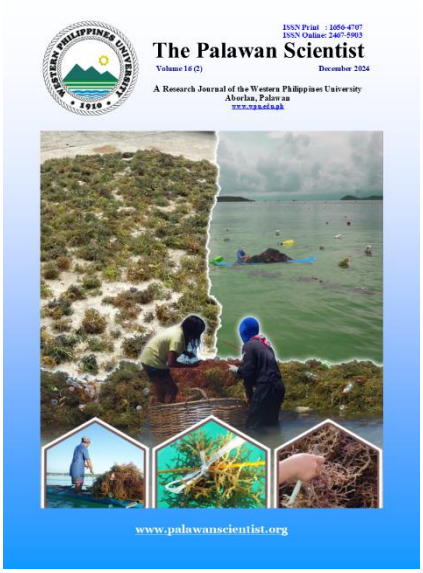

Predictors of students' academic performance during the COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic has changed the educational system, wherein the students' learning process has been confronted with many factors that could affect their academic performance. Thus, this study aimed to determine the student's academic performance and its predictors during the COVID-19 pandemic. A total of 143 students from a state university in Cagayan Valley, Philippines participated in the study by completing an online questionnaire via Google Forms. Multiple regression analysis was conducted to determine the predictors of academic performance. The results revealed that despite the pandemic, the students had shown very satisfactory academic performance. Moreover, certain socio-economic factors emerged as significant factors. These factors included monthly household income, the number of siblings employed, and the father's employment status. Hence, teachers might design instructional activities and strategies that actively promote equity within the classroom.

Keywords: academic shift attitude, readiness, self-efficacy, self-esteem, socio-economic status

INTRODUCTION

The World Health Organization (WHO 2020) declared the coronavirus pandemic a Public Health Emergency of International Concern on 11 March 2020. The pandemic has affected education in many ways, as it has proven to be a challenge for education systems around the globe. In 195 nations, school closures impacted 1.5 billion children and youth by April 2020, with 1.3 billion students in 186 nations still unable to attend school. Over 65% of the 195 nations that closed schools in April 2020 have yet to finalize plans for resuming face-to-face instruction (UNESCO 2020). The pandemic forced schools and universities to innovate adopting online classes and learning modules to ensure continuous, high-quality education (World Economic Forum 2020). Asynchronous learning in digital media is recommended to enhance remote teaching, supplemented by diverse activities and projects contextualizing COVID-19 historically and globally (Daniel 2020). Alternative learning platforms such as electronic and non-electronic learning methods, should be utilized to achieve the course outcomes (CHED 2020).

In the Philippines, the Commission on Higher Education (CHED) implemented flexible learning in all public and private Higher Education Institutions (HEIs) through Memorandum Order No. 04 in 2020. This aimed to address the challenge of virus

transmission within the academic community. The Commission adopted a policy of a flexible learning system to ensure the continuation of inclusive and accessible education when traditional modalities of instruction are not feasible, such as during national emergencies (CHED 2020). The design of programs addresses learners' individual needs in terms of place, pace, process, and learning but is not solely focused on using technology. The schools must use available distance learning, e-learning, and other alternative delivery modes in residential education, if they have the resources to do so. Along with the standard course material, teachers are advised to incorporate various activities and projects contextualizing COVID-19 into their curriculum.

However, the inability to fully experience university life was hampered by home confinement, impacting academic study and limiting the ability to gain social support for coping with the challenges of the university environment (Elmer et al. 2020; Sun et al. 2020). The impacts of the COVID-19 outbreak have also affected the student's academic performance, particularly with the shift to distance education replacing traditional face-to-face instruction. Lockdowns significantly impacted students' learning performance (Kapasia et al. 2020). Students reported various difficulties during online classes, including social exclusion, sadness, bad internet, and hostile home learning environments, which are made worse for those from disadvantaged backgrounds (Kapasia et al. 2020). In another study, students believed online education was unsuccessful due to difficulties like a lack of student social engagement, inadequate communication, ICT tools, and subpar academic results (Adarkwah 2021).

The widespread impact of COVID-19 on education that led to the closure of universities and schools has disrupted educational stability worldwide, potentially harming students' mental and emotional health, which may alter their attitude, readiness, self-efficacy, and self-esteem, which could affect their academic performance (Copeland et al. 2021; Fawaz et al. 2021). A Chinese study found that the COVID-19 pandemic had a psychological impact on approximately 25% of college students, who experienced anxiety of varying severity levels, substantially connected with adverse effects on everyday living and academic performance (Cao et al. 2020). Similarly, an investigation found that students exhibited higher anxiety and depressive symptoms than university staff (administrative and teaching staff), indicating that students were the most affected psychologically by the COVID-19 health emergency (Odriozola-Gonzalez et al. 2020). Students' high levels of symptomatology appeared to be exacerbated by uncertainty and the possible detrimental influence on academic development. Another study discovered that students were anxious about their education, exams, progression to the next academic year, and overall well-being (Cuschieri and Calleja 2020).

Consequently, the pandemic has impacted student's socio-economic status due to retrenchment. The financial consequences exacerbated existing educational disparities, which could hinder progress toward higher education aspirations (Cao et al. 2020). The COVID-19 pandemic highlighted differences in the availability and quality of learning technologies in the United States education system, wherein low-income and minority students and their families were disadvantaged regarding full access to hardware and software technologies for learning (Gandolfi et al. 2021). Moreover, an undergraduate medical students survey (Saraswathi et al. 2020) discovered a substantial increase in stress and anxiety levels, with depression remaining unchanged during COVID-19, regardless of gender, year of study, place of residence, or family monthly income; poor sleep quality and higher baseline levels of anxiety, stress, and depression were significant predictors of adverse mental health. Students needed psychological preparation for such a transition, making them more anxious about their success in an unfamiliar learning environment. This psychological impact may result in changes to their attitude, readiness, self-efficacy, and self-esteem, which could affect their academic performance. Furthermore, students' socio-economic status may play a great importance in the success of their academic performance. The shift in the educational system brought about by the pandemic gives rise to a new level of student academic performance predictors. Hence, this current study aims to investigate students' academic performance and its predictors during the COVID-19 Pandemic.

METHODS

Research Design

This study utilized retrospective predictive quantitative non-experimental research (Johnson 2001) to predict students' academic performance during the pandemic. The term "retrospective" indicates that academic performance data from the previous semester were collected without manipulation or experimentation. The study's variables, framed within the Independent Variable-Dependent Variable framework (Figure 1), aimed to identify predictors of academic performance during the COVID-19 pandemic. The predictors included socioeconomic status, academic shift attitude, readiness, self-efficacy, and self-esteem.

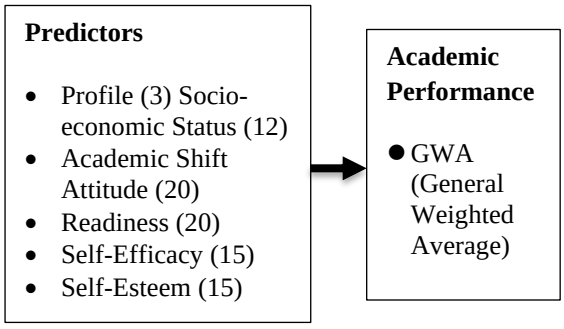

Figure 1. Predictors of academic performance model.

Sample and Sampling Technique

This study involved 143 regular tertiary students with a 21unit load from a state university in Cagayan Valley, Philippines. Tabachnick and Fidell's formula (2013) determined the sample size, considering the number of independent variables. The researchers used: N > 50 + 8m, where m is the number of independent variables. The formula is 8 (m) + 50 = N; the letter N is the number of minimum respondents. With five (5) identified independent variables, the minimum sample size of respondents was 90, but to account for potential outliers and meet the requirement for multiple regression, a sample size of 143 was considered in this study (Fidell et al. 2003). The sampling technique ensured equal representation through simple random sampling using an online random number generator.

Instruments

Academic performance. The General Weighted Average (GWA) during the first semester of the academic year 2020-2021 measured student's academic performance. The GWA was computed based on the average grade, unit values, and standard computation in the university. The GWA of the students was retrieved from the Office of the Dean and verified from the Office of the Registrar to ensure the reliability and validity of data. Informed consent from the students and approval from the Head of Office were secured so as not to violate the students' data privacy.

Predictors of academic performance. Profile predictors included sex, religion, and ethnicity. The socio-economic status had 12 categories: homeownership, household income, father's educational attainment, father's employment status, mother's educational attainment, mother's status of employment, number of siblings, siblings are employed, siblings are studying, and number of available gadgets.

The Academic Shift Attitude predictor was measured using a questionnaire of 20 positive statements relating to technological, instructional, and emotional aspects. Similarly, the readiness instrument included 20 positive comments encompassing the learning readiness activities of the students during the pandemic. At the same time, the self-efficacy questionnaire had 15 positive statements about the ability of the students to perform a specific task. Likewise, the self-esteem questionnaire comprised 15 combinations of positive and negative opinions about the students' confidence in learning situations during the pandemic. The academic shift attitude, readiness, self-efficacy, and self-esteem were scaled using the 5-point Likert scale developed by Rensis Likert in1932 (Sullivan and Artino 2013) with the following verbal interpretations:

Scale	Range		Descriptions	
5	4.51-5.00	Strongly Agree	Always Ready	Poor
4	3.51-4.50	Agree	Often Ready	Unsatisfactory
3	2.51-3.50	Neutral	Sometimes Ready	Satisfactory
2	1.51-2.50	Disagree	Rarely Ready	Very Satisfactory
1	1.00-1.50	Strongly Disagree	Not Ready	Outstanding

Data Collection

In the pre-collection, the online survey was conducted by obtaining the agreement of the target respondents. The data were collected through a Google form. Respondents were assured of confidentiality, and participation was optional.

During the implementation, the link of the Google form was sent to the email addresses of the 150 selected respondents; however, only 143 (95.33%) of the target respondents answered and responded to the questionnaire. Still, the sample is 59% more than the computed minimum sample (90). The respondents were asked to provide information about their profile and choose the options conforming to their choices or views concerning their socio-economic status, academic shift attitude, readiness, self-efficacy, self-esteem, and GWA for academic performance.

The collected data were stored in a safe file protected by a password to safeguard the privacy of the respondents. The Google Form link was terminated after all the necessary data were extracted to prevent information linkage. Moreover, after collecting and processing the gathered data, the respondents were informed of the study's results for their input and reference.

Data Analysis

The student's academic performance level was described using a 5-point scale discussed previously through the mean and standard deviation. Similarly, academic predictors like academic shift attitude, academic readiness, self-efficacy, and self-esteem were expressed on a 5-point scale using the mean and standard deviation (Table 1). In contrast, the profile variables such as sex, age, religion, and ethnicity were presented using frequency and percentage to show the distribution of the respondents. However, in the data processing, the variables sex, religion, and ethnicity were transformed into binary codes (1 and 2), and scores presented using mean and standard deviation were used for Socio-Economic Status predictors to convert the data into an interval level of measurement to meet the assumptions of multiple linear regression. No transformation on the age was made as the variable is already a ratio scale. Finally, a Stepwise linear regression analysis in IBM SPSS statistics licensed software identified significant predictors of students' academic performance. The five critical assumptions of regression analysis, such as linear relationship, multivariate normality, no or little multicollinearity, no auto-correlation, and homoscedasticity, were essentially met before drawing inferences regarding the model estimates.

RESULTS

Academic Performance of the Students During the Pandemic

Table 1 shows the academic performance of 143 students during the pandemic. Among the respondents, 72.7% (104) were very satisfactory, 26.6% (38) were outstanding, and only 0.7% (1) were satisfactory in their academic performance during the pandemic. The student's academic performance during the pandemic measured by their general weighted average (GWA) from the previous grading or semester, reflects very satisfactory ($\bar{x}$ = 1.71; SD = 0.258).

Table 1. Academic performance of the 143 students during the pandemic.

GWA	Frequency	Percent	Description
1.00-1.50	38	26.6	Outstanding
1.51-2.50	104	72.7	Very Satisfactory
2.51-3.00	1	0.7	Satisfactory
$\bar{x}$=1.71	**SD=0.258**	**Very Satisfactory**	

Predictors of Academic Performance of the Students During the Pandemic

As regards to the profile variables (Table 2), almost if not the majority of the respondents of this study were female (81.9%), aged 19 (27.3%), identified as Christian (97.9%), and belonged to a major ethnic group (93.7%). In addition, more than the majority owned houses (90.2%), had an income below PHP 5,000 (41.3%), and have parents who did not graduate from college (85.4%), primarily high school graduates (28.7%). Both fathers (96.5%) and mothers (64.3%) were employed. The majority had two siblings (25.9%), with most not employed (53.1%), but pursuing studies (69.2%). Also, the respondents possessed own gadgets for studying during the pandemic (Table 3).

The respondents of this study generally exhibited a positive attitude ($\bar{x}$ = 3.49; SD = 0.580). They also demonstrated high readiness ($\bar{x}$ = 3.64; SD = 0.686), high self-efficacy ($\bar{x}$ = 3.88; SD = 0.613), and high self-esteem ($\bar{x}$ = 3.76; SD = 0.513) toward the academic shift – from face-to-face learning to online learning, as indicated in Tables 4, 5, 6, and 7, respectively.

Linear Regression Model

A Stepwise linear regression was conducted to predict academic performance using GWA from household monthly income, siblings employed, and father's employment status. These variables significantly predicted academic performance, F (3, 139) = 6.828, $P < 0.0005$, $R^2 = 0.128$, as presented in Tables 8 and 9. All three variables added statistically significantly to the prediction, $P < 0.05$. In Table 10, the estimated model coefficients predicted academic performance = 2.270 + (0.023 x household monthly income) + (0.121 x siblings employed) + (0.288 x father's employment status). This model suggests that for a unit increase in household monthly income, there is an increase in the GWA of 0.023. Also, for a 1 unit increase in siblings who are employed, there is an increase in the GWA of 0.121, and finally, a unit increase in the employment of the father, there is an increase in the GWA of 0.288.

Table 2. Profile of the students in online class during the pandemic.

Profile variables	Frequency	Percent
Sex		
Male	27	18.88
Female	116	81.12
Age		
17	4	2.80
18	30	21.0
19	39	27.3
20	23	16.1
21	37	25.9
22	7	4.90
24	1	0.700
27	1	0.700
29	1	0.700
Religion		
Christian	140	97.9
Non-Christian	3	2.10
Ethnicity		
Major ethnic group	134	93.7
Minor ethnic group	9	6.30

Table 3. Socio-economic status of the students in online class during the pandemic.

Socio-economic variables	Frequency	Percent
Home ownership		
Owned	129	90.2
Not owned	14	9.80
Household income		
Less than 5,000	59	41.3
5,000 - 9,999	25	17.5
10,000 - 14,999	18	12.6
15,000 - 19,999	10	7.00
20,000 - 24,999	12	8.40
25,000 - 29,999	2	1.40
30,000 - 34,999	4	2.80
35,000 - 39,999	1	.700
40,000 - 44,999	2	1.40
45,000 - 49,999	2	1.40
Above 50,000	8	5.60
Father's educational attainment		
Elementary Undergraduate	36	25.2
Elementary Graduate	30	21.0
High School Undergraduate	21	14.7
High School Graduate	30	21.0
College Undergraduate	14	9.80
College Graduate	11	7.70
Master Degree Undergraduate (with units)	1	.700
Master Degree Graduate	0	0
Doctorate Degree Undergraduate (with units)	0	0
Doctorate Degree Graduate	0	0
Father's status of employment		
Employed	138	96.5
Unemployed	5	3.50
Mother's educational attainment		
Elementary Undergraduate	19	13.3
Elementary Graduate	20	14.0
High School Undergraduate	26	18.2
High School Graduate	41	28.7
College Undergraduate	16	11.2
College Graduate	20	14.0
Master Degree Undergraduate (with units)	1	.70
Master Degree Graduate	0	0

Socio-economic variables	Frequency	Percent
Doctorate Degree Undergraduate (with units)	0	0
Doctorate Degree Graduate	0	0
Mother's status of employment		
Employed	92	64.3
Unemployed	51	35.7
Number of siblings		
0	8	5.60
1	26	18.2
2	37	25.9
3	26	18.2
4	18	12.6
5	13	9.10
6	5	3.50
7	4	2.80
8	2	1.40
9	1	0.70
10	1	0.70
12	1	0.70
13	1	0.70
Siblings are employed		
Yes	67	46.90
No	76	53.10
Siblings are studying		
Yes	99	69.20
No	44	30.80
Number of available gadgets		
1	66	46.20
2	61	42.70
3	9	6.30
4	4	2.80
5	3	2.10

Table 4. Academic shift attitude of the students in online class during the pandemic.

Academic shift attitude items	$\bar{x}$	SD	Description
I was generally having a hard time learning virtually.	3.24	0.849	Neutral
I have the opportunity to get guidance for my learning difficulties.	3.36	0.817	Neutral
I get to develop my understanding by attending class online.	3.90	0.867	Agree
I get sufficient information about matters related to my studies. I get sufficient information about matters related to my studies.	3.61	0.796	Agree
I have it easy transitioning to flexible learning.	3.23	0.802	Neutral
I have found online class motivating.	3.29	0.933	Neutral
I have a lot of unwanted academic pressure on me as a student.	3.44	0.893	Neutral
I think the workload is too heavy compared to when Face-to-Face learning.	3.55	0.984	Agree
I have enough necessary tools and equipment for me to study online.	3.10	1.05	Neutral
I noticed teaching aids are always available.	3.32	0.836	Neutral
I find the materials for teaching was useful.	3.68	0.844	Agree
I think flexible learning helped me excel in my study.	3.41	0.952	Neutral
I viewed the teaching instructions online as intellectually stimulating.	3.47	0.785	Neutral
I felt a part of students who are committed to learning.	3.64	0.859	Agree
I was normally given helpful feedback on my progress by my lecturer.	3.55	0.793	Agree
I presumed that the lecturer or professors made a real effort delivering their teaching expertise to their students.	3.85	0.971	Agree
I suppose the learning and teaching methods encourages participation.	3.72	0.867	Agree
I believe the academic expectations/standards on this New Curriculum were too high.	3.55	0.954	Agree
I am satisfied with the overall quality of the support from my lecturer.	3.59	0.883	Agree
I am satisfied with the overall quality of learning online.	3.34	0.920	Neutral
Overall $\bar{x}$/SD Overall academic shift attitude description scale 3.00-5.00 (Positive attitude) 1.00-2.99 (Negative attitude)	**3.49**	**0.580**	**Positive Attitude**

Table 5. Readiness of the students in online class during the pandemic.

Readiness items	$\bar{x}$	SD	Description
I am able to do the tasks given together at the same time.	3.62	0.956	Often Ready
I am able to cope up with my fellow students with or without an Internet connection	3.20	0.990	Sometimes Ready
I am able to pass my requirements at a given time.	4.13	0.963	Often Ready
I plan my work in advance so that I can turn my schoolwork on time.	3.94	1.002	Often Ready
I am ready to engaged in online class.	3.71	0.954	Often Ready
I have a variety of applications and resources used in attending my classes online.	3.62	1.013	Often Ready
I am ready financially and emotionally in given task and activities.	3.29	0.976	Sometimes Ready
I am ready enough to send my time in online class.	3.73	0.964	Often Ready
I have developed good ways to solve problems I encountered in learning online.	3.73	0.927	Often Ready
I am mentally ready to participate on activities given online by the teacher.	3.70	0.979	Often Ready
I am fairly good at using computer and other devices for my online class.	3.54	0.870	Often Ready
I am willing to use email and other online tools to ask my classmate and instructor questions.	3.83	1.002	Often Ready
I am connected to the Internet with a fairly fast, reliable connection such as DSL or cable modern.	3.19	1.113	Sometimes Ready
I am comfortable surfing the Internet.	3.48	0.978	Sometimes Ready
I am comfortable conducting searches, setting bookmarks, and downloading files.	3.55	0.878	Often Ready
I am prepared to learn from things I hear and watch, like online lectures, video lessons, and audio recordings.	3.75	0.923	Often Ready
I can keep myself in track and on time whenever there is a virtual meeting for my classes.	3.78	0.943	Often Ready
I will not quit my study just because online learning is difficult.	4.28	0.899	Often Ready
I have the necessary digital tools such as a computer/laptop, headphones or speaker, and a microphone to use if a class has a videoconference.	3.32	1.059	Sometimes Ready
I have a study place where I can attend my virtual class, read, and work on my assignments without distraction.	3.36	1.097	Sometimes Ready
Overall $\bar{x}$/SD Overall readiness description scale 3.00-5.00 (High readiness) 1.00-2.99 (Low readiness)	**3.64**	**0.686**	**High Readiness**

Table 6. Self-efficacy of the students in online class during the pandemic.

Self-efficacy items	$\bar{x}$	SD	Description
I will be able to achieve most of the goals that I have set for myself.	4.27	0.847	Agree
When faced with the difficult tasks caused by the pandemic, I am sure I can do it.	4.14	0.819	Agree
In general, in my study during online classes, I will get outcomes that are important to me.	4.02	0.791	Agree
Amidst of pandemic, I believe I can succeed in any endeavor for my dreams.	4.36	0.817	Agree
I will be able to overcome many academic challenges in the new normal.	4.38	0.776	Agree
I am sure that I can perform effectively in many different tasks, especially in my studies online.	4.03	0.872	Agree
Compared to others students, I can do most tasks very well.	3.57	0.931	Agree
Even if the learning situation is difficult, I will still overcome the challenges.	4.23	0.828	Agree
I am very unsure of my abilities to use digital technology for my online class.	3.48	0.948	Agree
I can learn without being in the same room as the instructor and other students.	3.61	0.967	Agree
I seem to have difficulties with most of the tools or online applications I have tried to use for my online classes.	3.48	0.948	Neutral
At times, I find using digital technology very confusing during this time of Flexible Learning.	3.49	0.895	Neutral

Self-efficacy items	$\bar{x}$	SD	Description
I am able to focus on schoolwork when faced with distractions during this pandemic.	3.42	0.982	Neutral
I am able to search the internet to find the answer to a course-related question.	3.65	0.898	Agree
I can communicate using synchronous and asynchronous technologies (Google Meet, Zoom, discussion boards, email, etc.) on my classes amidst this pandemic.	4.042	0.8791	Agree
Overall $\bar{x}$/SD Overall self-efficacy description scale 3.00-5.00 (High self-efficacy) 1.00-2.99 (Low self-efficacy)	**3.88**	**0.613**	**High self-efficacy**

Table 7. Self-esteem of the students in online class during the pandemic.

Self esteem items	$\bar{x}$	SD	Description
I feel like I am a valued student; somehow, I can help other students like me.	3.92	0.835	Agree
I feel like I have good qualities to share with my fellow students during the pandemic.	3.82	0.828	Agree
Sometimes, I feel frustrated and have difficulty with the new learning situation.	3.78	0.840	Agree
I can do things as well as most other student during this New Normal mode of learning.	3.84	0.802	Agree
I feel I do not have much any learning that I acquired from online class.	3.31	0.929	Neutral
I take a positive attitude toward myself about online learning.	4.03	0.851	Agree
On the whole, I was satisfied with myself and my accomplishments.	3.93	0.924	Agree
I fear that learning online will make me incompetent someday.	3.59	0.937	Agree
Because of the pandemic, I was losing my self-confidence.	3.16	1.085	Neutral
Sometimes I think I'm not doing well with my fellow students.	3.45	1.026	Neutral
I am responsible for my thoughts and action during online class.	4.10	0.729	Agree
I feel comfortable and confident in speaking during online class recitation.	3.55	0.991	Agree
I appreciate compliment from my teacher and my fellow students.	4.01	0.809	Agree
I find it challenging learning online.	4.00	0.842	Agree
I feel that I have the confidence to acquire a passing grade during this New Normal setup.	3.90	0.858	Agree
Overall $\bar{x}$/SD Overall self-esteem description scale 3.00-5.00 (High self-esteem) 1.00-2.99 (Low self-esteem)	**3.76**	**0.531**	**High self-esteem**

Table 8. Model Summary showing how well the model fits the data.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.358	0.128	0.110	0.24340

Table 9. ANOVA showing the overall regression model is good fit for the data. Dependent Variable:GWA; Predictors: (Constant), H. Income, Siblings Employed, Father's Employment.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.213	3	0.404	6.828	0.000
Residual	8.235	139	0.059		
Total	9.448	142			

Table 10. Relationship between SES variables and academic performance. Dependent variable: GWA. Predictors: (Constant), H. Income Siblings Employed, Father's Employment.

Model	Unstandardized Coefficients		Standardized Coefficients	R^2	t	Sig.
	B	Std. Error	Beta			
(Constant)	2.270	0.146			15.56	0.000
Household Monthly Income	0.023	0.007	0.252	0.211	3.148	0.002
Siblings Employed	0.121	0.041	0.235	0.185	2.927	0.004
Father's Status of Employment	0.288	0.112	0.206	0.155	2.568	0.011

DISCUSSION

Academic Performance of the Students During the Pandemic

A recent study investigating academic successes, as measured by students' grade point average (GPA) and curricular objectives during distance education in the COVID-19 pandemic, found similar results regarding academic performance and exams taken during distance education. The study revealed that only 30% of students had higher GPAs, 40% experienced no GPA change, and 30% had declined GPAs. Moreover, approximately 60% of students expressed the need to complete their educational objectives (Elsalem et al. 2021). These results were similar with a study conducted at a prestigious state university in Northern Mindanao, where the students' general weighted average (GWA) is excellent (128), ranging from 1.00-1.25 (Napoles et al. 2023). Considering the report of the Office of the Registrar on the respondents' academic performance before the pandemic, their general weighted average ranges from 1.51 to 2.50, which is also considered very satisfactory. Likewise, the result of the academic performance of the respondents signifies that even though the learning modality has changed during this pandemic, the student's average academic performance is still high considering the situation. Comparing the GWA of the respondents before and during the pandemic means that the respondents could maintain and sustain their academic performance even in the changing learning modality. The very satisfactory academic performance could be associated with providing the needed assistance in expecting more outstanding communication and interactivity towards the students' learning, such as giving support in creating interactive online materials to supplement learning difficulties, providing extra resources, and responding to student's queries (Joosten and Cusatis 2019).

While it might be expected that learning during the pandemic would result in a poor learning experience, students' performance in terms of their grades remains unaffected (El Said 2021). The learners' adaptability, self-regulation, perseverance, and attitude to the new learning approach were ascertained to keep them focused and engaged in their study at times of the pandemic (Limniou et al. 2021). Hence, the teachers and parents must ensure that the students' learning environment enhances, if not sustains, their adaptability, self-regulation, perseverance, and attitude toward learning in whatever modality they are in.

Predictors of Academic Performance of the Students During the Pandemic

The profile variables such as religion and ethnicity were recategorized to meet the assumptions of linear regression. Though the respondents were randomly selected, it can be noted from the data that there is a wide disparity in the distribution of respondents across categories per profile variable. However, this disparity in the distribution did not affect the data needed in the study. Moreover, most of the respondents are from low-income families, with parents lacking an educational degree, hence, the majority of the respondents came from low socio-economic status.

Though the respondents came from a low socio-economic status, their attitude toward academic shift is still positive. The findings are consistent with a recent study conducted with a small-scale student and teacher sample (Hebebci et al. 2020) that focused on positive and negative attitudes toward distance education, such as online learning. Students appeared to value the opportunity to use new academic resources, such as video classes, to better and more independently manage their study activities. Similar findings were reported in a larger sample (Shatakshi and Nardev 2020). The authors discovered a strong appreciation for distance education among just over 70% of the students, who preferred learning through online classes because the study period became flexible, and they could study whenever they wanted. The off-site students appreciated the reduced travel time and cost savings (Sindiani et al. 2020). This implies that the sudden academic shift, from face-to-face learning to online learning, brought about by the pandemic did not hinder the students from positively approaching education. This positive attitude of the students can be attributed to the fact that these students are already exposed to technologies used in online learning. Hence, familiarity with online learning modalities can contribute to their positive attitude toward academic shift during the pandemic. As all lecture meetings were carried out online, making efficient use of technologies or ICTs, especially during the COVID-19 pandemic, can significantly benefit students by providing them with more flexible scheduling, additional access to learning resources, and learning experiences (Bentyet al. 2020). Although most respondents positively appreciated the implementation of distance education, some students did not favor it. Therefore, it is necessary to determine their reasons for this attitude so that appropriate assistance can be given to them. The teacher may design instructional activities in a manner that will promote an appreciation of distance learning. Also, the institution may implement a scheme to help students who cannot attend distance learning, such as online classes, due to financial constraints.

However, a study by Bozkurt et al. (2020) state that this sudden shift would be associated with a negative impression due to the disruptions in learning and the regular academic flow. On the other hand, Hjelsvold et al. (2020), indicate that learners at the

Norwegian University of Science and Technology in Norway adapted well and had a positive attitude towards the transition. The students' annoyance with all the changes and difficulties did not make them give up. Students are challenged to achieve their personal goals and curiosity, studying with determination and responsibility, satisfaction, gratitude, social support, staying healthy, and having the opportunity to attend a university. The impediments to learning brought by the COVID-19 pandemic kept them positive and motivated to learn and maintain good grades despite all the challenges and limitations they faced. This serves as a driving force for them to become resilient and able to thrive through the current adversity of learning (Hjelsvold et al. 2020; Rahiem 2021).

Similarly, the readiness of the students has not decreased or been affected during the pandemic. The high readiness of the respondents can be ascribed to their exposure and previous experiences in using modern technologies. The present curriculum in the country has already incorporated the use of technologies in teaching. Thus, using technologies for online learning is not new to the students considering the advancement of technologies.

E-learning integrates any form of technology that represents a teaching solution for distance education, facilitated by the massive penetration of the internet as a form of communication. E-learning is rapidly growing as an acceptable way of education and remarkable progress has been made in e-learning in the last couple of decades (Raymond 2000). Naji et al. (2020) found that four factors had an impact on their level of readiness: initial preparedness and motivation for online learning, self-efficacy beliefs about online learning, self-directed online learning, and support for online learning. The fact that the students are more familiar with technology and internet use and constantly use the computer in their courses reveals this situation, thus the students (Adnan and Yaman 2017).

Similarly, the students in this study believe that they can succeed in online learning during the pandemic. This set of beliefs of the students can be rooted in their familiarity and exposure to the different online learning platforms and applications. Moreover, the students' high self-efficacy could be attributed to their desire for learning or the power of learning. Students already have high self-efficacy towards the internet, which impacts their appreciation for understanding and their aim to use it in their studies. Students with higher academic self-efficacy progress more by pursuing challenging tasks and using efficient methods to complete them (Walker et al. 2006). Students with high self-efficacy tend to perceive themselves capable of regulating their learning, especially during this time of the pandemic. Most students were pleased because the online learning platforms they chose, such as Zoom, WhatsApp, Edmodo, and other social media, were simple to access and use. Growing up in the digital age, digital natives are knowledgeable about fundamental technologies and social media and communication tools (Lei 2009).

Similarly, the students have high self-esteem amidst the pandemic, which can be attributed to their self-verification of their online learning abilities, or they have a firm understanding of their skills as supported by their high self-efficacy. Also, the students understand their needs and can express them. The students' level of self-efficacy in learning online possesses superior levels of such, which they believe could enhance human accomplishment and well-being in multiple ways. Self-esteem is concerned with a person's way of thinking, behaving, and reacting to different experiences in online education. Moreover, the results showed positive personal perceptions towards online learning and other academic-related activities (Rameli et al. 2020).

It also reiterated that the ultimate success of online education is to have self-confidence, self-efficacy (Malureanu et al. 2021), and self-esteem (Rameliet al. 2020). Self-efficacy combined with self-esteem overcomes challenges and improves academic performance during the pandemic. Albert Bandura's perception towards self-esteem involves perseverance and determination in overcoming an interfering negative mindset. Thus, good self-esteem and self-efficacy motivate and guide the learners to support different learning skills (Hassan et al. 2021; Rameli et al. 2020). Considering the importance of a positive attitude, readiness, self-efficacy, and self-esteem in the mental health and well-being of the students, the learning environment, particularly during a pandemic or other unforeseen academic disruptions, should sustain, promote, guide, and motivate the learner's acquisition of different learning skills. Thus, the students' learning activities, whether online or face-to-face, amidst a pandemic or not, should be crafted or created by the teacher according to the skill set needed in the workforce.

Linear Regression Model

Student academics are affected by social, psychological, economic, environmental, and personal factors. These factors strongly influence student performance, but they vary from person to person and country to country (Mushtaq 2012). Based on the multiple regression analysis of this study, an important result is the impact of household monthly income on academic performance. Income is a crucial material resource for families (Shuani 2016), and research suggests that household or family income is a major factor contributing to students' competitive ability, educational level, and performance (Smith et al. 2002; Hill et al. 2004; Rothestein 2004). Adzido et al. (2016) concluded that family income can affect students'

learning process, implying that a strong or financially stable income can lead to improved motivation and better academic performance. It is disheartening that 41.3% of the respondents reported a family income below PHP 5,000. According to the Office of Student Services, 56.92% of the total population of 7,169 students have a family income ranging from PHP 9,000 to PHP 11,000. The financial status of the students has prompted the institution to collaborate with government and non-governmental organizations to provide scholarships and other forms of economic aid to help low-income students overcome their financial constraints. Additionally, the institution has programs such as student labor and financial assistance aid programs.

The employment of siblings contributes significantly to the additional income of a household and serves as a good financial support for students' education (Adzido et al. 2016). Siblings who are employed can provide this additional financial support as valuable resources. Resources, as mentioned by Lacour and Tissington (2011), can include financial, emotional, mental, relationships, and role models. Moreover, a father's employment plays a crucial role in providing a stable financial foundation for the family (Parcel 2016). Paternal employment is associated with sufficient income to support their child's education.

A study by Ali et al. (2013) explored factors affecting the academic performance of 100 students at Islamia University and found that a higher income status of a father/guardian significantly contributes to higher academic performance. On the other hand, parental, specifically a father's unemployment can negatively affect a child's schooling performance, potentially leading to a higher risk of dropout (Raychaudhuri et al. 2010). In general, high academic performance can be achieved if a student's parents, specifically the father, are employed and able to support and cover the educational expenses and needs of their child (Ali et al. 2013). Additionally, high academic performance can also be related to effective learning programs, interventions, and meeting the necessary pace, place, process, and learning products for students, resulting in consistent and progressive learning (Parrocha 2020).

Considering the functional brain organization, Finn et al. (2017) found that higher family income is associated with larger working memory capacity and more activation of the fronto-parietal executive network for challenging working memory tasks, resulting in higher scores on statewide tests. Higher math achievement scores were also associated with greater parietal activation during working memory tasks. On the other hand, Lacour and Tissington (2011) examined how poverty directly impacts students' academic achievement due to a lack of accessible resources to support their success. As a result, low academic achievement is strongly linked to a need for more resources, particularly financial resources. They suggested that by providing students with the support they need to excel academically, instructional techniques and initiatives at the classroom, school, district, and governmental levels can help in close the achievement gap. Considering monthly household income, employed siblings and a father's employment status as factors related to the family's financial situation that significantly predicts students' academic performance, instructional activities and strategies should promote equity among privileged and underprivileged students in the classroom.

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ETHICAL CONSIDERATIONS

Informed consent and assent were secured from the participants before the conduct of the study.

DECLARATION OF COMPETING INTEREST

The authors declare that there are no competing interests to any authors.

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