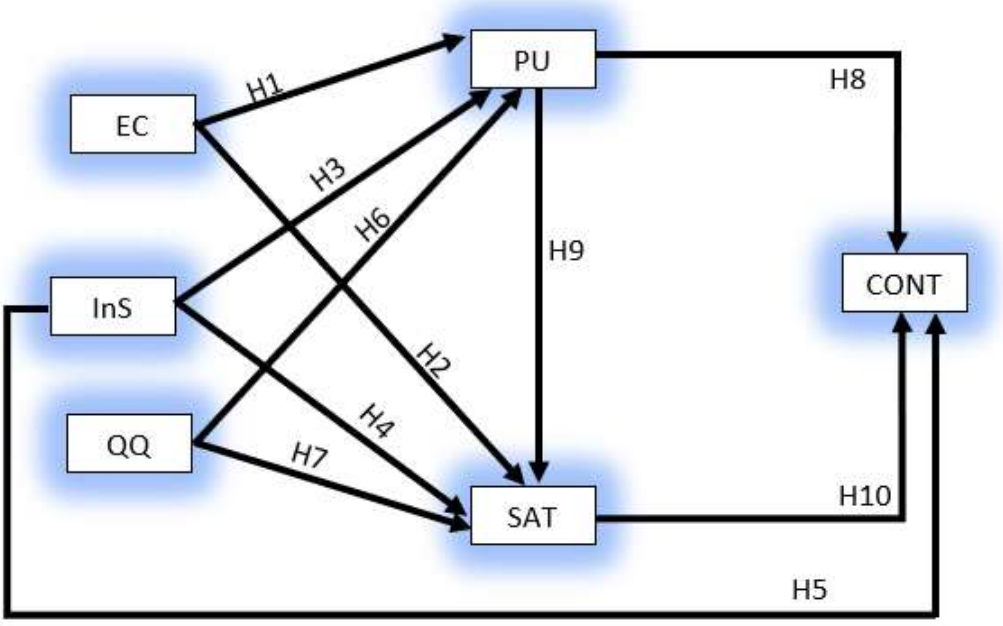

Figure 2: Conceptual framework

2.4 Expectation Confirmation (EC)

In this study, EC is defined as the extent to which a student's experience with OSP is in line with their initial expectation. Bhattacherjee (10) asserts that a user's initial assessment of the usefulness of a new technology may be low due to a lack of familiarity with it. In this scenario, after the initial use, the user will modify or confirm their initial perception. Confirmation takes place when the experience meets or exceeds the initial expectation level, which inevitably results in the achievement of user satisfaction. Alam, Mahmud (18) emphasized that EC influences whether a user thinks an IS is useful or less useful. Several studies have confirmed the positive influence of EC on PU (10, 12, 13) and on SAT (2, 10, 11). One could contend that if university students' initial expectations of OPS are confirmed, they will be satisfied and consider OPS to be useful.

Therefore, the hypotheses of the construct EC are as follows:

H1: EC has a positive influence on PU.

H2: EC has a positive influence on SAT.

2.5 Institutional Support (InS)

Institutional support refers to the facilities that universities offer their students. In other studies institutional support is also called "perceived resources" (19). In this study however, institutional support extends beyond just providing resources; it also includes technical support for students who

need it during proctored examinations. Institutional support affects both user satisfaction and perceived usefulness (11, 19). Perceived resources (InS) have a favorable impact on perceived usefulness (20). Students will be satisfied with the OPS if they believe that the institution is providing them with all the assistance, they need to use it.

It is therefore hypothesized that:

H3: InS has a positive influence on PU.

H4: InS has a positive influence on SAT.

H5: InS has a positive influence on CONT.

2.6 Questions Quality (QQ)

Question quality refers to the students' perceptions of how the examination questions are presented by the system. It also pertains to the questions themselves, specifically if they are straightforward and free of ambiguity. In most studies, question quality is assessed as part of content quality (21, 22). Castiblanco Jimenez, Cepeda García (22) noted that content design is a crucial element in determining the effectiveness of e-learning. According to Castiblanco Jimenez, Cepeda García (22)'s evaluation, it can be argued that students' satisfaction and continued usage of OPS are significantly influenced by the format and quality of the questions. Almaiah, Jalil (21) discovered that content quality affects both satisfaction and perceived usefulness of the software.

Therefore, the hypotheses of the construct question quality are as follows:

H6: QQ has a positive influence on PU.

H7: QQ has a positive influence on SAT.

2.7 Perceived Usefulness (PU)

In this study, post-adoption perceived usefulness is defined as the student's subjective opinion that using OPS will help them write the examination well. The body of knowledge on the impact of PU on continuous use has yielded conflicting outcomes (10, 11, 18). Some scholars said that PU and continuous use are strongly correlated (10, 18). On the contrary, Chibisa and Mutambara (11) noted that while PU does not directly affect continued use, it does so indirectly through satisfaction. Numerous studies examined and validated the beneficial effect of PU on SAT (2, 12, 13). This study assumes that university students will be satisfied with OPS and wish to keep using it if they believe it will help them write examinations well.

Therefore, the hypotheses of PU are as follows:

H8: PU has a positive influence on CONT.

H9: PU has a positive influence on SAT.

2.8 Satisfaction (SAT)

In this study, student satisfaction is described as the degree to which students' initial expectations of OPS are fulfilled. Evaluating how students view their usage of OPS is crucial to understanding their satisfaction. When their experience of using OPS matches their initial expectations, students are satisfied (10, 11). One of the important factors in determining OPS success is how satisfied students are with the software (12). Therefore, it is important to look into how satisfied students are with OPS. Additionally, pertinent research demonstrated that because of the unique conditions brought on by the COVID-19 pandemic, students who had never taken an online examination before were forced to do so because it was an unavoidable transition from the on-site assessment form to this brand-new assessment mode. Previous studies have looked at and verified the beneficial impact of satisfaction on continuous use (10, 11, 13). According to Mutambara and Chibisa (2), the strongest single indicator of continuous use is satisfaction.

Therefore, the hypothesis of SAT is as follows:

H110: SAT has a positive influence on CONT.

2.9 Continuous Use (CONT)

Constantly choosing the same thing is known as having continuous use intention, and it can be used to forecast persistent use behavior (12). It is a behavioral intent that leans toward a consumer's inclination to use a product or service repeatedly after the first use (10). The fact that it keeps happening shows that users are satisfied with the product or service and are likely to stick with it (12). As a result, the long-term viability and ultimate effectiveness of this technology depends largely on the user's continued long-term use. Additionally,

after attempting OPS, persistence is a crucial sign of how long users will continue to utilize OPS technologies. This study used continuous usage intention to learn to ensure that students accepted OPS.

3. METHODOLOGY

3.1 Research Design

This study followed a survey design which allows the researchers to use a questionnaire to collect data (23). Large amounts of data may be gathered quickly at a low-cost using questionnaires. A cross-sectional survey was employed in this study to gather data from university students in a rural location. A survey design allowed the researchers to provide a quantitative description of the attitudes or opinions of university students by studying a sample of the population.

2.10 Participants

All the participants in this study were drawn from a rural based university. Using stratified sampling, all the students who used OPS were grouped according to their faculties. Grouping students in the same faculty in the same stratum minimized estimation errors. Four strata were formed. Simple random sampling was then used to select 100 students from each stratum, giving a sample size of 400 to whom questionnaires were administered. Of this sample, 335 of them were valid.

According to Hair Jr, Hult (24), the minimum sample size for a reflective model should be 10 times the number of items of the latent variable with the most items (24)In this study, the latent variable with the most items was Hair Jr, Hult (24) expectation confirmation which had 5 items. Following Hair Jr, Hult (24)‘ suggestion, the minimum sample size for this study should at least 50. The sample size (335) of this study far exceeds the suggested minimum. The majority of the participants 213 were females, while 122 were males. The range of students’ age was 18 to 32. A total of 273 students were from rural areas while the remaining 62 were from urban areas.

3.2 Instrument Formation

This research model consists of seven variables, namely EC, InS, PU, SAT, QQ, and CONT. To ensure the reliability and validity of the scales, all items were adapted from past studies and modified to fit the setting of the current study. The items of EC, PU, SAT, and CONT were adapted from (18, 19). The items of InS were derived from (20). Meanwhile, all items were measured using a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). All participants filled in the questionnaire based on their experiences. After constructing the questionnaire, expert validity was sort from three experts in the field of educational technologies. A pilot study with 50 students was conducted to assess and confirm the validity and reliability of the instrument. The instrument measured a 0.79 Cronbach index for reliability and a KMO index for validity greater than 0.5.

3.3 Analysis Technique

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze data by making use of the SmartPLS 3 software. The PLS-SEM was preferred to Covariance-Based Structural Equation Modeling (CB-SEM) because the CB-SEM requires a lot of assumptions to be met before model estimation (24). Some of the assumptions, for example, the normality test are difficult to meet using data from Likert scales (25). Additionally, the CB-SEM is used for theory confirmation while the PLS-SEM is used for developing theories (24). This study seeks to develop a model that can be used to predict and explain students’ continuous use of OPS. According to (12), the main function of PLS-SEM is the prediction of the target variable, in our case, rural university students’ continuous use of OPS.

Hair Jr, Hult (24) suggested a two-stage analysis approach to the reflective model. The measurement model is assessed first, then the structural model (24). The measurement model assesses the relationship between the latent variables and their items, while the structural model assesses the relationship among the latent variables. This study followed this two-step approach.

4. RESULTS

4.1 The Measurement Model

Convergent and discriminant validity are employed to assess the goodness of fit of the measurement model (25). Indicator reliability, internal consistency, and extracted average variance (AVE) are used to evaluate convergent validity (24). The outer loadings on the measurement model should, as a general rule, be more than 0,7 (24). All of the outer loadings were more than 0,7, as shown by the results in Figure 3, demonstrating satisfactory indicator reliability. The internal consistency is evaluated using composite reliability (CR). CR has a cutoff value of 0.7 (25). All of the CR values in Table 1 were greater than 0,7, which supports the model's internal consistency. Hair Jr, Hult (24) suggested that the threshold value of the AVE is 0,5. Table 1 shows that all the AVEs were higher than 0,5. These results confirmed the convergent validity of the model.

Table 1: Measurement Model

Construct	Composite Reliability	Average Variance Extracted
Continuous Use	0,927	0,763
Expectation Confirmation	0,872	0,630
Institutional Support	0,913	0,725
Perceived Usefulness	0,892	0,676
Question Quality	0,892	0,805
Satisfaction	0,898	0,688

Discriminant validity is assessed using the Fornell and Larcker criterion (24). Discriminant validity is attained when the average variance shared by each construct and its item is greater than the variance shared by the item and other constructs (24). The results in Table 2 show that the square root of the AVE value for each construct was higher than the highest correlation for any other latent variable. These results validated the measurement model's discriminant validity. Convergent and discriminant validity tests of the measurement model were successful overall.

Table 2: Fornell And Larcker's Criterion

	Continuous Use	Expectation Confirmation	Institutional Support	Perceived Usefulness	Question Quality	Satisfaction
Continuous Use	**0,873**					
Expectation Confirmation	0,763	**0,794**				
Institutional Support	0,733	0,663	**0,851**			
Perceived Usefulness	0,772	0,650	0,690	**0,822**		
Question Quality	0,624	0,568	0,593	0,577	**0,897**	
Satisfaction	0,488	0,430	0,495	0,566	0,592	**0,830**

4.2 The Structural Model

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This study followed the 5-step reflective model analysis proposed by Hair Jr, Hult (24).

Step 1: variance inflation factor (VIF)

This is used to ascertain the presence of collinearity issues. The results in Table 3 show that all the VIF values were lower than 4, indicating the absence of collinearity.

Step 2: Path coefficients analysis

The bootstrapping procedure with 5000 subsamples suggested by Hair Jr, Hult (24) was used to assess the significance of the path coefficients. Table 3 and Figure 3 show the results. The results in Table 3 show that seven out of 10 hypotheses were accepted.

Table 3: Structural Model Results

Path	Std Beta	t-value	p-value	Decision	VIF	f^2
Expectation Confirmation -> Perceived Usefulness	0,343	6,445	0,000	Accepted	1,786	0,144
Expectation Confirmation -> Satisfaction	-0,051	0,687	0,492	Rejected	2,136	0,002
Institutional Support -> Continuous Use	0,320	5,895	0,000	Accepted	2,146	0,154
Institutional Support -> Perceived Usefulness	0,462	7,959	0,000	Accepted	1,786	0,261
Institutional Support -> Satisfaction	0,074	0,797	0,426	Rejected	2,388	0,004
Perceived Usefulness -> Continuous Use	0,468	10,067	0,000	Accepted	2,243	0,317
Perceived Usefulness -> Satisfaction	0,322	3,764	0,000	Accepted	2,279	0,080
Question Quality -> Continuous Use	0,194	3,105	0,002	Accepted	1,938	0,063
Question Quality -> Satisfaction	0,391	5,220	0,000	Accepted	1,747	0,152
Satisfaction -> Continuous Use	-0,050	1,173	0,241	Rejected	1,760	0,005

Figure 3 shows the structural model in which expectation confirmation influences perceived usefulness and satisfaction. Institutional Support and question quality predict satisfaction and continuous use. Institutional support influences perceived usefulness, which in turn affects satisfaction and continuous use.

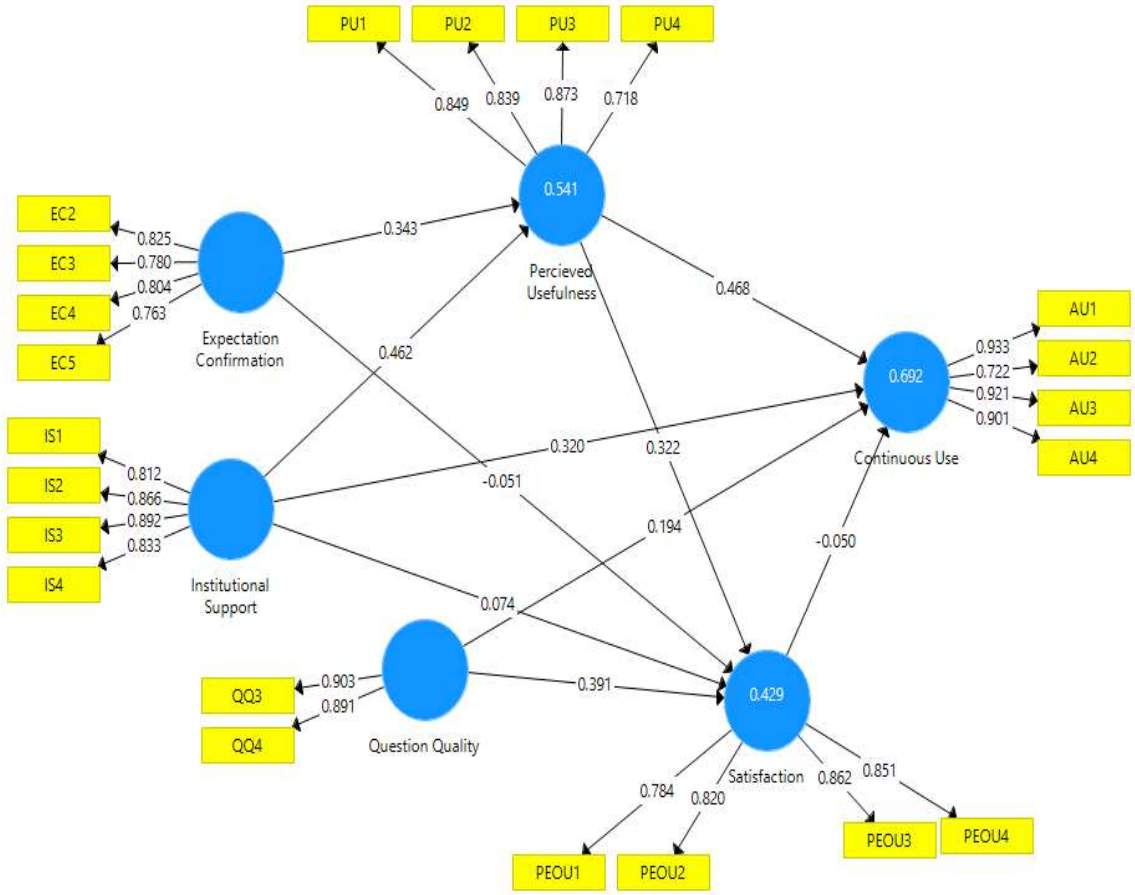

Figure 3: Structural MODEL

Step 3: Assessment of effect size

The f^2 values are used to assess the effect size. The f^2 of 0.02, 0.15, and 0.35 suggest small, medium, and large effect sizes, respectively (26). The results in Table 3 show that expectation confirmation to perceived usefulness (0,144), Perceived usefulness to satisfaction (0,080), and question quality to continuous use (0,063) had a small effect size. Question quality to satisfaction (0,152), Perceived usefulness to continuous use (0,317), Institutional support to perceived usefulness (0,261), and institutional support to continuous use (0,154) had medium effect size.

Step 4: Assessment of explanatory power

The R^2 values are used to assess the explanatory power of the model. The R^2 value gives the total contribution of model constructs on the explained variable. R^2 values of 0.67, 0.33, and 0.19 are categorized as substantial, moderate, and small, respectively. Figure 3 shows the R^2 values of the model. The R^2 of satisfaction (0,429) and perceived usefulness (0,541) are categorized as moderate, while that of continuous use (0,692) is regarded as substantial.

Step 5: Assessment of predictive relevance

To assess the predictive relevance of the model, the Q^2 values were used. All the Q^2 values were greater than zero. These results imply that the model can be used to explain rural university students' continuous use of online proctored examinations.

5. DISCUSSION

The purpose of this study was to explain rural university students' continuous use of online proctored examinations. It used the extended Expectation Confirmation Model, whose

underlying was the online proctoring software. The model explained 69,2% of the variance in continuous use. Contrary to the results of Bhattacherjee (10) and those of Ye, Lee (12) who independently found that expectation confirmation had an effect on satisfaction, our results showed no relationship. This result was unexpected given that earlier research had supported the beneficial effect of expectation confirmation on satisfaction. The study did, however, corroborate other research (10, 11) that found a strong correlation between expectation confirmation and perceived usefulness. These results imply that students' initial expectations of the usefulness (PU) of online proctoring software were confirmed. However, students were not satisfied (SAT) with online proctoring software. The fact that the study's participants were solely exposed to the use of online proctoring software during the online examinations may be one explanation for this finding. They seemed dissatisfied because they were not accustomed to the online proctoring software. To boost student familiarity with online proctoring software, universities are encouraged to continue using it even during continuous assessments during the semester.

In line with the findings of Al Amin, Razib Alam (19) and (2), the results showed that institutional support influence perceived usefulness and continuous use. Students' perception that using OPS will enable them to write their examinations effectively is influenced by the university's provision of support. To enable students to use online proctoring software, universities are encouraged to provide laptops and data packages. Universities are also recommended to have a help desk staffed by experienced personnel to assist students with any issues they may have with the software used for online proctoring. Students will probably continue to use online proctoring software if they feel that the university provides support.

In our research, institutional support did not affect satisfaction thereby contradicting the results of Khan, Egbue (20), who emphasized the significance of institutional support on satisfaction. Our findings imply that university students were dissatisfied with the assistance they received from the institution. This discovery may have been caused by the institution ceasing to give students the data bundles they had been giving them at the peak of the COVID-19 pandemic. To encourage the continued use of online proctoring software, universities should increase student satisfaction with it. To do this, cellular network providers and universities should collaborate to make online proctoring software zero-rated, which will cut down on the amount of data that students must consume to complete their examinations.

Congruent to the results of Castiblanco Jimenez, Cepeda García (22) and Almaiah, Jalil (21), question quality had a positive significant influence on continuous use and satisfaction. These findings suggest that a key factor in students' satisfaction and continuous use of online proctoring software is the question design. It is advised that lecturers carefully plan their examination questions to promote the use of online proctoring tools. Students will get more nervous in response to ambiguous questions, which the online proctoring program may misinterpret as academic dishonesty. As a result, the continued usage of online proctoring software will suffer.

Satisfaction and continued use were found to be influenced by perceived usefulness. These results supported the findings of this research (2, 13). Students' satisfaction and continued use of OPS are affected by their conviction that utilizing OPS will help them to write the examination well. Student satisfaction with online proctoring software can rise as a result of a student's post-adoption positive belief in the utility of the online proctoring software. This belief can result in a positive attitude towards an improved examination writing experience. Developers of online proctoring software should focus on adding features that will enhance the platform's perceived usefulness among students. For instance, they can design the system to function offline and submit the images whenever there is an internet connection. This will be very helpful for students in rural areas where there are erratic network connections.

It was surprising to find no significant influence of satisfaction on continuous use irrespective of the fact that several prior studies validated and confirmed the relationship (10-13). This calls for more research on students'

satisfaction with online proctoring software to get a clear understanding of this relationship.

6. THEORETICAL CONTRIBUTIONS

Two of the five assumptions of the Expectation Confirmation Model, satisfaction to continuous use and expectation confirmation to satisfaction, were not supported. Given that the Expectation Confirmation Model was developed more than two decades ago, these findings can be utilized as a starting point for the discussion on its applicability in explaining users' continuous use of information systems in the current era. This study also found that external variables to the Expectation Confirmation Model can have a direct influence on continuous use. Future studies can find context-related constructs that directly influence the continuous use of the information system in question.

7. PRACTICAL IMPLICATION

There were four useful implications of this study. First, for students to get used to it, universities are encouraged to employ online proctoring software during continuous assessments in the course of the semester since user satisfaction increases with information system familiarity. Second, Institutional support influences perceived usefulness and continuous use. Institutions must provide students with laptops, data bundles, and a help desk to assist with problems relating to online proctoring software during examinations. Universities can also collaborate with mobile network providers to make online proctoring software websites zero-rated. Third, because question quality affects continued use, instructors are encouraged to create examination questions that are crystal clear and lacking in ambiguity. Fourth, to increase the functionality of their product, online proctoring software developers should incorporate more features that make rural university students perceive the software in good standing since perceived usefulness affects satisfaction and continuous use.

8. CONCLUSION

The purpose of this study was to explain rural university students' continuous use of online proctored examinations with online proctoring software as the underlying technology. It used the extended Expectation Confirmation Model. The constructs incorporated into the extended model were 'institutional support' and 'question quality'. The new model explained 69,2% of the variance in rural university students' continuous use of online proctoring software. The study postulates that continuous use and perceived usefulness are influenced by institutional support. Expectation confirmation has an impact on perceived usefulness, which in turn affects satisfaction and continued use. Question quality influences satisfaction and continuous use. Owing to the results of this study, universities are urged to provide students access to devices that support online proctoring software. In the same vein, provision of data bundles used for online proctored examinations to increase its widespread use should be encouraged.

9. LIMITATIONS AND FUTURE STUDIES

The results of this study should be considered in light of its limitations. This study was carried out at a rural university in a developing country. The transferability of these results to other universities should be done with caution. It will be interesting to see similar studies conducted in other settings other than rural settings and compare the results. Although satisfaction was found not to influence the continuous use of online proctoring software in this study, future studies need to focus more on factors that influence university students' satisfaction with online proctoring software vis a vis online proctored examinations. Researchers are also encouraged to develop a new model that can be used to explain the user satisfaction with online proctoring software.

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