EFFECT OF FACEBOOK LEARNING ENVIRONMENT ON THE LEARNING PROCESS AMONG AEC UNIVERSITY STUDENTS DURING COVID-19 PANDEMIC: THE MEDIATING ROLE OF PSYCHOLOGICAL CAPITAL

N. Gambo, I. Musonda

Centre of Applied Research and Innovation in the Built Environment (CARINBE), Department of Construction Management and Quantity Surveying, Faculty of Engineering and Built Environment, University of Johannesburg (SOUTH AFRICA)

Abstract

The outbreak of COVID-19 has adversely affected university students' learning process, especially in developing countries like Nigeria. Consequently, many academic institutions have adopted online platforms, some being social learning networks and others not. Therefore, the current study aimed at assessing the mediation effect of psychological capital on the Facebook learning environment influencing the learning process among university Architecture, Engineering, and Construction (AEC) students during the COVID-19 Pandemic in Nigeria. The study is quantitative in design, and data were collected from the students of AEC-related courses using a structured questionnaire. The Baron and Kenny's causal steps were adopted to assess the mediation effect of psychological capital (PsyCap) on Facebook learning environment factors influencing AEC University students learning process. A total of 385 samples were collected and analyzed using Warp 7.0 PLS-SEM software. The study results indicated a small effect size between the Facebook learning environment and AEC students' learning process, thus implying that the frequency of using the Facebook learning environment tended to affect AEC university students learning process in Nigeria, and PsyCap mediates the relationship between the Facebook learning environment and students' learning process. This implies that students with high PsyCap learn more and thus improve their learning process. The study concluded that PsyCap minimizes the effects of Facebook learning environments on the AEC students' learning process. The study is limited to students in the AEC-related courses in Nigerian universities. Therefore, the study recommended further studies on the other social media learning platforms that affect the learning process and the study's extension to other universities offering AEC courses for more comprehensive results.

Keywords: Facebook, psychological capital, learning process, AEC students, Nigeria.

1 INTRODUCTION

The learning process in AEC-related subjects has been promoted to enhance quality and engage students with materials, particularly the social media online materials and collaborating such as the Facebook learning environment [8]. However, the Facebook platform is a learning platform embedded in planned activities that are not explicitly designated as learning but contain a vital learning element [11]. The outbreak of COVID-19 affected the lives of all sections of society as people were asked to self-quarantine in their homes to prevent the spread of the virus. The lockdown had severe implications on the learning process of AEC university students globally, resulting in psychological problems including frustration, stress, and depression. Idleness among AEC university students, especially in developing countries, forces the students to engage in social media learning environments like Facebook for learning new things, chatting, and interacting among colleagues [13]. However, many public institutions often do not have formal online learning systems to facilitate student communication, especially in developing countries. Therefore, AEC university students in developing countries engaged primarily in the Facebook learning environment; the students spent from 1-5 hours daily learning, chatting, and communicating with friends.

The Facebook learning environment incorporates 'non-formal active learning' into all the AEC teaching activities, which means students engaging with Facebook uncensored materials that usually portrays the views of the authors, that disrupt the formal censored learning process of most especially AEC university students that require practical experience of their courses [11]. In addition, [9] described that the most widely used learning environment in developing countries is Facebook. Learning is the relatively permanent change in a person's knowledge or behavior due to experience. Therefore, learning is a transformative process of taking in information that transforms understanding and builds the actions

when assimilated and mixed with what students have experienced [8]. Moreover, [11] stated that the Facebook platform created a non-active learning environment that distracts students' attention, disrupts learning, and disorganizes students' knowledge. A different study by [7] described that the learning process on any social media network provides various feedback on the search, which tends to confuse students and cause imbalance. But [8] added that those platforms do not motivate the students to learn the core AEC subject matters but encouraged chatting on current social events. However, [8] argued that the most crucial factor in engaging the AEC university students' use of Facebook platforms is the frequency of social and political events being the subjects of daily discussions among the students in developing countries during the COVID 19 Pandemic lockdown.

Learning process among different categories of students is a difficult task; for example, in the Netherlands, [13] conducted a study on the use of Facebook platforms as a means of instruction among 459 secondary school teachers in the area of teaching in humanities, the social, and the natural sciences. The study tests the concept that non-formal platforms would be 'naturally allied' with the psychological capital for self-regulated learning (SRL). The results also indicated that students with high psychological capital show more understanding of the circulated information on the Facebook platform. Psychological capital refers to a set of resources an AEC university student use to help improve their learning process, improve learning performance on the subject, and succeed [4]. Hence, psychological capital resources include self-efficacy, optimism, hope, resilience, etc. Moreover, [3] stated that using Facebook platforms used for instructions in classrooms opposed the best practices and guides that continue to discredit the learning process of most AEC university students over the years. [5] added that many education institutions usually adopt these developments into their learning system and disregards the disruptive nature of the platform on the AEC learning process. Therefore, the Facebook platform distracts students' attention from learning the essential concepts of learning relating to AEC subjects. [8] asserted that the platforms do not always connect with experts on topics of interest. In contrast, [8] argued that the most important aspects of a Facebook platform disrupt students' research processes and the platform distracts learning management systems and visualization of processes.

Therefore, this study aims to assess the mediating role of AEC university students' psychological capital on the students' use of Facebook learning environment influencing the learning process among AEC university students in Nigeria to enhance quality learning of AEC-related subjects among the students.

The objectives of this study are:

- To investigate the direct effect of the Facebook learning environment on the learning process among university AEC students in Nigeria during the COVID-19 pandemic.
- To assess the mediation role of psychological capital (PsyCap) on the Facebook learning environment influencing the learning process among AEC university students in Nigeria during COVID-19 Pandemic.
- To develop a mediation model for the relationships among the Facebook learning environment, psychological capital, and learning process among AEC university students in Nigeria during COVID-19 Pandemic.

2 LITERATURE REVIEW

2.1 The learning process and AEC education

The AEC learning process is where students acquire new knowledge, skills and ultimately influence their attitudes, decisions, and actions. One of the essential parts of the learning process is attention, which means attention during learning is the most crucial process of acquiring knowledge and skill. Attention is the notice or taken of something or judgment that is vital to learning [9]. But [7] argued that the most crucial factor of the learning process is memorizing learned subjects. Memory is a complex process that involves receiving, using, storing, and retrieving information. The main memory systems are short-term memory, working memory, and long-term memory. Also, [4] viewed that understanding language and instruction is an essential component of learning. Language is the medium of communication that comprises visual words structured and conventional and is conveyed by either speech, writing, or gesture. At the same time, the organization is an act of establishing something [5]. In addition, [8] viewed graphomotor and higher-order Thinking (HOT) as the most critical aspects of the learning process. Graphomotor skills are those skills necessary for students to write something successfully. There are five skills associated with graphomotor: visual and perceptual, orthographic coding, motor planning and execution, kinesthetic feedback, and visual-motor coordination.

2.2 Facebook learning environment

Facebook is currently considered the most popular platform for online social networking among university students [8]. Facebook is a website that allows users to sign-up for free profiles, to connect with friends, colleagues, or people they do not know online. It will enable users to share different contents like articles, pictures, videos, etc. [6]. However, [9] reported that 94% of university students are active Facebook users, spending an average of 60-90 minutes online each day communicating with a friends list of 150–200 people. Similarly, [11] conducted an extensive survey on university students from universities in developing countries indicated that 94% of students use Facebook.

The factors influencing the Facebook learning environment are that it complicates the student's mental capacity development. The platform disrupts physical collaboration, discussion among peers, and AEC university students use the platform to obtain social or political information. AEC university students form groups on Facebook and post social and political questions to get feedback from peers hence disrupting the learning process [9]. Facebook distract convenience and quality-oriented supplement to their traditional on-campus courses and [9] viewed that Facebook is not a comfortable learning platform for students. It distracts collaboration among students, which complicates the learning process.

2.3 Moderating role of psychological capital

Studies in the past described the negative effect of the Facebook platform on the learning process and the performance of students [8]. However, some studies concluded that students with high psychological capital (PsyCap) utilize the Facebook learning environment to enhance their learning process [9]. Moreover, Psychological capital refers to a student's set of resources to facilitate his learning process [8; 9]. According to [14], psychological capital is influenced by self-efficacy, optimism, hope, and resilience.

Psychological Capital has gained prominence as an essential construct in education and learning research, which is a vital factor for leadership development and influence. Therefore, PsyCap is an individual's positive psychological state of development and is characterized by having confidence (self-efficacy) to take on and put in the necessary effort to succeed at the learning stage, making a positive attribution (optimism) about succeeding in learning; persevering toward goals and, when necessary, redirecting paths to goals (hope) to succeed in learning; and, when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success [14]. These attributes of PsyCap constructs facilitate the learning process among AEC university students and counter the effects of non-formal learning procedures [7].

3 RESEARCH METHODOLOGY

This study is quantitative: a questionnaire survey was administered to 600 AEC university students at Abubakar Tafawa Balewa University Bauchi, Nigeria (ATBU). The questionnaires were distributed to the selected students willing and volunteered to participate in the study through self-administration. The population of the study comprises All AEC students in Nigeria, and the sample size for this study was determined using the [3] formula for determining the sample size of unknown population:

$N_o = Z^2pq/e^2 = 385$, ***where*** N_o= sample size, Z= z table 1.96, p= population proportion, e= margin of error i.e., 5%, q= 1-p

The calculated sample size for this study was 385 AEC students at the ATBU in Nigeria. A total of 415 questionnaires were returned, and 385 were selected and used for further analysis. Thirty (30) questionnaires were rejected, i.e., not included in the analysis because of the discrepancies in the responses, and most of the items in the questionnaires were left unattended or unanswered. A Warp 7.0 PLS regression algorithm was used in the data analysis. The data were bootstrapped to 999 times from the original samples with replacement. The bootstrapping approach generated an empirical representation of the sampling distribution of the effect by treating the actual sample size as a representation of the population in the miniature [9]. A proportionate random sampling method was used for this study. These subsets of the group are then pooled to form a random sample. Therefore, AEC university students in ATBU were proportionately selected according to the AEC courses offered in the university, i.e., Architecture, Building Technology, Engineering (Civil), and Quantity Surveying. This study recorded the overall return rate of 69% and response rate of 64% as against the research of [9] on the effects of social media learning environments and that of [11] on Facebook and its impact on the students learning achievement with 60% and 55% respectively. The questionnaire used 5-point Likert scales to rate the responses on Facebook (FacBok), Learning process (LearnPro), and psychological capital (PsyCap) constructs. The response scales were based on 1 to 5 scales that measure the effect of the platform on

the construct LearnPro, i.e., from the very low - very high impact for the independent variable. Similarly, the mediating variable is also based on a 5-points Likert scale, i.e., from a very low- very high impact mediation role between the FacBok platform and the LearnPro of AEC university students in Nigeria.

In this study, two significant theories were adopted to examine the mediation role of PsyCap on the FacBok learning environment influencing the LearnPro of AEC university students in Nigeria during the COVID-19 pandemic. The theories are:

- Connectivism learning theory and,
- Social learning theory

The theory of connectivism by [5] is characterized as the learning theory of the digital age. One underlying assumption in this theory is that knowledge is distributed and "can reside outside of ourselves". [5] contends that "knowledge is distributed across a network of connections, and therefore learning process consists of the ability to construct and traverse those networks". Therefore, Connectivism Theory explains the connection between the various e-learning platforms and a child's learning process, which depends on his psychological capital. This demonstrates that learning is a process of connecting specialized nodes or information sources and psychological reasonings.

Similarly, the social learning theory, according to [7], posits that the outcome of a student's learning process is highly influenced by the student's own choice of a particular social media platform, participation, and peers, i.e., friendship networks that work within both cognitive and behavioral frameworks which embrace psychology, attention, memory, and motivation. The theory argues that children learn from observing others and "model" behavior, which involves attention, retention, reproduction, and motivation. Thus, this study adopted both the Connectivism and Social Learning Theories to assess the mediation role of PsyCap on the FacBok learning environment influencing the LearnPro of AEC university students during the COVID-19 Pandemic in Nigeria. Fig 1 and fig. 2 indicated the direct, indirect, and total paths models for mediation to occur.

Fig. 1: Direct effect of FacBok on LearnPro

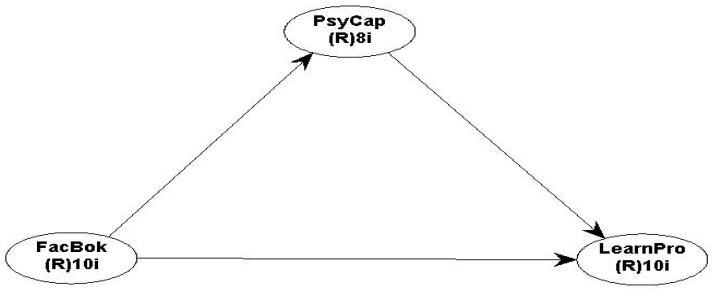

Fig. 2: Indirect effect through the mediator PsyCap and the total effect

3.1 Assessing the mediation role of psychological capital

An assessment of the mediation role on a model is achieved by adopting the causal steps test: Causal steps were presented by [2] as follows:

[2] Baron and Kenny (1986) suggested some important causal steps test for mediation role to occur, namely:

- The direct effect between the independent variable FacBok and the dependent variable LearnPro should be significant.
- The effect of independent variable FacBok on the mediator PsyCap and the impact of the mediator PsyCap on dependent variable LearnPro must also be significant; and,
- The magnitude of the direct effect between the independent variable FacBok and the dependent variable LearnPro after including the mediator PsyCap should not be significant or reduced.

Therefore, based on the causal steps presented by [2], the followings hypotheses were developed for this study as follows:

- **H1**: There is a significant direct effect between the FacBok and the AEC university students LearnPro in Nigeria during COVID-19 Pandemic.
- **H2**: There is a significant indirect effect between the FacBok and the PsyCap, during the COVID-19 Pandemic in Nigeria.
- **H3**: There is a significant indirect effect between the PsyCap and the LearnPro among AEC university students during the COVID-19 Pandemic in Nigeria.
- **H4**: The PsyCap mediates the relationship between FacBok and the LearnPro during the COVID-19 Pandemic in Nigeria.

4 RESULTS

4.1 Measurement model for the direct path

Table 2 shows the assessment of the model, which characteristically follows two steps: the evaluation of the measurement model, which examines the factor loadings validity and reliability of the measurement instrument and relationship among the constructs, and evaluation of the structural model [10]. The model for direct effect has two reflective constructs: LearnPro and FacBok all the constructs are first-order constructs. The reflective measurement model evaluates the reliability and validity of the model. Composite reliability (CR) and the average variance extracted AVE [1; 10]. On the other hand, the indicator and construct reliability were assessed to evaluate the reliability of the reflective measurement model for structural equation modeling. The indicator reliability was evaluated by cross-checking the loading of each indicator variable on its associated latent construct, and the loading should be higher than 0.70 before accepting the reliability of the indicator variable [10]. In the assessment of construct reliability, two coefficients are considered, i.e. composite reliability (CR) and Cronbach's alpha (CA) [1]. While [10] recommended CR for PLS-SEM. The table indicated that the results of the measurement model of this study showed high internal consistency and reliability. The indicators loadings were all > 0.70, and both the CR and CA were 0.855 and 0.880, and CA were 0.799 and 0.836 for both LearnPro and FacBok, respectively. The AVE values for this study were 0.534 and 0.508 for LearnPro and FacBok, respectively, all above 0.5 thresholds. This shows that all the indicators' reliability and convergent validity were acceptable for the direct effect.

Table 1: Results for the measurement model and factor loading (Direct effect)

Construct	*Items*	*Factor Loading*	*CR*	*Cronbach's Alpha*	*AVE*
LearnPro	LearnPro 1	0.759	0.855	0.799	0.534
	LearnPro 2	0.827			
	LearnPro 3	0.819			
	LearnPro 4	0.768			
	LearnPro 5	0.743			
	LearnPro 6	0.773			
	LearnPro 7	0.780			
	LearnPro 8	0.848			
	LearnPro 9	0.848			
	LearnPro 10	0.806			
FacBok	FacBok 1	0.774	0.880	0.836	0.508
	FacBok 2	0.729			
	FacBok 3	0.709			
	FacBok 4	0.847			
	FacBok 5	0.828			
	FacBok 6	0.870			
	FacBok 7	0.857			
	FacBok 8	0.869			
	FacBok 9	0.890			
	FacBok 10	0.797			

Table 3 indicates the discriminant validity of the measurement model. The discriminant validity is how to construct is distinguished from other constructs in the model [10]. This is achieved by checking the AVE of each construct and must be higher than the highest squared correlation of the construct of any other construct in the model, or the loading of an indicator with its associated construct must be higher than that with another construct [1]. The results indicated that the square root of AVE for each construct correlated to another construct is acceptable discriminant validity of the measurement model. Based on the measurement model results, the questionnaires were valid in the assessment of the study's direct affect constructs.

Table 2: Discriminant validity of the (Direct effect)

	LearnPro	*FacBok*
LearnPro	**0.713**	
FacBok	-0.115	**0.659**

4.2 Assessment of structural model for direct path

Fig. 3 shows that the path coefficient between FacBok and LearnPro was -0.115 at P-value 0.011, regarded as significant at the $P_{0.05}$ level of significance. This satisfied the first causal step of mediation presented by Baron and Kenny (1986), which stated that the direct path effect between independent variable FacBok and dependent variable LearnPro should be significant.

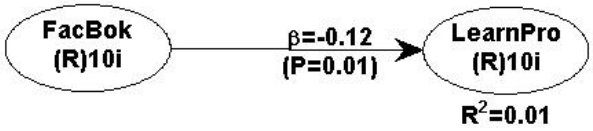

Fig. 3: Model for direct effect between FacBok and LearnPro

Table 3 shows the R-square (R^2) measure of endogenous latent variables (constructs) and the path coefficients of the model. The model is evaluated as a part of the preliminary assessment of the structural relationship, i.e. inner model and theoretical framework [1;10]. The path coefficient must be significant for a good relationship and is the coefficient of determination. Moreover, [1] suggested 0.67, 0.33, and 0.19 as substantial, moderate, and weak measures for $R^{2,}$ respectively. The R^2 for this study is 0.01, which indicated a weak relationship between criterion and predictor variables with $P_{\text{-value}}$ LearnPro and FacBok with p=0.01which is significant at $P_{\leq 0.05}$ level of significance and path coefficient β value of -0.12, which was significant. The effect sizes (f^2) are a measure that verifies whether the effect indicated by the path coefficient is low, moderate, or high if the f^2 values are 0.02, 0.15, and 0.35, respectively [1]. Effect size f^2 indicates the effect of a particular construct on the latent dependent variable is substantial [1]. The f^2 between LearnPro and FacBok was 0.013, which was low. The predictive capability of each endogenous construct in the model is Stone-Geisser's Q^2 [1,10]. The predictive capability of this model was 0.015, and Warp PLS-SEM automatically generates Q^2 [12]. Therefore, this model exhibits predictive relevance because the $Q^2>0$ and hence the prediction capability is high [1,10].

Table 3: Hypotheses-testing results

Hypotheses	*Path coefficient*	*R^2*	*$P_{\text{-value}}$*	*Effect size*	*Stone-Geisser's Q^2*	*Supported*
Procstra → SusSmart	-0.12	0.01	0.01	0.015	0.015	Yes

4.3 Measurement model of the indirect path

Table 4 shows the assessment of the second and third causal steps of reflective measurement model analysis. As earlier presented, the measurement model examines the validity and reliability of the measurement instrument and relationships among the constructs. The model for this study section had three reflective constructs: LearnPro, FacBok, and PsyCap. All three constructs are first-order constructs. The indicated the measurement model results for this study's indirect effect, which shows high internal consistency and reliability. The indicators loadings were all > 0.70, and the CR was 0.855, 0.880, and 0.795, while the CA were 0.799, 0.836, and 0.798 for LearnPro, FacBok, and PsyCap,

respectively. This shows that all the indicators' reliabilities were acceptable. The AVE values for this section were 0.534, 0.508, and 0.509 for the constructs LearnPro, FacBok, and PsyCap, respectively. Therefore, the convergent validity of the measurement model is highly acceptable.

Table 4: Measurement model evaluation of the indirect effect

Construct	*Items*	*Factor Loading*	*CR*	*Cronbach's Alpha*	*AVE*
LearnPro	LearnPro 1	0.759	0.855	0.799	0.534
	LearnPro 2	0.827			
	LearnPro 3	0.719			
	LearnPro 4	0.768			
	LearnPro 5	0.743			
	LearnPro 6	0.773			
	LearnPro 7	0.780			
	LearnPro 8	0.848			
	LearnPro 9	0.814			
	LearnPro 10	0.806			
FacBok	FacBok 1	0.774	0.880	0.836	0.508
	FacBok 2	0.729			
	FacBok 3	0.779			
	FacBok 4	0.847			
	FacBok 5	0.828			
	FacBok 6	0.870			
	FacBok 7	0.857			
	FacBok 8	0.869			
	FacBok 9	0.890			
	FacBok 10	0.797			
PsyCap	PsyCap 1	0.013	0.795	0.798	0.509
	PsyCap 2	-0.211			
	PsyCap 3	-0.323			
	PsyCap 4	0.891			
	PsyCap 5	0.873			
	PsyCap 6	0.900			
	PsyCap 7	0.880			
	PsyCap 8	0.885			

Table 5 shows the discriminant validity of the measurement model for indirect and total mediation effects. The results indicated that the square root of AVE for each construct correlated to another construct is acceptable discriminant validity of the measurement model for indirect and total mediation effects. Based on the measurement model results for indirect and total mediation effects, the questionnaires were reliable and valid in assessing the three constructs.

Table 5: Results for discriminant validity

	LearnPro	*FacBok*	*PsyCap*
LearnPro	**0.713**		
FacBok	-0.115	**0.659**	
PsyCap	-0.214	0.389	**0.713**

4.4 Assessment of the results for the structural model of the indirect and total effects

Fig. 4 shows the path coefficients for indirect and total effects between FacBok LearnPro and the mediator variable PsyCap. The path coefficient between FacBok and PsyCap was β=-0.22, at a p-value < 0.01 level of significance. The path coefficient between PsyCap and LearnPro was β=0.40 at a p-value <0.01 level of significance. These satisfied the second and third causal steps [2]. Then, after the

inclusion of the mediator in the model, the total path, i.e., the path between FacBok and LearnPro, had a path coefficient β=-0.02 at p-value 0.32, which is not significant at the p-value 0.05 level of significance. Therefore, this satisfied the fourth causal step of [2]; hence mediation has taken place.

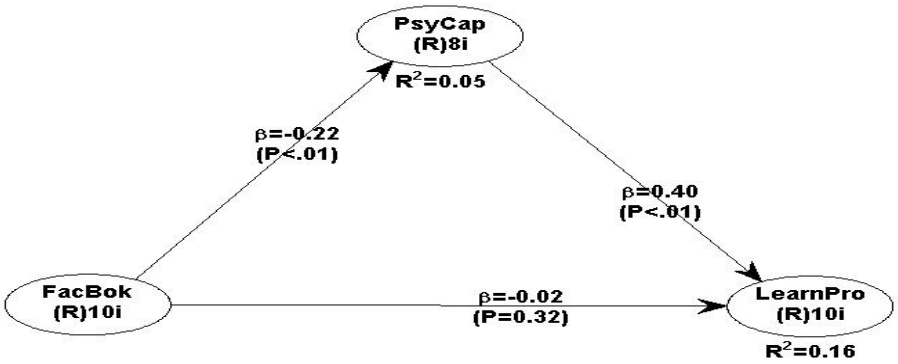

Fig. 4: Model for the indirect effect and total effects

4.5 Assessment results for the structural indirect and total mediation paths

Table 6 indicates the R-square (R^2) measure of endogenous latent variables for indirect and total mediation effects. We have previously seen that [1; 10] suggested 0.67, 0.33, and 0.19 as substantial, moderate, and weak measures for $R^{2,}$ respectively. The R^2 for the indirect and total paths were 0.05 and 0.16, which indicated weak relationships for both indirect and total mediation effects. The path coefficients were β = -0.22 and β = 0.40 for the two indirect paths FacBok → PsyCap and PsyCap → LearnPro all significant at p-value < 0.01 level of significance. Then the path coefficient for total effect FacBok → PsyCap → LearnPro was β = -0.02 with a p-value of 0.32 regarded as not significant at p-value 0.05 level of significance. This satisfied [2] causal steps, and mediation has occurred.

The effect size (f^2) is a measure that verifies whether the effects indicated by the path coefficient are low, moderate, or high if the f^2 values are 0.02, 0.15, and 0.35, respectively [1]. Effect size f^2 indicates the effect of a particular construct on the latent dependent variable is substantial [10]. The f^2 for the indirect path was for FacBok → LearnPro 0.003, FacBok → PsyCap 0.047, PsyCap → LearnPro 0.161, regarded as low, low, and moderate effects, respectively. The predictive capability of each endogenous construct in the model is Stone-Geisser's Q^2 [1;10]. The predictive capability of this model was 0.048 and 0.163 for indirect and total paths. These were automatically generated in Q^2 [12]. Therefore, the indirect and total path models exhibit predictive relevance because the $Q^2 > 0$ and hence the prediction capability is high [1;10].

Table 6: Hypotheses-Testing Results

Hypotheses	*Path coefficient*	*R^2*	*P_{-value}*	*Effect size*	*Stone-Geisser's Q^2*	*Supported*
FacBok → PsyCap (indirect effect)	-0.22	0.05	<0.01	0.047	0.163	Yes
PsyCap → LearnPro (indirect effect)	0.40		<0.01	0.161	0.048	Yes
FacBok→PsyCap→LearnPro (total effect)	-0.02	0.16	0.32	0.003		Yes

5 DISCUSSIONS

This study assessed the mediation role of PsyCap on the FacBok learning environment influencing the LearnPro of AEC university students in Nigeria. During the COVID-19 pandemic. The findings indicate that the FacBok learning environment negatively impacts the AEC university students LearnPro and the students PsyCap mediates the relationship between the FacBok learning environment and the AEC university students' LearnPro during the COVID-19 Pandemic in Nigeria.

The hypothesis was a significant direct effect between the FacBok and the AEC university students LearnPro in Nigeria during the COVID-19 pandemic. The analysis of the collated data indicated that the students' frequency of using FacBok learning environment during the COVID-19 pandemic disrupts their LearnPro because the AEC-related disciplines require more practical courses than taught classes. Therefore, the students tend to learn practical courses through FacBok chats, videos, and discussions; these disrupt the LearnPro of the students. The finding is in line with the study of [9] that works on the

effects of social media learning environments on the AEC learning process among university students in Nigeria and contradicts the study of [12] that worked on students attitudes towards online education during COVID-19 viral-outbreak of 2020 distance learning in the time of social distance for the reasons that the study considered non-university AEC students. The second hypothesis was a significant indirect effect between the FacBok and the PsyCap, during the COVID-19 Pandemic in Nigeria. The data collected supported this hypothesis that the FacBok learning environment influences PsyCap. This is in line with the study of [8] and contradicts [7] because the study assessed the influence of general technology on academic destruction, not on any social media platform.

The collected data also supported the third hypothesis. The results indicate a significant indirect effect between the PsyCap and the LearnPro among AEC university students during Nigeria's COVID-19 pandemic. The result supported the study of [9] and challenges [8] that used cloud computing services on the e-learning process among non-specific students in developing countries. The fourth hypothesis, which stated that PsyCap mediates the relationship between FacBok and the LearnPro during the COVID-19 Pandemic in Nigeria, was also supported by the data collected, and this is in line with the study of [9] and opposed that of [14] on a domain knowledge incorporated text mining approach for capturing user needs on BIM applications for the reasons that the study considered professionals rather than the students undergoing pieces of training.

6 CONCLUSION

The study aimed to assess the mediation effects of PsyCap on the FacBok learning environment influencing LearnPro. The assessments of the impact are valuable for future improvement in the learning process of AEC university students in Nigeria. This study served as awareness and wake-up calls for stakeholders in the Nigerian education sector that propose adopting online classes during the COVID-19 pandemic on the effects of adopting the FacBok learning environment without considering the levels of the AEC university student's PsyCap. This study is beneficial in the AEC education on the benefits of the students PsyCap on the adoption of social media classes like FacBok on the LearnPro. The results imply that the FacBok learning environment affects AEC university students' LearnPro. The students with PsyCap tend to benefit more from the use of FacBok and enhance their LearnPro. The study recommends the adoption of formal dedicated learning online platforms for the learning process in Nigeria. Future research in this field might need to extend the study to consider more social media learning environments and the students of other universities offering AEC courses for more comprehensive results.

REFERENCES

[1] Bagozzi R. P., Yi Y. (1988). On the evaluation of structural equation models. JAMS. 16(1):74–94.

[2] Baron, Reuben M. and Kenny, David A. (1986), "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," Journal of Personality and Social Psychology, 51 (6), 1173-82

[3] Cochran, W. G. (1977). Sampling techniques (3rd ed.). New York: John Wiley & Sons

[4] Desmal, A. J. (2017). "The impact of using social media and internet on academic performance case[4] study Bahrain Universities." EAI Endorsed Transactions on Scalable Information Systems 4(13).

[5] Downes, S. 2007. What connectivism is. Retrieved from: http://halfanhour.blogspot.com/2007/02/what-connectivism-is.html.

[6] Diraditsile, K. and G. Gamakabadi (2018). "The effect of social media on student engagement and collaboration: The use of Facebook at the University of Botswana." Lonaka J. Learn. Teach 9: 70-83.

[7] Dontre, A. J. (2021). "The influence of technology on academic distraction: a review." Human Behavior and Emerging Technologies 3(3): 379-390.

[8] El Mhouti, A., et al. (2018). "Using cloud computing services in e-learning process: Benefits and challenges." Education and Information Technologies 23(2): 893-909.

[9] Gambo, N., et al. (2021). "Effects of Social Media Learning Environments on AEC Learning Process among University Students in Nigeria." International Journal of Construction Education and Research: 1-29.

[10] Hair J. F., Jr, Sarstedt M., Hopkins L. G., Kuppelwieser V. G. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. Eur Bus Rev. 26(2):106–121.

[11] Kaso, N., et al. (2021). "Facebook and its Impact on Students' Learning Achievement at State Islamic High School of Palopo." Jurnal Studi Guru dan Pembelajaran 4(1): 1-15. Polok, K. and J. Harężak (2018). "Facebook as a beneficial tool while used in learning second language environment." Open Access Library Journal 5(7): 1-13.

[12] Kock N. (2018). Single missing data imputation in PLS-based structural equation modeling. J Mod Appl Stat Methods. 17(1):2.

[13] Unger, S. and W. R. Meiran (2020). "Student Attitudes towards Online Education during the COVID-19 Viral Outbreak of 2020: Distance Learning in a Time of Social Distance." International Journal of Technology in Education and Science 4(4): 256-266.

[14] Zhou, S., et al. (2019). "A domain knowledge incorporated text mining approach for capturing user needs on BIM applications." Engineering, Construction, and Architectural Management.