SPAMAST Research Journal Volume 6 • January 2023
DOI: https://doi.org/10.64656/spamastrj.v6i1.29

Modeling Students' Mental Health and Academic Performance in the New Normal

JEA FARIDA R. GUROALIM, ALDWIN T. MIRANDA
Science Teaching Institute of Professional and Graduate Studies

Corresponding Authors: jguroalim@spamast.edu.ph

ABSTRACT

Article History

Received: 03 March 2022
Revised: 25 June 2022
Accepted: 08 October 2022
Published: 30 January 2023

Keywords— Modeling, mental health, academic performance, new normal

The study was conducted using the descriptive-correlational method. Employing random sampling and Slovin's formula, a total of 365 undergraduate students of SPAMAST were the subjects of the study. Descriptive statistics were used to describe the socio-demographic profile, level of mental health, and academic performance of the students. Spearman correlation was utilized to investigate the relationship between the variables. Structural Equation Modeling (SEM) generated the structural model that best fits mental health and academic performance. Results revealed that the respondents have positive mental health and satisfactory academic performance. Through correlational analysis, results showed that emotional, social, and psychological well-being have no significant relationship to academic performance. Further, a structural equation model that best fits mental health and academic performance revealed that social and psychological well-being positively influences academic performance. In contrast, emotional well-being has a negative influence. Moreover, it was revealed that emotional well-being was highly correlated with social and psychological well-being. At the same time, social well-being is highly correlated with psychological well-being. Hence, cultivating any of these factors will significantly enhance the other factors. The obtained best-fit model can explain 28% of the data being considered for the study.

INTRODUCTION

The coronavirus disease 2019 (COVID-19) outbreak has created a worldwide health crisis, leading to a significant shift in people's lives. Public health and safety protocols are being implemented globally to suppress the virus. Local and international restrictions meant to curb the spread of SARS-CoV-2, the Coronavirus that causes COVID-19, included stay-at-home orders and travel bans, among others (Cohut, 2019).

All sectors of society have experienced significant disruption in work operations in the fight against the virus. One of the sectors that has been hit hard is education. Academic agencies devised contingency plans in the Philippines to allow learning to continue amidst the pandemic. In higher education, HEIs were given academic freedom and should implement available distance learning, e-learning, and other alternative delivery modes to students (CHED, 2021).

The changing landscape of Philippine learning setups demands that students cope with the new learning system as soon as possible. This shift from traditional face-to-face learning to distance learning has incurred differing perspectives on students as they faced the struggles and constraints brought by the flexible learning modalities. With the ongoing physical and social contact restrictions, individuals are advised to refrain from mingling with their peers. Such a period of health crisis has significant repercussions on human health and well-being, accompanied by psychological distress and related symptoms such as stress, panic, and anxiety in the general population (Wang et al., 2020).

According to Patnaik (2021), mental health includes emotional, psychological, and social well-being; it affects how an individual thinks, feels, and acts. These three mental health components holistically influence how individuals interact with their environment.

About the abovementioned claims, many college students are already vulnerable to mental health breakdown, even before the new normal. Confronted with the global pandemic, they are at a higher risk of mental health issues. Thus, this urged the researcher to study the mental health level of these students and their relationship with academic performance. The researcher also intended to develop a structural mental health model that best fits college students' academic performance to gain a deeper understanding of these concepts.

Objectives of the Study

The study focused on developing a structural model of mental health and academic performance of SPAMAST students enrolled in the academic year 2021-2022.

Specifically, it answered the following:

1. To determine the socio-demographic profile of the students in terms of:

1.1 age;
1.2 gender;
1.3 civil status; and
1.4 College Institute and year level.

2. To determine the level of students' mental health in terms of the following components:
   2.1 emotional well-being;
   2.2 Psychological well-being; and
   2.3 Social Well-being.
3. To determine the academic performance of college students in the new normal.
4. The goal is to determine the relationship between the student's mental health and academic performance.
5. To develop a structural equation model of mental health that best fits the academic performance of college students in the new normal.

CONCEPTUAL FRAMEWORK

Figure 1

Schematic diagram showing interactions of the variables or parameters of the study.

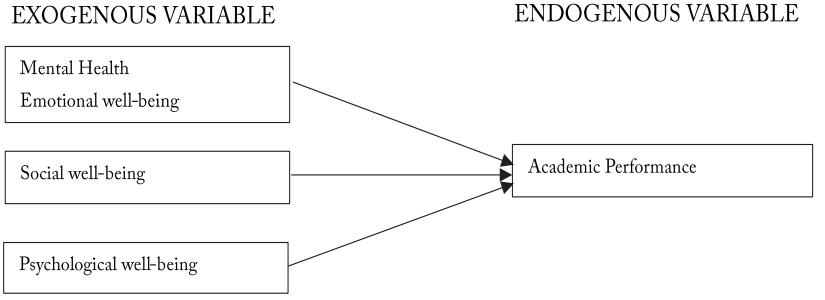


Figure 1 illustrates the exogenous variable—Mental Health—with its three latent variables: emotional well-being, psychological well-being, and social well-being, which interact with the endogenous variable—academic performance in the new normal. This study aims to determine how the three mental health components relate to and predict students' academic performance through a structural model.

MATERIALS AND METHODS

Research Locale

The study was conducted at Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST), a state college located in Malita, Davao Occidental, Philippines. As a higher education institution, SPAMAST is greatly affected by the COVID-19 pandemic and the new standard education system. As it navigates through a flexible learning system, it is essential to explore the relationship between mental health and the academic performance of its students.

Research Design

This study used a descriptive-correlational research design to determine the relationship between mental health and academic performance of college students in the new normal. The researcher developed a structural model from the variables and data using structural equation modeling (SEM). Through SEM, the researcher examined the interaction between and among the variables.

Sampling Design and Technique

This study employed a random sampling design in which all SPAMAST students, as part of the entire population, had an equal opportunity to be respondents, thus ensuring the reliability of the respondents. Slovin's formula was employed to determine the sample size of respondents from the total population of students enrolled at SPAMAST for A.Y. 2021-2022. Stratified random sampling was used to distribute respondents for each institute properly.

Respondents of the Study

The respondents of this study were undergraduate students enrolled at SPAMAST for the academic year 2021-2022. According to the data from the school registrar, the total population of students enrolled in various undergraduate programs for the first semester of A.Y. 2021-2022 was 4,013. Applying Slovin's formula resulted in a sample size of 365 respondents. The table below shows the distribution of the respondents.

Table 1. *Distribution of the Respondents*

INSTITUTE	POPULATION	SAMPLE SIZE	PERCENTAGE
IATES	988	90	24.66
IFMS	480	44	12.05
IHS	1,145	104	28.49
ITEIT	1,400	127	34.79
TOTAL	4,013	365	100

Research Instruments

This study collected the target data through three research instruments. The demographic profile of the respondents was collected through a questionnaire. This study also utilized a survey questionnaire to measure students' mental health in terms of emotional, psychological, and social well-being. Furthermore, this study used the grading system of SPAMAST for the respondents' academic performance data.

The Mental Health Continuum Short Form (MHC-SF) was derived from the long form (MHC-LF), which consists of 7 items measuring emotional well-being, 18 items measuring psychological well-being, and 15 items measuring social well-being (totaling 40 items). The estimates of internal consistency reliability for each of the three sets of measures—emotional, psychological, and social well-being—in the MHC short and long forms have all been high (> .80) (Keyes, 2005).

The MHC-SF consists of 14 items selected to represent each facet of well-being (Keyes, 2009). The short form consists of 3 emotional well-being items (items 1-3 reflect hedonic well-being), five social well-being items (items 4-8), and six psychological well-being items (items 9-14) (when combined, reflect eudaimonic well-being). The responses were based on a 6-point Likert scale ranging from 0 "never" to 5 "every day." These response options assess the frequency with which respondents experience each symptom of positive mental health. This scale also provides a flourishing and languishing mental health indicator based on these three subscales (emotional, social, and psychological well-being). Items are summed, yielding a total score ranging from 0 to 70. Subscale scores range from 0 to 15 for emotional (hedonic) well-being, from 0 to 25 for social well-being, and from 0 to 30 for psychological well-being. Flourishing mental health is defined by reporting ≥ 1 of 3 hedonic signs and ≥ 6 of 11 eudaimonic signs (social and psychological subscales combined) experienced "every day" or "5-6 times a week." Higher scores indicate greater levels of positive well-being.

The basis for their academic performance was the respondents' General Percentage Average (GPA) for the first semester (August 2021-December 2021) of AY 2021-2022.

Data Analysis

The data on the respondents' mental health levels were based on the data obtained through the Mental Health Continuum-Short Form (MHC-SF-2009). The level of each of the three components of mental health was determined by the total scores, which are as follows:

For emotional well-being (items 1-3):

Range of Scores	Descriptive Level	Interpretation
8–15	High	This manifests as high satisfaction in life.
0–7	Low	This manifests as low satisfaction in life.

For social well-being (items 4-8):

Range of Scores	Descriptive Level	Interpretation
13–25	High	This manifests that an individual is well-functioning in his/her social life.
0–12	Low	This indicates that an individual is poorly functioning in their social life.

For psychological well-being (items 9-14):

Range of Scores	Descriptive Level	Interpretation
16–30	High	This manifests in an individual with high self-esteem.
0–15	Low	This manifests in an individual with low self-esteem.

For mental health, the scores in each component were summed up and used to determine the overall level of mental health. The analysis was based on the study of Irfan (2016), with the following criteria:

Range of Scores	Descriptive Level	Interpretation
46 – 70	Positive mental health	This manifests flourishing mental health, high in hedonic and positive functioning.
25 – 45	Average mental health	This manifests average well-being.
0 – 24	Poor mental health	This manifests in languishing mental health, both low hedonic and positive functioning.

The data on the academic performance of the students was obtained from the school registrar's office. The grading system and interpretation employed are as follows:

Academic Performance	Qualitative Description	Interpretation
1.00 – 1.49	Excellent	The students at this level exceed the core requirements in terms of knowledge and skills.
1.50 – 1.99	Very Satisfactory	The students at this level had developed fundamental knowledge and skills.
2.00 – 2.49	Satisfactory	The students at this level developed fundamental knowledge and skills, but need minimal guidance from the instructor or their peers.
2.50 – 3.00	Marginal	The students at this level possess the minimum knowledge and skills and core understanding, but need help and guidance from instructors and peers.
Below 3.00	Failure	The students at this level did not possess the minimum knowledge and skills and core requirements.

Data Gathering Procedures

In gathering the data for this study, the following steps served as a guide for the researcher:

A formal letter, noted by the graduate school dean and addressed to SPAMAST, was written to request permission to conduct the study and seek approval for data gathering. Another formal letter, signed by the Vice-President for Academic Affairs and addressed to the dean of each institute, was prepared to secure permission for conducting the study within each unit. Subsequently, a letter was also sent to the registrar's office to request the specific data needed from the respondents.

Upon approval from the SPAMAST administrators, the questionnaire was administered to the respondents via online platforms such as Google Forms, Google Docs, Google Drive, Gmail, Facebook, and Messenger. Prior to answering the questionnaire, respondents received a letter orienting them about the purpose of the study and explaining how their data would be treated. Informed consent was provided at the beginning of the questionnaire, emphasizing that their grades were needed for the study and would be treated with strict confidentiality. Detailed instructions were also given to guide respondents in accurately completing the questionnaire.

For the collection of data on academic performance, the researcher sought further permission from the Office of the President and the Office of the Vice-President for Academic Affairs through the Office of the School Registrar to obtain a copy of the general percentage average of the respondents.

Respondents were informed about the need for their grades and assured that all information would remain confidential and be used solely for research purposes.

All collected data from respondents was treated with the utmost respect and confidentiality. The data gathered was tallied, collated, and tabulated for processing and analysis. Tables were prepared to illustrate the collected data, and results were summarized and analyzed using appropriate statistical tools and statistical software.

Statistical Analysis

The data gathered were tallied, tabulated, and processed for use in SPSS. Both descriptive and inferential statistical tools were employed to generate and interpret the study's results.

Descriptive Statistics

Frequency Count

Frequency statistics were used to count the number of times each variable occurred, particularly those related to the demographic profile.

Percentage

Percentages described the profile of respondents in terms of age, gender, course, year level, and socio-economic status.

Mean

The mean was used to determine the sample size of respondents and describe their profiles. It was also employed to compute the students' mental health and academic performance scores.

Inferential Statistics

Spearman Correlation Analysis

This tool was used to determine the relationship between the mental health and academic performance of college students in the new normal. The correlation coefficient (r) was used to analyze the relationship between two variables, following the basis outlined by Higgins et al. (2011):

r - values	Description
0	No correlation
±0.01 to ±0.20	Slight correlation
±0.21 to ±0.40	Low correlation
±0.41 to ±0.60	Moderate correlation
±0.61 to ±0.80	High correlation
±0.81 to ±0.99	Very high correlation
±1.0	Perfect correlation

Structural Equation Modeling

Structural equation modeling was employed to analyze structural relationships. This technique combines factor analysis and multiple regression analysis, and it was used to analyze the structural relationship between measured variables and latent constructs. In this study, structural equation modeling was utilized to determine the best-fit model for students' mental health and academic performance. The analysis was based on the following fit indices:

Indices	Critical Value
CMIN/DF (Minimum Discrepancy Function by Degrees of Freedom divided by p-value)	< 2
GFI (Goodness of Fit Index)	> 0.95
CFI (Comparative Fit Index)	> 0.95
TLI (Tukey-Lewis Index)	> 0.95
NFI (Bentler-Bonett Normed Fit Index)	> 0.95
RMSEA (Root Mean Square Error of Approximation)	< 0.05

RESULTS AND DISCUSSION

Socio-Demographic Profile of the Respondents

The socio-demographic profile of the 365 randomly selected college students of SPAMAST, who served as respondents for the study, is presented in Table 2. In terms of age, 296 respondents or 81.10% belong to the 18–24 year age group, making it the largest group, followed by 36 respondents or

9.90% who were between 25–31 years old.

Regarding gender, females comprised the majority with 245 respondents or 67.10%, while males were 108 or 29.60% of the sample. As for civil status, 328 respondents or 89.90% were single, while 37 or 10.10% were married.

When categorized by year level, most respondents were first-year students with 203 or 55.60%, followed by 85 or 23.30% in the second year, 64 or 17.50% in the third year, and 13 or 3.60% in the fourth year. Based on the institute, the Institute of Teacher Education and Information Technology (ITEIT) had the most significant representation, with 127 respondents or 34.80%.

These results imply that the majority of students enrolled at SPAMAST are female and belong to Generation Z—a generation recognized for early exposure to the internet and portable digital technologies, often referred to as "digital natives." Most respondents are single, consistent with research suggesting that unmarried individuals tend to report better health than their married counterparts (Kutob et al., 2017).

The onset of the COVID-19 pandemic in December 2019 and the subsequent implementation of health and safety protocols by March 2020 led to nationwide school closures and a shift from traditional to online learning. The respondents, having experienced at least four semesters under flexible learning delivery in the new standard system of education, were all significantly impacted by the pandemic. According to the United Nations Educational, Scientific, and Cultural Organization (Huang et al., 2020), over 800 million learners globally have been affected, with 1 in 5 unable to attend school, 1 in 4 missing higher education classes, and over 102 countries enacting nationwide school closures, while another 11 applied localized closures.

Table 2. *Socio-Demographic Profile of the Respondents (n=365)*

Particulars	Frequency (f)	Percentage (%)
Age		
18 – 24 years old	296	81.1
25 – 31 years old	36	9.9
32 – 38 years old	20	5.5
39 – 45 years old	9	2.5
46 – 52 years old	3	0.8
53 years and above	1	0.3
Gender		
Female	245	67.1
LGBTQ_	10	2.7
Male	108	29.6
Prefer not to say	2	0.5
Civil Status		
Married	37	10.1
Single	328	89.9
Year Level		
First Year	203	55.6
Second Year	85	23.3
Third Year	64	17.5
Fourth Year	13	3.6
Institute		
IATES	90	24.7
IFMS	44	12.1
HIS	104	28.5
ITEIT	127	34.8

Level of Students' Mental Health

The level of students' mental health, assessed in terms of emotional well-being (EWB), social well-being (SWB), and psychological well-being (PWB), is presented in Table 3.

For the component of emotional well-being, a general mean of 10.984 was gathered, with a qualitative description of "high." This indicates that respondents manifest high satisfaction in life. Among the emotional well-being statements, "often feel interested in life" received the highest mean of 3.847, while "often feel happy" obtained the lowest mean of 3.482. These findings align with the review of Fredrickson (2004), which states that positive

emotions broaden people's attention and thinking, undo lingering negative emotional arousal, foster psychological resilience, and contribute to overall mental and physical well-being.

Regarding social well-being, the grand mean obtained was 17.121, also described as "high." This further suggests that the respondents are well-functioning in their social lives. The statement "often feel that our society is a good place, or is becoming a better place, for all people" garnered the highest mean of 3.512, while "often feel that people are good" had the lowest mean of 3.288.

For psychological well-being, the responses resulted in a general mean of 22.54, which is the highest among the three mental health components. This indicates that respondents have high well-being in this aspect. The statement "often feel that you had experiences that challenged you to grow and become a better person" received the highest mean of 4.055. In contrast, "often feel that you had a warm and trusting relationship with others" had the lowest mean of 3.452.

Overall, the respondents' mental health yielded a grand mean score of 50.65, corresponding to a descriptive level of "positive mental health." This reflects flourishing mental health among the respondents, characterized by high and positive functioning. As highlighted by Keyes (2009), the importance of measuring population well-being is underscored by epidemiological studies that show flourishing is associated with superior physical, psychological, and psychosocial functioning.

Table 3. *Level of Students' Mental Health*

Indicators	Mean	Std. Deviation	Description
EMOTIONAL WELL-BEING			
1. During the past month, you often felt happy.	3.48	1.14	2 or 3 times a week
2. During the past month, you often felt interested in life.	3.85	1.18	Almost every day
3. During the past month, you often felt satisfied with life.	3.66	1.16	Almost every day
SUM OF MEANS (Emotional Well-being)	10.98		
SOCIAL WELL-BEING			
4. During the past month, you often felt that you had something important to contribute to society.	3.45	1.1	2 or 3 times a week
5. During the past month, you often felt that you belonged to a community.	3.46	1.26	2 or 3 times a week

6. During the past month, you often feel that our society is a good place, or is becoming a better place, for all people.	3.51	1.14	Almost every day
7. During the past month, you often feel that people are good.	3.29	1.1	2 or 3 times a week
8. During the past month, you often felt that the way our society works made sense to you.	3.42	1.05	2 or 3 times a week
SUM OF MEANS (Social Well-being)	17.12		
PSYCHOLOGICAL WELL-BEING			
9. During the past month, you often felt that you liked most parts of your personality.	3.7	1.14	Almost every day
10. During the past month, you often felt good at managing the responsibilities of your daily life.	3.79	1.06	Almost every day
11. During the past month, you often felt that you had warm and trusting relationships with others.	3.45	1.2	2 or 3 times a week
12. During the past month, you often felt that you had experiences that challenged you to grow and become a better person.	4.06	0.99	Almost every day
13. During the past month, you often felt confident in thinking or expressing your ideas and opinions.	3.61	1.05	Almost every day
14. During the past month, you often felt that your life had a sense of direction or meaning to it.	3.94	1.14	Almost every day
SUM OF MEANS (Psychological Well-being)	22.55		
MENTAL HEALTH (OVERALL)	50.65	11.59	Positive mental health

Mental health among students has been the focus of many studies. Even before the COVID-19 pandemic, mental health problems were widespread among college students (Blanco, 2008). With the emergence of the ongoing novel COVID-19 pandemic, students in higher education are faced with increased mental health challenges. Based on the results, however, the students in this study have positive mental health. This may be because these students are living in their homes with the support of their families and peers. This may also be attributed to the fact that most of the respondents are female and young adults, which, according to the study of Gestsdottir et al. (2015), women improve their mental well-being from adolescence to young adulthood.

Results of the study by Sun et al. (2020) showed that perceived available peer support negatively contributed to depressive symptoms. Consequently, it is essential to note that while quarantines are often unpleasant, their effect

on people diverges. While there are individuals who experience mental health issues, there are also those who are more resilient and can move on with their lives. Seligman (2011) argued that even in difficult situations, humans are motivated to thrive and not merely survive.

Academic Performance of College Students in the New Normal

The academic performance of college students in the new normal is shown in Table 4. The mean academic performance of students under study is 2.053 with a standard deviation of 0.57507, which is satisfactory for the descriptive level. This indicates that the students of SPAMAST generally developed fundamental knowledge and skills but needed minimal guidance from instructors or peers.

The data revealed that 29 or 7.95% of the students had obtained grades in the range of 1.00–1.49, which is considered excellent. Students with this grade range exceed the core requirements in terms of knowledge and skills. The leading number of responses is 189 or 51.78%, which falls within the range of 1.50–1.99, categorized as very satisfactory; students with this grade had developed fundamental knowledge and skills. Seventy-one or 19.45% of the students have grades 2.00–2.49, categorized as satisfactory, meaning students at this level developed fundamental knowledge and skills but need minimal guidance from the instructor or peers. Meanwhile, 49 students, comprising 13.42%, obtained a grade between 2.50 and 3.00, which is marginal, meaning students at this level possess the minimum knowledge, skills, and core understanding but need help and guidance from instructors and peers. Unfortunately, 27 or 7.40% of the students fall below 3.00, which has the descriptive level of fail; this means these students did not meet the core requirements in terms of knowledge and skills.

As shown in Table 4, the majority of the students (189 or 51.78%) obtained a grade within the range of 1.50–1.99, with 29 or 7.95% obtaining the highest range of 1.00–1.49 and 27 or 7.40% getting the lowest range below 3.00.

Table 4. *Academic Performance of College Students in the New Normal*

Range of Scores	Descriptive Level	Frequency (F)	Percentage (%)
1.00–1.49	Excellent	29	7.95
1.50–1.99	Very Satisfactory	189	51.78
2.00–2.49	Satisfactory	71	19.45
2.50–3.00	Marginal	49	13.42
Below 3.00	Failure	27	7.4

n=365; %=100; Mean=2.053; SD=±0.57507

The rapid transition to online learning due to COVID-19 has highlighted the risks of student disengagement and the subsequent impact on lower student achievement across multiple courses. According to the independent studies of

Aguilera-Hermida (2020) and Rohman et al. (2020), students prefer face-to-face activities and exhibit negative attitudes and low motivation toward virtual education. Nevertheless, not all students show a decrease in academic performance, and some seem to benefit from this modality (Gonzales et al., 2020).

Many factors influence changes in students' academic performance during the pandemic. As reported in the results, most SPAMAST students obtained satisfactory grades amidst the new standard education system. This may be attributed to the learning continuity plan of SPAMAST, which adopted online and modular learning. Additionally, students have access to technology and the internet, and were given ample time to submit requirements.

Relationships between the Students' Mental Health and Academic Performance

The relationships between the students' mental health and academic performance are presented in Table 5. Analysis revealed an r-value of 0.043 for emotional well-being, a 0.076 r-value for social well-being, and an r-value of 0.053 for psychosocial well-being. The overall mental health of the respondents had an r-value of 0.066, interpreted as a slight correlation. The study failed to reject the null hypothesis and concluded that there was no significant relationship between the students' mental health and academic performance.

These findings align with the study by Hart (2016), which showed that subjective well-being was not significantly related to academic achievement. Similarly, Asgari (2008) found no significant relationship between mental health and academic performance among male and female university students. This is consistent with Keyes (2008), who argued that positive mental health does not simply denote the absence of mental illness. Connected to this, the development of students' mental health and well-being is nonetheless critically important for effective education (Elias et al., 1997; WHO, 2020). While mental health has traditionally been studied in terms of the absence of disorder or adverse outcomes, current understanding suggests that a lack of pathology does not necessarily equate to optimal mental health. Tus (2021) found that students who encounter extreme levels of adverse mental health can still maintain high academic achievement.

Therefore, the results do not imply that mental health has no impact or influence on academic performance in general. Instead, they indicate that among these respondents, mental health does not affect academic performance. This further suggests that whether a student has high or average mental health, they may achieve similar levels of educational performance. Conversely, the results differ from the findings of Bas (2021), who concluded that there was a positive relationship between mental health and academic achievement—a difference which may be ascribed to differences in the populations studied, as the present study focused on college students, while Bas's research addressed adolescents.

It is important to note that although many factors of mental health can be related to academic performance, the results show that, for this sample and context, mental health does not have a direct relationship with academic performance. Within the mental health components considered in this study, no direct influence on academic performance has been demonstrated.

Table 5. *Relationships between the Students' Mental Health and Academic Performance*

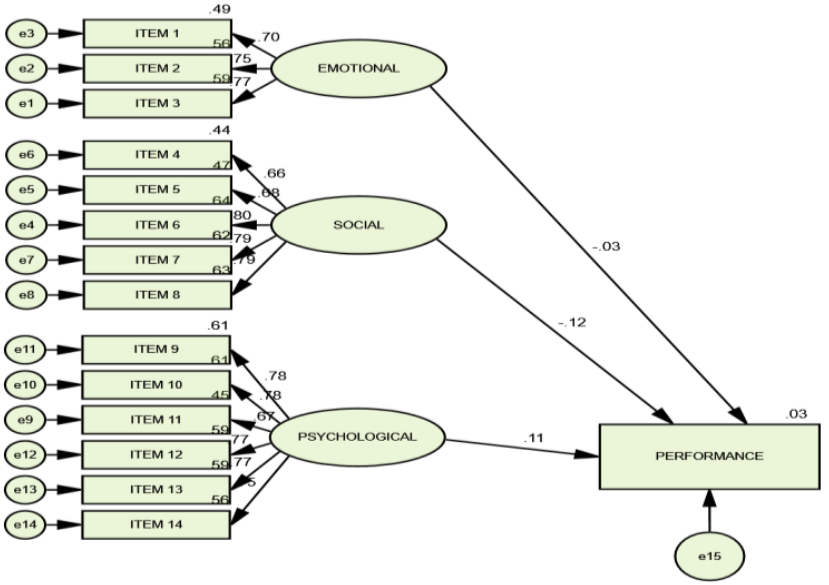
Indicators	r-value	Description	p-value	Interpretation
Emotional well-being	0.043	Slight correlation	0.411	Not Significant
Social well-being	0.076	Slight correlation	0.146	Not Significant
Psychological well-being	0.053	Slight correlation	0.313	Not Significant
Mental Health (Overall)	0.066	Slight correlation	0.206	Not Significant

Structural Model of Mental Health That Best Fits the Academic Performance of College Students

The hypothesized Structural Model 1, as illustrated in Figure 3, indicates that only 3% of the college academic performance of SPAMAST students could be estimated by using the three exogenous constructs in the model, namely emotional well-being (EWB), social well-being (SWB), and psychological well-being (PWB). Furthermore, the model shows that the latent psychological well-being variable exerts a positive influence on the endogenous variable, academic performance. In contrast, both emotional well-being and social well-being negatively impact academic performance within the structural model.

Figure 3

The Hypothesized Structural Model 1



The results of the fit indices of hypothesized Model 1 compared to the recommended critical values are presented in Table 6. The minimum discrepancy divided by its degrees of freedom (CMIN/DF) is 10.400; the P-value is 0.000; the goodness of fit index (GFI) is 0.764; the comparative fit index (CFI) is 0.719; the Tukey Lewis Index (TLI) is 0.665; the normed fit index (NFI) is 0.700; and the root mean square error of approximation (RMSEA) is 0.161. All of these resulting values failed to satisfy the recommended critical values. Hence, generating an improved hypothesized model is recommended.

Table 6. *Test Results of Hypothesized Structural Model 1*

Index	Criterion	Model Fit Value
CMIN/DF	< 3.0	10.4
P-value	> .05	0
NFI	> .95	0.7
TLI	> .95	0.665
CFI	> .95	0.719
GFI	> .95	0.764
RMSEA	< .05	0.161

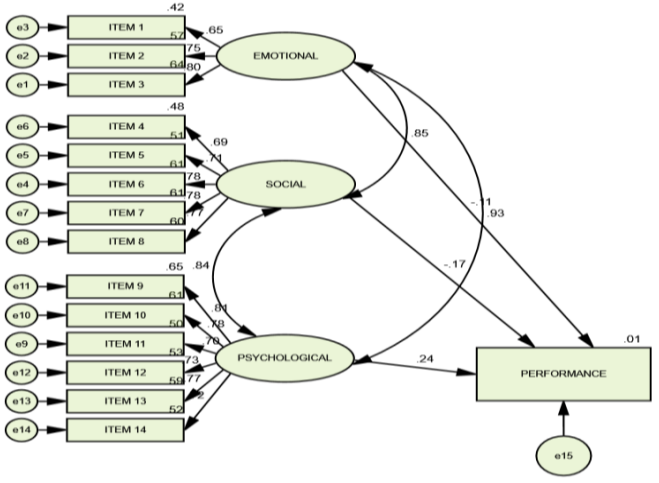
As observed in hypothesized Model 1, the latent variables—emotional well-being (EWB) and social well-being (SWB)—negatively influence academic performance. Modifying and correlating these variables may enhance the model's fit. The resulting model is presented in Figure 4 (the hypothesized structural model 2). This iterative process of model refinement is a crucial part of our research, and we invite you to be part of this journey.

There is a very high correlation between the latent variables EWB and SWB, which yielded an r-value of 0.85. EWB and psychological well-being (PWB) have an r-value of 0.93, indicating a very high degree of correlation between these constructs. At the same time, the variables SWB and PWB are also highly correlated, with an r-value of 0.84. Notably, the effects of EWB and SWB on academic performance remain negative, while PWB's positive influence on academic performance increased from 0.11 in the first model to 0.24 in the second model. The inclusion of these correlations among latent variables reduced the r^2 value of the model from 0.03 to 0.01, suggesting less variance in academic performance was explained by the model.

The fit indices for the second model are presented in Table 7.

Figure 4

The Hypothesized Structural Model 2



The modifications made to the latent variables in hypothesized Model 1 did not enhance the results of the fit indices in hypothesized Model 2. As reflected in Table 7, the resulting values for CMIN/DF, p-value, GFI, CFI, TLI, NFI, and RMSEA all failed to meet the required critical values.

Table 7. *Test Results of Hypothesized Model 2*

Index	Criterion	Model Fit Value
CMIN/DF	< 3.0	3.062
P-value	> .05	0
NFI	> .95	0.915
TLI	> .95	0.927
CFI	> .95	0.941
GFI	> .95	0.907
RMSEA	< .05	0.161

Another modification to the hypothesized model is presented in Figure 5 (Hypothesized Model 3). In this iteration, the constructs under the latent variable social well-being (SWB)—specifically, items 4, 5, and 8—were removed. This modification did not result in any changes to the coefficient of determination (r^2 value), which remained at 0.01. However, it altered the strength of the relationship: the influence of the latent variable SWB on the latent variable psychological well-being (PWB) shifted from a very high to a high correlation.

Figure 5

The Hypothesized Structural Model 3

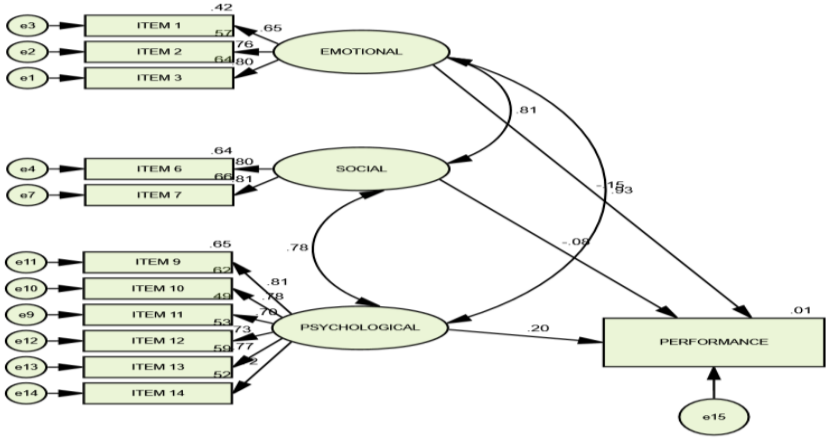


Table 8 presents the resulting fit indices of the hypothesized model 3. Among the indices, they have yet to satisfy the critical values. Another structural model is highly sought.

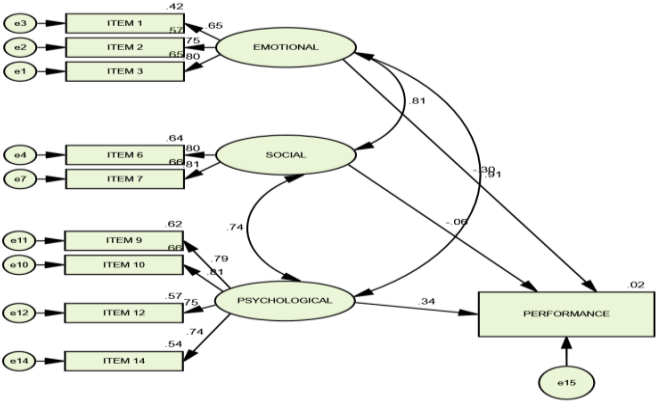
Table 8. *Test Results of Hypothesized Model 3*

Index	Criterion	Model Fit Value
CMIN/DF	< 3.0	3.752
P-value	> .05	0
NFI	> .95	0.92
TLI	> .95	0.919
CFI	> .95	0.94
GFI	> .95	0.916
RMSEA	< .05	0.087

Another modification to the model is needed. This time, the modification is on the latent variable – psychological well-being. Noting that the observed variable positively influences academic performance, removing this might enhance the model. The new hypothesized model 4 is shown in Figure 6. The modification improved the r2 value from 0.01 to 0.02.

Figure 6

The Hypothesized Structural Model 4



The fit indices of the hypothesized Model 4 are illustrated in Table 9. All of the fit indices still needed to be satisfied.

Table 9. *Test Results of Hypothesized Model 4*

Index	Criterion	Model Fit Value
CMIN/DF	< 3.0	4.134
P-value	> .05	0
NFI	> .95	0.93
TLI	> .95	0.919
CFI	> .95	0.946
GFI	> .95	0.933
RMSEA	< .05	0.093

The fifth modification to the model was the removal of selected constructs in all latent variables. In EWB, construct item 3 was removed. In SWB, items 4, 5, and 8 were removed. In PWB, items 9, 11, 12, and 13 were removed. Figure 6 shows the final hypothesized model 5. As observed, there is a massive increase in the r2 value in the model. From 0.02 in the previous model, it is 0.28 now in the final model. In the hypothesized model 5, 28% of the academic performance of SPAMAST students could be estimated by emotional, social, and psychological well-being.

This changed the SWB variable from a negative to a positive influence on the endogenous variable. This also significantly improved the positive impact of PWB on academic performance from 0.34 to 2.83.

Figure 7

The Hypothesized Structural Model 5

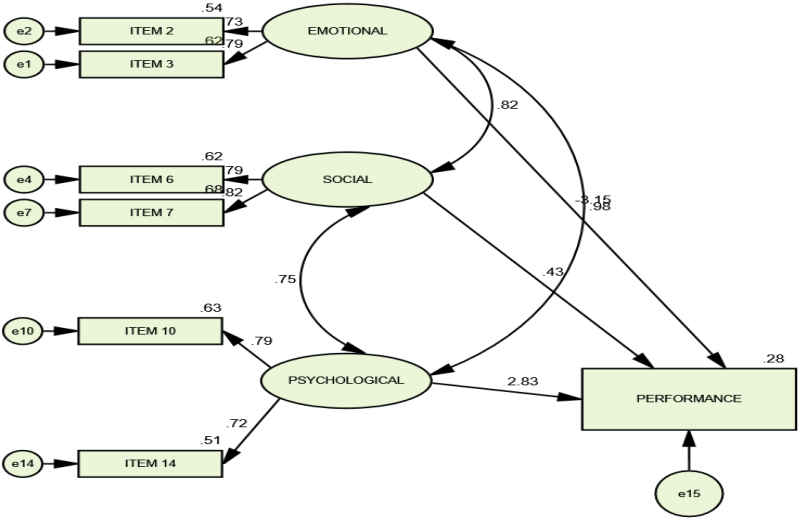


Table 10 shows the fit indices of the hypothesized model 5. All of the indices are satisfactorily met. Hence, the hypothesized model 5 is the best fit for modeling college students' mental health and academic performance in the new normal. In this final model, no modification is suggested, not even in the modification index.

Table 10. *Test Results of Hypothesized Model 5*

Index	Criterion	Model Fit Value
CMIN/DF	< 3.0	1.847
P-value	> .05	0.055
NFI	> .95	0.983
TLI	> .95	0.981
CFI	> .95	0.992
GFI	> .95	0.987
RMSEA	< .05	0.048

Best Fit Structural Model (Hypothesized Structural Model 5)

Based on the best-fit structural model (hypothesized structural model 5), 28% of academic performance could be estimated using the three components of mental health: emotional well-being (EWB), social well-being (SWB), and psychological well-being (PWB). This model not only provides a deeper understanding of the relationship between mental health and academic performance but also offers a promising avenue for developing targeted interventions to improve students' mental well-being and academic success.

In this structural model, the emotional well-being component is best represented by item 2, "happy," and item 3, "satisfied with life," replacing the original three items. Social well-being is represented by item 6, "society is a good place," and item 7, "people are good," covering the original five items. Psychological well-being is represented by item 10, "good at managing responsibilities," and item 14, "life has a sense of direction," relative to the original six items. These practical representations of the components of mental health can guide educators and mental health professionals in identifying and addressing students' specific needs.

Correlation analysis showed that EWB had a very high correlation with SWB (r = 0.82). SWB and PWB also had a high correlation (r = 0.75). EWB and PWB were very highly correlated (r = 0.98). These results indicate that improving one component will consequently enhance the other two components; thus, even participating in a single program or activity that enhances psychological well-being may also improve social and emotional well-being. Likewise, improving self-esteem is likely to enhance happiness and social integration. This interconnectedness suggests that interventions

targeting one component of mental health may have positive spillover effects on other components, potentially improving overall academic performance.

This relationship echoes findings in previous research: emotional support from social ties enhances psychological well-being, which, in turn, may reduce the risk of unhealthy behaviors and poor physical health (Kiecolt-Glaser et al., 2002; Thoits, 1995; Uchino, 2004).

Within the structural model, SWB and PWB positively influence academic performance, with values of 0.43 and 2.83, respectively. However, EWB negatively influences the endogenous variable with a value of -3.15. This result means that improving psychological or social well-being can enhance academic performance—students with high self-esteem or a strong sense of social belonging are more likely to perform better academically. This supports Grabel (2017), who concluded that higher levels of psychological well-being are associated with higher academic achievement.

Conversely, an adverse effect was observed for emotional well-being: the higher the emotional well-being, the lower the academic performance. In this study, students with lower life satisfaction performed better academically than those with higher life satisfaction. This contrasts with the findings of Grace (2020), who found that higher emotional well-being leads to greater academic achievement.

The model is consistent with Walberg's theory of academic achievement, which holds that students' psychological characteristics and immediate environments influence educational outcomes (Reynolds & Walberg, 1992). It also reflects Bandura's Social Cognitive Theory (1978), wherein a person's behavior is influenced by personal factors (such as emotional well-being) and the social environment (such as social well-being). All of these dimensions are highlighted in the best-fit structural model.

CONCLUSION

- Based on the findings, the following conclusions were formulated:
- Most respondents were females, aged 18–24 years old, and single.
- Most students have positive mental health, with psychological well-being as the highest component.
- The students obtained a mean of 2.053 for academic performance, which falls under the satisfactory descriptive level.
- Students' mental health has no significant relationship with academic performance.
- The best-fit structural model explains 28% of academic performance.
- The latent variables, social and psychological well-being, directly affect educational performance, while emotional well-being has an adverse effect. However, emotional well-being is strongly associated with the other latent variables.

RECOMMENDATIONS

Based on the findings of the study, the researcher recommends the following:

1. All individuals, both young and old, are encouraged to engage in activities promoting their mental health and well-being. It is especially encouraged to improve even one component of well-being actively.
2. Schools may initiate programs to empower students' awareness of mental health and its components. Administrators and faculty should implement interventions to ensure students' well-being and promote activities that enhance at least one mental health component.
3. Schools should strengthen flexible learning strategies to improve students' academic performance further.
4. Further research is recommended to explore the other 72% of variables that could explain academic performance beyond mental health. More studies on emotional well-being are suggested to clarify its effects on academic outcomes.
5. Future research should include additional components and indicators of mental health (such as mental illness, stress, depression, and anxiety) to develop a more holistic model linking mental health and academic performance.
6. Further studies should identify specific student factors that contribute to academic success. This information could be used to formulate teaching and learning models best suited to the characteristics of students.

LITERATURE CITED

Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. International Journal of Educational Research Open, 1, 100011.

Bandura, A. (1978). Self-efficacy: Toward a unifying theory of behavioral change. Advances in Behaviour Research and Therapy, 1(4), 139–161.

Bas, G. (2021). Relation between student mental health and academic achievement revisited: A meta-analysis. Health and Academic Achievement – New Findings. https://doi.org/10.5772/intechopen.95766

Cohut, M. (2019). Global Impact of the COVID-19 Pandemic 1-year On. Retrieved from: https://www.medicalnewstoday.com/articles/global-impact-of-the-covid-19-pandemic-1-year-on

Commission on Higher Education (2021). CHED COVID-19 Advisory No. 3. Retrieved from: https://ched.gov.ph/wp-content/uploads/CHED-COVID-2019-Advisory-No.-3.pdf

Elias, M., Zins, J. E., & Weissberg, R. P. (1997). Promoting Social and Emotional Learning: Guidelines for Educators. ASCD.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. Philosophical Transactions: Biological Sciences, 359(1449), 1367–1377. http://www.jstor.org/stable/4142140

Gestsdottir, S., Svansdottir, E., Ommundsen, Y., Arnarsson, A., Arngrimsson, S., Sveinsson, T., & Johannsson, E. (2015). Mental health and physical activity.

Gonzalez, T., De la Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M. (2020). Influence of COVID-19 confinement on students' performance in higher education. PLOS ONE, 15(10), e0239490.

Gräbel, B. F. (2017). The relationship between well-being and academic achievement: A systematic review.

Grace, G. C. A. G. (2020). Psychological strengths contributing to rural students' academic performance in Kadazandusun. Moldavian Journal for Education and Social Psychology, 4(2), 1–19.

Hart, B. (2016). The predictive value of subjective well-being and conscientiousness on academic achievement. (Doctoral dissertation, Indiana State University).

Higgins, M. J., Stephan, P. E., & Thursby, J. G. (2011). Conveying quality and value in emerging industries: Star scientists and the role of signals in biotechnology. Research Policy, 40(4), 605–617.

Huang, R., Liu, D., Tlili, A., Knyazeva, S., Chang, T. W., Zhang, X., ... & Holotescu, C. (2020). Guidance on open educational practices during school closures: Utilizing OER under the COVID-19 pandemic in line with UNESCO OER recommendation. Beijing: Smart Learning Institute of Beijing Normal University.

Irfan, U. (2016). Mental health and factors related to mental health among Pakistani university students.

Keyes, C. L. M. (2005). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. American Psychologist, 62, 95–108.

Keyes, C. L. M. (2009). The nature and importance of mental health in youth. In R. Gilman, M. Furlong, & E. S. Heubner (Eds.), Promoting Wellness in Children and Youth: A Handbook of Positive Psychology in the Schools (pp. 9–23). New York: Routledge.

Kiecolt-Glaser, J. K., McGuire, L., Robles, T.F., & Glaser, R. (2002). Emotions, morbidity, and mortality: New perspectives from psychoneuroimmunology. Annual Review of Psychology, 53(1), 83–107.

Kutob, R. M., Yuan, N. P., Wertheim, B. C., Sbarra, D. A., Loucks, E. B., Nassir, R., ... & Thomson, C. A. (2017). Relationship between marital transitions, health behaviors, and health indicators of postmenopausal women: Results from the Women's Health Initiative. Journal of Women's Health, 26(4), 313–320.

Patnaik, G. (2021). Positive Psychology for Improving Mental Health & Well-Being. Notion Press.

Reynolds, A. J., & Walberg, H. J. (1992). A structural model of science achievement and attitude: An extension to high school. Journal of Educational Psychology, 84(3), 371.

Rohman, M., Marji, D. A. S., Sugandi, R. M., & Nurhadi, D. (2020). Online learning in higher education during the COVID-19 pandemic: Students' perceptions. Journal of Talent Development and Excellence, 12, 3644–3651.

Seligman, M. E. P. (2011). Flourish: A visionary new understanding of happiness and well-being (1st Ed.). New York: Free Press.

Sun, Y., Bao, Y., & Lu, L. (2020). Addressing mental health care for the bereaved during the COVID-19 pandemic. Psychiatry & Clinical Neurosciences, 74(7).

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? Journal of Health and Social Behavior, 53-79.

Tus, J. (2021). Amidst the online learning in the Philippines: The parental involvement and its relationship to the students' academic performance. International Engineering Journal for Research & Development, 6(3), 1–15.

Uchino, B. N. (2004). Social support and physical health: Understanding the health consequences of relationships. Yale University Press.

Wang, Y., Zhang, Y., Bennell, K., White, D. K., Wei, J., Wu, Z., ... & Lei, G. (2020). Physical distancing measures and walking activity in middle-aged and older residents in Changsha, China, during the COVID-19 epidemic period: longitudinal observational study—Journal of Medical Internet Research, 22(10), e21632.

World Health Organization (2020). Coronavirus. Retrieved from: https://www.who.int/healthtopics/coronavirus#tab=tab_1