



# MODELING STUDENTS' HAPPINESS AND COPING BEHAVIOR IN LEARNING MATHEMATICS AMID THE COVID-19 PANDEMIC

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Being a happy student during unprecedented times depends on coping behavior that lessens their anxiety level while learning. This article stresses to explain the level of happiness and coping behavior amid the COVID-19 pandemic while learning mathematics online. The study also determines the different factors of happiness and coping behavior using a statistical model. Primary data were gathered through a Google form survey of 233 students at Visayas State University during the second semester of the academic year 2021-2022. Results showed that students are moderately happy and coping with learning mathematics amid the challenges they have experienced in distance learning. The findings revealed that the students' happiness level is dependent on their coping strategies in learning. Hence, students coping behavior in the learning process will positively influence their well-being and cognitive thinking. The regression model (I) reveals that the factor of being a happy student in learning mathematics is to have an older age or more experience. In addition, students are happy if their teachers are helping them with their learning activities online. Meanwhile, the regression model (II) depicted that the students' coping behavior is influenced by study habits, money spent on their internet load, teacher support, and teachers' strategies on how the learning environment is comfortable. Hence, teachers must develop a positive attitude towards their students and give them activities that are suitable and appropriate for online learning. Furthermore, it is recommended that the mathematics curriculum must be enhanced concerning distance education and students' well-being.

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## 1. INTRODUCTION

Being a happy student amid an unprecedented situation is correlated with the level of coping behavior (Azizi, 2012). Especially in the time of the COVID-19 pandemic, where the happiness or well-being of students in learning is relatively low due to the difficulties they have experienced (Amendola et al., 2021; Cassibba et al., 2021). According to Casinillo and Casinillo (2020), happiness is a very important indicator in their cognitive learning behavior in mathematics as a source of motivation. In fact, a happy student will persevere even in the midst of difficulties or with little prospect of a successful situation. The study by Xu et al. (2019) stated that happiness levels can strengthen college students against stressful learning and can improve their adaptation to student life. It is worth noting that happiness is characterized as a positive attitude and a positive disposition to life experiences as well as satisfaction and enjoyment in their doings (Joodat & Zarbakhsh, 2015; Lee et al., 2021). The coping mechanism of students is helpful in increasing their level of happiness since it adapts to a kind of learning stress during the pandemic. Baloran (2020) depicted that coping strategies can enhance control over students' attitude that gives mental comfort amidst challenges. Hence, if a student has the right coping mechanism during unprecedented times, then the student can learn without hesitation or anxiousness which leads to happiness.

Among many State Universities in the Philippines, Visayas State University is one of the schools that shifted to online learning (distance education) where barriers, limitations, and problems are existing especially the issue of internet connections of both teachers and students, particularly in the rural areas. (Casinillo et al., 2022). In fact, learning mathematics during distance education is less creative and enjoyable which adversely affects the well-being of students (Casinillo, 2022a). In that case, students' level of happiness in learning mathematics is relatively low as they are facing the challenges of online mathematics activities. In the study by Schiffrin and Nelson (2010), it is depicted that an individual that has experienced stress is more likely to have a low happiness level, that is, happiness and stress are inversely proportional. Apparently, most of the students during the pandemic are facing anxiety and stressful experience in learning, hence, it needs to reduce the stress level to lighten up their interest and happiness (Jazayeri et al., 2022). In that case, students must be

taught coping strategies to lessen the burden of anxiousness and depression. According to Baloran (2020), in order for the students to continue learning as effectively as they can during the pandemic, they utilized various coping mechanisms to survive the health challenges and obstacles for their online learning. In fact, students are doing some ways how to cope to maintain their life functioning as a student. It is mentioned in the study by Saperia et al. (2018) that a high level of life functioning can increase the happiness level of an individual. On the face of it, to create a good strategic way on how to cope with challenges in online learning during the pandemic, it is necessary to study the causal factors and relationship between coping behavior and the happiness level of students (Valladolid, 2021; Gaeta et al., 2021).

Determining the level of happiness and coping behavior of students during the pandemic is well-studied and well-research; however, modeling its causal factors and its relationship is scarce in mathematics education literature, particularly, in the rural areas of Leyte, Philippines. Hence, the researcher decided to conduct this timely study. Generally, the main aim of this study is to elucidate the determinants of the students' happiness level and coping mechanism in learning mathematics as well as the relationship between the said two variables. In that case, the study's succeeding specific objectives are as follows: (1) to describe the MMW students' profile; (2) to mensurate the level of happiness and coping behavior of students in learning mathematics online; and (3) to determine the significant influencing factors of the level of happiness and coping behavior with the aid of a statistical model. The study's purpose is to improve the existing policies in mathematics education that favors the students' well-being while following the health protocols and online learning barriers. In addition to that, the results of this study might provide useful information for teachers and students that may help them increase their happiness in the teaching-learning process. The findings of this study may also enhance their coping behavior during the pandemic to lessen their stress and anxiety level. Furthermore, the study may contribute to the body of knowledge concerning teaching and learning online and may serve as baseline information for researchers in education.

## 2. CONCEPTUAL FRAMEWORK

According to Forte et al. (2020), the COVID-19 pandemic has caused a lessening in happiness levels and a growth in anxiety and stress. In fact, the impact of the pandemic has not dodged the well-being of students concerning their online education. Students are facing some difficulties in the acquisition of content

knowledge for lessons, especially, in mathematics topics (Casinillo et al., 2022). Irfan and colleagues (2020) depicted that one of the problems encountered by students is the technical problem with the internet connection, especially for students living in rural areas. On the face of it, teachers and students have less interaction during the discussion, and teachers are having difficulty monitoring their feedback and assessing students' learning. Hence, distance education is not as effective as opposed to face-to-face classes due to the barriers and limitations (Agustina & Cheng, 2020).

According to Casinillo and Casinillo (2020), the happiness or subjective well-being of students is influenced by their demographic profile and classroom experiences. Additionally, during the COVID-19 pandemic, Dragun et al. (2020) discovered that the well-being of students depends on their lifestyle status and habits during the lockdown. Likewise, Short et al. (2020) depicted that happiness is correlated to the coping mechanism and resilience of students during distance learning. Moreover, Voltmer and colleagues (2021) stated that the coping behavior of students has influenced factors during the pandemic. Likewise, Holahan and Moos (1987) stated that coping has personal and contextual factors. Thus, the conceptual framework of this study considers determining the various factors affecting the happiness and coping behavior of students. Furthermore, the framework also elucidates the relationship between students' happiness and coping mechanisms during the pandemic as they experienced the online learning setup.

### 3. METHODOLOGY

The study's design dealt with complex-correlational research to explain students' happiness and coping behavior predictors as well as their relationship during the COVID-19 pandemic. A bonafide Mathematics in the Modern World (MMW) student of Visayas State University, Philippines, that is currently enrolled in the second semester of the academic year 2021-2022 comprises the population of interest. Before the conduct of the survey, an ethical procedure was strictly accomplished as follows: (1) the MMW teachers were informed via consent letter, and (2) students were oriented that the survey data gathered from them are treated confidential and their participation is by choice. Google form survey was employed since the students were under distance learning and the researcher also followed the health protocols in the University. In that case, it is expected that not all MMW students can participate due to some limitations like internet connection. Hence, the study considers convenience sampling in which students who are

willing to participate in the survey will be automatically part as the respondents. The Google form was sent to the individual email of all MMW students and they were given one month to respond. After one month, the survey was stopped, and there were 233 students who successfully and completely filled up the Google form questionnaire.

The research instrument of this study consists of the following content: (Part 1) a profile of MMW students; (Part 2) a happiness questionnaire; and (Part 3) a coping behavior questionnaire. As for the profile questionnaire, students are asked with the following: age, sex, hometown (rural or urban), hours studying mathematics lessons in a week, amount of money spent for the internet load (PHP per week), submission of outputs on-time (No, Yes), teacher support online (No, Yes), the teacher makes the classroom comfortable and enjoyable (No, Yes), and the teacher was helping with mathematics problem activities (No, Yes). For part 2, a 4-item scale questionnaire adapted from Lyubomirsky and Lepper (1999) was employed which is designed to measure the students' happiness level during the pandemic. Each of these questions is accomplished by selecting one of the 7 options (Scale of 1 to 7). In computing the perception score of students, the sum scores in each question were employed. This indicates that 1 is very unhappy and 7 is very happy. The happiness instrument scale has a reliability coefficient of 0.620, which implies that it is an acceptable instrument (Cronbach, 1951; Taber, 2018). Table 1 presents the interval of values of perception scores of students' happiness levels and their verbal interpretation.

Table 1. Interval of perception scores and its verbal meaning

| Perception Score | Verbal Meaning   |
|------------------|------------------|
| 23.21 - 28.00    | Very Happy       |
| 18.41 - 23.20    | Happy            |
| 13.61 - 18.40    | Moderately happy |
| 8.81 - 13.60     | Unhappy          |
| 4.00 - 8.80      | Very unhappy     |

Source: Author's own guideline.

For part 3, another 13-item scale questionnaire was adapted from Holahan and Moos (1987) which captures the coping strategies of students during the COVID-19 pandemic. Students were asked to choose 4 options (Scale of 1 to 4) for each question as follows: 1 - Not true about me, 2 - A little true about me, 3 - Somewhat true about me, 4 - Mostly true about me. In that case, in getting the perception score of students, scores for all items were summed. A lower perception score indicates a student with a low level of coping and a higher perception score indicates a student with a high level of coping during the

pandemic. The instrument for the coping scale has a reliability coefficient of 0.802, which indicates that it is reliable and considered a good instrument (Cronbach, 1951; Taber, 2018). Table 2 depicts the interval of perception score for coping strategies and their verbal interpretation.

Table 2. Interval of perception scores and its verbal meaning

| Perception Score | Verbal interpretation |
|------------------|-----------------------|
| 44.21 - 52.00    | High coping           |
| 36.41 - 44.20    | Coping                |
| 28.61 - 36.40    | Moderately coping     |
| 20.81 - 28.60    | Low coping            |
| 13.00 - 20.80    | Not coping            |

Source: Author's own guideline.

According to the findings of Carifio and Perla (2008), and Norman (2010), parametric methods in statistics can be employed even in ordinal data with no significant difference in regard to the outcome as opposed to non-parametric methods. On the face of it, standard descriptive statistics were used to summarize the data gathered such as mean, standard deviation (Std dev.), minimum (min), and maximum (max) values. In addition, Pearson correlation and simple regression analysis were employed to determine the association between happiness and the coping level of students amid the pandemic by treating the scores as continuous variables. Although the randomness assumption is being violated due to the unprecedented situation during the pandemic, there are studies that are using regression modeling for non-probabilistic samples that present statistical soundness or robustness (Gschwend, 2005; Acar et al., 2017). Henceforth, multiple regression analysis and its diagnostics were made use of in determining the significant factors affecting the students' happiness and coping behavior. The regression models are presented as follows:

$$Happiness_i = \partial_0 + \partial_1 Age_i + \partial_2 Male_i + \partial_3 Urban_i + \partial_4 HoursStudy_i + \partial_5 Moneyspent_i + \partial_6 Submission_i + \partial_7 Tsupport_i + \partial_8 Tcomfortable_i + \partial_9 Thelping_i + \varepsilon_i$$

and

$$Coping_i = \pi_0 + \pi_1 Age_i + \pi_2 Male_i + \pi_3 Urban_i + \pi_4 HoursStudy_i + \pi_5 Moneyspent_i + \pi_6 Submission_i + \pi_7 Tsupport_i + \pi_8 Tcomfortable_i + \pi_9 Thelping_i + e_i$$

where  $Happiness_i$  and  $Coping_i$  are dependent variables in the regression that represents the level of happiness and coping, respectively. In addition,  $i = 1, \dots, n$

and  $n$  refer to the number of students,  $\partial_j, \pi_j (\forall j \in \{0, 1, \dots, 9\})$  refers to the coefficients,  $Age_i$  represents the age of students,  $Male_i$  is a dummy variable that refers to a male student,  $Urban_i$  is a dummy variable that captures a student living in urban areas,  $HoursStudy_i$  represents to the hours of studying mathematics within a week,  $Moneyspent_i$  refers to the amount of money spent for internet load,  $Submission_i$  is a dummy variable that captures a student who submitted their outputs on time,  $Tsupport_i$  is a dummy variable that captures students who say yes for teachers support in learning,  $Tcomfortable_i$  is a dummy variable that captures students who say yes for teachers making learning comfortable,  $Thehelping_i$  is a dummy variable that captures students who say yes for teachers helping them learn, and  $\varepsilon_i$  and  $e_i$  represent to the random errors. Furthermore, all statistical calculations were made with the aid of STATA version 14.0.

#### 4. RESULTS AND DISCUSSION

##### *MMW Students' Profile*

Table 3 shows descriptive statistics for the profile of MMW students. The student's average age is close to 19.67 (SD=1.90) with the youngest of 18 years old and the oldest being 34 years old. There are 31% of male students and 69% of female students. About 24% of them are living in urban places and 76% are living in rural areas. This result is consistent with the study by Casinillo and colleagues (2022) that most of the students at VSU are living in rural areas where internet connectivity is somewhat problematic. The average hours of students studying mathematics in a week are close to 4.78. Additionally, some students do not study their lessons and there is a student/s who studies their mathematics lesson for about 48 hours a week (maximum). On average, students will spend 193.27 PHP for internet consumption within a week.

About 56% of these students are submitting the learning activities and assessments on time and 44% of these students are submitting their outputs late to the required deadline. Apparently, 58% of the students said that their mathematics teachers are supportive of their learning experience during the online class and 42% of these students said no. About 96% of the students said that their teachers have made the online class comfortable and doable for the students. And only a few (4%) of the students said that their teacher does not make the online class comfortable for them. Moreover, 94% of the students have an experience that their mathematics teachers are helping them to understand the lesson in a friendly way and giving them the opportunity and ample time to answer their mathematics

tasks and activities. Lastly, about 6% of these students say that their teachers are not helping them in learning mathematics during the pandemic.

Table 3. Descriptive statistics for students' profile

| Variables  | Mean   | Std dev. | min | max  |
|--|--------|----------|-----|------|
| Age  | 19.67  | 1.90     | 18  | 34   |
| Male <sup>a</sup>  | 0.31   | 0.46     | 0   | 1    |
| Urban <sup>a</sup>   | 0.24   | 0.43     | 0   | 1    |
| Number of hours studying mathematics<br>(weekly)                 | 4.78   | 6.71     | 0   | 48   |
| Amount of money spent on internet (in<br>Peso/week) <sup>b</sup> | 193.27 | 301.17   | 0   | 2500 |
| Submission of outputs on-time <sup>a</sup>                       | 0.56   | 0.50     | 0   | 1    |
| Teacher support online <sup>a</sup>                              | 0.58   | 0.49     | 0   | 1    |
| Teacher makes the classroom comfortable <sup>a</sup>             | 0.96   | 0.19     | 0   | 1    |
| Teacher were helping <sup>a</sup>                                | 0.94   | 0.23     | 0   | 1    |

Note: a - dummy variable; b - Philippine Peso (PHP). Source: Author's own computation.

### *Students' Happiness and Coping*

It is evident that, on average, students are just moderately happy (Mean=18.38, SD=3.81) as they experience the challenges of distance education (Table 4). This result is parallel to the findings of Casinillo (2022a) that mathematics is moderately creative and enjoyable due to the difficulties brought on by the health crisis. This implies that students are facing some limitations and obstacles as they learn mathematics online. In fact, the barriers to online education cause them to experience an uncomfortable learning environment and cause them to feel anxiety and stress (Baloran, 2020). On the face of it, students' happiness or well-being in learning mathematics is adversely affected.

On the other hand, students are moderately coping (Mean=35.51, SD=5.79) during the pandemic (Table 4). This means that MMW students are having their coping strategies in learning mathematics which refer to cognitive tactics to survive and manage the difficulties that they are experiencing during the crisis. In that case, a coping mechanism allows students to continue learning while being resilient to the unprecedented situation (Valladolid, 2021; Voltmer et al., 2021). Coping is very useful for their thoughts and action to deal with difficult times and somehow manage the anxiety and depression of online learning. Hence, students' coping can help them tackle different situations and help them be creative in their mathematics online class.

Moreover, it is found that students' happiness level and coping level is correlated (p-value<0.001) with each other (Table 4). The Pearson correlation



( $r_p=0.294$ ) can be interpreted as a weak correlation but significant at a 1% level (Albert, 2008). This means that if the students' coping is increasing, then students' well-being or happiness also increases. According to Valladolid (2021), coping has an important role in maintaining the well-being of students amid the COVID-19 pandemic. In fact, the coping mechanism of students is a behavior that manages the challenges and obstacles that they are facing. Coping strategies also deal effectively during stressful situations and develop the self-discipline to find a solution to every problem. Hence, good coping strategies for students can enhance their well-being, enjoyment of learning, and cognitive creativity during their online learning (Baloran, 2020; Savitsky et al., 2020; Casinillo, 2022a).

Table 4. Descriptive statistics for students' happiness and coping

|                        | Mean  | Std dev. | Description       | Correlation | p-value |
|------------------------|-------|----------|-------------------|-------------|---------|
| <b>Happiness level</b> | 18.38 | 3.81     | Moderately happy  | 0.294*      | <0.001  |
| <b>Coping level</b>    | 35.51 | 5.79     | Moderately Coping |             |         |

Note: a - See Tables 1 and 2; \* - significant at 1% level. Source: Author's own computation.

Based on Table 5, it can be gleaned that the simple regression model ( $F_c=21.91$ ,  $p\text{-value}<0.001$ ) is significant at a 1% level and possesses a coefficient of determination of 0.087. This means that the coping level of students can explain the variation in their happiness levels. In fact, the model revealed that in every 1 unit increase in coping perception score there is a 0.194 increase in students' happiness level and it is significant at a 1% level. This result can also be visualized in Figure 1, which shows that the regression equation line has a positive slope, that is, rising to the right. This means that the coping behavior of students can positively influence their well-being in learning mathematics online. This result is in accord with the study by Valladolid (2021) that students' coping strategies for being resilient to distance learning have a positive role in the well-being of students at the college level. Likewise, Gaeta et al. (2021) stated that having a coping behavior will influence students' attitude and emotions that will reduce their anxiety and stress during online learning, and progresses their motivational behavior and enjoyment of learning.

Table 5. Simple linear regression (OLS) model (Dependent variable: Happiness level)

|              | Coefficient | Std Error | p-value |
|--------------|-------------|-----------|---------|
| Coping level | 0.194*      | 0.041     | <0.001  |
| Constant     | 11.49*      | 1.49      | <0.001  |
| Observation  |             |           | 233     |
| F            |             |           | 21.91   |
| p-value      |             |           | <0.001  |
| R-squared    |             |           | 0.087   |

Note: a - See Table 1; \* - significant at 1% level. Source: Author's own computations.

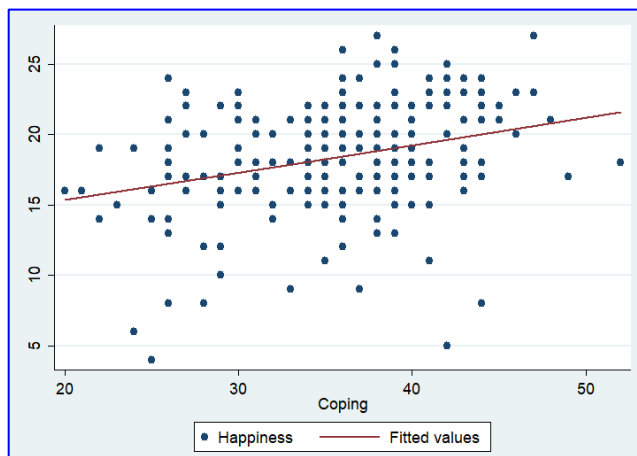


Figure 1. Scatter plot and model line for students' happiness and coping. Source: Authors' own construction.

### Factors of Students' Happiness and Coping

It is revealed in Table 6 that the two regression models (Model I:  $\chi^2=0.65$ ,  $p$ -value=0.419; Model II: Model I:  $\chi^2=2.23$ ,  $p$ -value=0.135) are homoscedastic, that is, the variances in the models are statistically equal. Based on the Ramsey RESET test, it is shown that the first model has no omitted variable bias (Model I:  $F_c=0.51$ ,  $p$ -value=0.67), however, the second model (Model II:  $F_c=5.54$ ,  $p$ -value=0.001) indicates an omitted variable bias which is significant at 1% level. Additionally, the two models have no problem with multicollinearity, that is, the predictor variables are not pairwise statistically correlated since the average variance inflation factor is lesser than 10 (Allison, 2012). Moreover, it can be gleaned that the residuals of a model I ( $W=0.992$ ,  $p$ -value=0.257) are statistically normally distributed. On the other hand, model II ( $W=0.976$ ,  $p$ -value=0.001) reveals non-normal residuals based on the Shapiro-Wilk W test. However, the Kernel density

estimate graph for model II residuals has shown that it is almost normal as can be seen in Figure 2 below.

Table 6. Some diagnostic tests for multiple regression models

| Model | Assumptions               | Test Statistic            |                  | p-value | Decision |
|-------|---------------------------|---------------------------|------------------|---------|----------|
| I     | Heteroscedasticity        | Breusch-Pagan             | $\chi^2=0.65$    | 0.419   | No       |
|       | Omitted variable bias     | Ramsey RESET              | $F_c=0.51$       | 0.673   | None     |
|       | Multicollinearity problem | Variance inflation factor | Average VIF=1.13 | -       | None     |
|       | Normality of residuals    | Shapiro-Wilk W            | W=0.992          | 0.257   | Yes      |
| II    | Heteroscedasticity        | Breusch-Pagan             | $\chi^2=2.23$    | 0.135   | No       |
|       | Omitted variable bias     | Ramsey RESET              | $F_c=5.54$       | 0.001   | Yes      |
|       | Multicollinearity problem | Variance inflation factor | Average VIF=1.13 | -       | None     |
|       | Normality of residuals    | Shapiro-Wilk W            | W=0.976          | 0.001   | No       |

Source: Author's own computation.

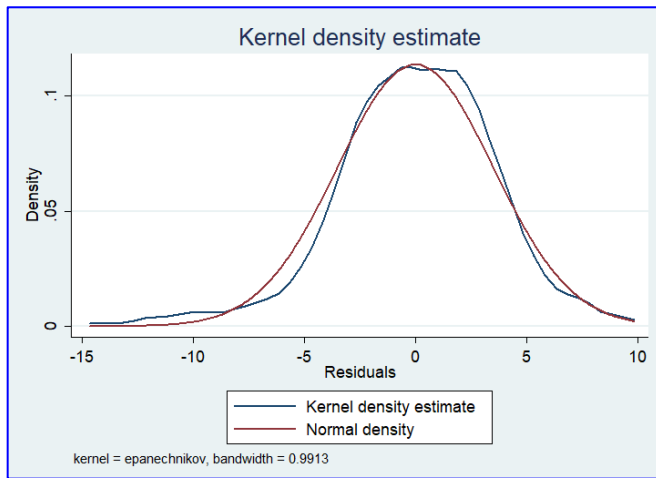


Figure 2. Kernel density and normal graphs for Model (II).

Source: Authors' own construction.

Table 7 reveals that the regression model I ( $F_c=4.48$ , p-value=0.001) is significant at a 1% level. This implies that there are statistically significant factors affecting the students' level of happiness in learning mathematics amid distance

learning. In addition, the goodness-of-fit or coefficient of determination has revealed a model fit of  $R^2 = 0.153$ . In particular, model (I) has shown that the age of students (p-value=0.060) and the mathematics teachers' help (p-value<0.001) are significant predictors of happiness level in learning mathematics online. Model (I) reveals that older students are happier in learning mathematics. This implies that older students are more mature in dealing with the challenges and difficulties during the pandemic. In the study by Casinillo (2020b), it is stated that younger students are having difficulties in facing their online activities due to the barriers brought on by the pandemic. Hence, younger students are experiencing low well-being in their online learning environment. Moreover, the teachers' help with classroom activities and tasks has contributed to the happiness level of students. This means that students are feeling easy when their teachers are doing their part as a helper in dealing with their difficulties by applying flexible activities (Tarrayo and Anudin, 2021). However, model (I) also reveals that the following variables are not statistically influencing the students' happiness: (1) sex of students (p-value=0.467), (2) place of residence (p-value=0.939), (3) hours in studying mathematics (p-value=0.512), (4) money spent for internet (p-value=0.354), (5) submission of outputs (p-value=0.620), (6) teacher supports (p-value=0.305), and (7) teachers' effort in making the classroom comfortable (p-value=0.966).

Table 7. Regression model (I) for the level of happiness and its factors

| <b>Factors of happiness</b>  | <b>Coefficient</b>   | <b>Std Error</b> | <b>p-value</b> |
|--|----------------------|------------------|----------------|
| Constant   | 8.444**              | 2.700            | 0.002          |
| Age  | 0.236*               | 0.125            | 0.060          |
| Male <sup>a</sup>  | 0.347 <sup>ns</sup>  | 0.513            | 0.467          |
| Urban <sup>a</sup>   | -0.043 <sup>ns</sup> | 0.566            | 0.939          |
| Number of hours studying mathematics ( <i>weekly</i> )                 | -0.023 <sup>ns</sup> | 0.035            | 0.512          |
| Amount of money spent on internet ( <i>in Peso/week</i> ) <sup>b</sup> | 0.001 <sup>ns</sup>  | 0.001            | 0.354          |
| Submission of outputs on-time <sup>a</sup>                             | -0.238 <sup>ns</sup> | 0.479            | 0.620          |
| Teacher support online <sup>a</sup>                                    | 0.503 <sup>ns</sup>  | 0.489            | 0.305          |
| Teacher makes the classroom comfortable <sup>a</sup>                   | -0.062 <sup>ns</sup> | 1.469            | 0.966          |
| Teacher were helping <sup>a</sup>                                      | 5.648**              | 1.246            | <0.001         |
| <b>Number of Participants</b>  | 233                  |                  |                |
| <b>F-computed</b>  | 4.48                 |                  |                |
| <b>p-value</b>   | <0.001               |                  |                |
| <b>The goodness of fit (<math>R^2</math>)</b>                          | 0.153                |                  |                |

Note: a - dummy variable; b - Philippine Peso (PHP); ns- not significant; \*\* - significant at 1%  $\alpha$  level; \* - significant at 10%  $\alpha$  level. Source: Author's own computation.

It can be gleaned in Table 8 that the regression model II ( $F_c=2.45$ , p-value=0.011) is significant at a 5% level. This depicts that there are significant causal factors influencing the students' level of coping in learning mathematics

during the new normal. In fact, the coefficient of determination has revealed a model fit of  $R^2=0.090$ . On the face of it, model (II) has revealed that the hours in studying mathematics (p-value=0.077), money spent on the internet (p-value=0.040), teachers' support online (p-value=0.100), and teacher making the classroom comfortable (p-value=0.033) are the significant influencing factors of coping level of students in learning. In that case, if the students study more or spend more time doing the required tasks, their level of coping is decreasing. This means that if they encounter difficulties in their mathematics lesson and they are trying to understand it amid the new normal, they become anxious and depressed. According to Bashedi et al. (2021), anxiety and depression during the pandemic can negatively affect the students' coping behavior and learning process. Also, model (II) has revealed that if student spends less on the internet, they are more likely to have a low coping mechanism. Since the nature of distance learning is to browse the internet, students that cannot access will have low learning ability. In other words, it is difficult for the students to cope without good internet connectivity and it leads to negative stimuli in learning. It is worth noting that the pandemic is also an economic crisis where students are having difficulty acquiring money for internet load and other school fees (Adhe et al., 2020; Casinillo et al., 2022).

Moreover, students have developed good coping behavior in learning online if their teachers are supportive in every classroom activity. In that case, a teacher's encouragement will help students to have a good learning attitude despite the challenges that they are facing. In the study by Pressley and Ha (2021), virtual teaching amid the pandemic will be effective if teachers must develop home-school cooperation and strengthen the students' self-efficacy. Likewise, students' coping behavior will be improved if the teachers are making the learning environment comfortable and attainable for the students. According to Hughes et al. (2020), teaching during the normal must be enhanced concerning the well-being of students to maintain their wellness and good health. Casinillo and colleagues (2022) have recommended that teachers must show a positive attitude and give interesting mathematics activities to students to lessen their stress and anxiety. On the other hand, model (II) also revealed some variables that are not significant factors of the coping level of students as follows: (1) age of students (p-value=0.303), (2) sex of students (p-value=0.532), (3) place of residence (p-value=0.608), (4) submission of outputs (p-value=0.619), and (5) teachers' help (p-value=0.823). This means that demographic profile, submission of outputs in mathematics, and teachers' help in their online class does not influence their coping ability during the pandemic.

Table 8. Regression model (II) for the level of coping and its factors

| <b>Factors of coping</b>   | <b>Coefficient</b>   | <b>Std Error</b> | <b>p-value</b> |
|--|----------------------|------------------|----------------|
| Constant   | 34.372***            | 4.249            | <0.001         |
| Age  | -0.203 <sup>ns</sup> | 0.196            | 0.303          |
| Male <sup>a</sup>  | -0.505 <sup>ns</sup> | 0.807            | 0.532          |
| Urban <sup>a</sup>   | 0.457 <sup>ns</sup>  | 0.891            | 0.608          |
| Number of hours studying mathematics ( <i>weekly</i> )                 | -0.098*              | 0.056            | 0.077          |
| Amount of money spent on internet ( <i>in Peso/week</i> ) <sup>b</sup> | -0.002**             | 0.001            | 0.040          |
| Submission of outputs on-time <sup>a</sup>                             | 0.375 <sup>ns</sup>  | 0.754            | 0.619          |
| Teacher support online <sup>a</sup>                                    | 1.264*               | 0.770            | 0.100          |
| Teacher makes the classroom comfortable <sup>a</sup>                   | 4.961**              | 2.311            | 0.033          |
| Teacher were helping <sup>a</sup>                                      | -0.439 <sup>ns</sup> | 1.961            | 0.823          |
| <b>Number of Participants</b>  | 233                  |                  |                |
| <b>F-computed</b>  | 2.45                 |                  |                |
| <b>p-value</b>   | 0.011                |                  |                |
| <b>The goodness of fit (R<sup>2</sup>)</b>                             | 0.090                |                  |                |

Note: a - dummy variable; b - Philippine Peso (PHP); ns- not significant; \*\*\* - significant at 1%  $\alpha$  level; \*\* - significant at 5%  $\alpha$  level; \* - significant at 10%  $\alpha$  level. Source: Author's own computation.

## 5. CONCLUSION AND RECOMMENDATIONS

The article's main aim is to explain the students' happiness level and coping level in learning mathematics during the new normal. Results showed that students are just moderately happy with learning mathematics online due to some challenges they have encountered in distance education. However, despite the challenges and difficulties, these students are coping. This means that they are having a coping mechanism to be resilient and to have a positive attitude toward their learning process. The result also showed that the students' happiness and coping behavior are significantly and positively correlated. This implies that as the students possess a coping strategy in dealing with their lesson activities, they are more likely to be happy students in learning. Moreover, the findings of this study revealed that the factors of being a happy student are having an older age or more experienced, and teachers are helping them with their learning tasks and activities in mathematics. In addition to that, it is also concluded that the students' coping behavior is influenced by study habits, money spent for their internet access, teachers' support in the online class, and teachers' strategies on how the learning environment is comfortable for their students. Conclusively, mathematics teachers must create a favorable learning environment that will enhance the students' coping attitude to progress their happiness or enjoyment in learning mathematics during the pandemic. Hence, it is recommended that to enhance the coping

mechanism of students in learning, teachers must give interesting mathematics activities that are doable and suitable for online learning. Moreover, the administration of the University must provide rigorous training for their teachers in connection to curriculum enhancement that is appropriate and desirable for students' well-being amid the distance learning procedure. A similar survey in other Universities in the Philippines and incorporating other variables such as students' mathematics anxiety, resilience level, self-efficacy, and students' innovativeness is an interesting future study to supplement the current findings.

## 6. CONFLICT OF INTEREST

The author declares that no conflict of interest exists.

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