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La resiliencia académica de los estudiantes frente al compromiso escolar a través del apoyo emocional percibido del instructor, y la variación de género

Academic resilience of students to school engagement through perceived emotional support from the instructor, and gender variation

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RESUMEN

Los estudiantes con alta resiliencia académica tienden a afrontar y superar los impedimentos a lo largo del proceso educativo. Los trabajos académicos publicados han acentuado que los estudiantes con resiliencia académica están más comprometidos con la escuela que sus homólogos. Los estudios también han subrayado la importancia del apoyo emocional del instructor para el compromiso de los estudiantes en la escolarización. Este estudio se centra en examinar la resistencia académica en relación con el compromiso escolar a través del apoyo emocional percibido por el profesor en 910 muestras de estudiantes universitarios (hombres: N=536, 58,9 %, y mujeres: N=374, 41,1 %) de varios institutos del City College of Angeles, Filipinas. Además, se pretendía evaluar la diferencia significativa entre géneros en relación con las tres variables. Se utilizó la prueba U de Mann-Whitney y la prueba T de muestras independientes para determinar la diferencia significativa entre los géneros en cuanto a la resiliencia académica, el apoyo emocional percibido del instructor y el compromiso escolar. Los resultados revelaron que no hay diferencias significativas entre los géneros en lo que respecta al compromiso escolar, y se encontró una diferencia significativa para la resiliencia académica y el apoyo emocional percibido del instructor. Para el análisis de mediación se realizó

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un modelo de ecuaciones estructurales de mínimos cuadrados parciales (PLS-SEM) utilizando SmartPLS4. Los resultados mostraron que (1) la RSA está significativamente relacionada con el compromiso escolar y lo predice; (2) la resiliencia académica está positivamente asociada con el apoyo emocional del instructor y lo aprovecha; (3) el apoyo emocional percibido del instructor está significativamente relacionado con el compromiso escolar y lo desencadena; (4) lo más importante, la relación entre la resiliencia académica y el compromiso escolar está parcialmente mediada por el apoyo emocional percibido del instructor. Los resultados subrayaron la importancia del apoyo emocional proporcionado por los instructores para fomentar la resiliencia y el compromiso de los estudiantes universitarios. Los resultados se discuten destacando la importancia de promover los recursos personales y contextuales en la universidad para promover el bienestar general de los estudiantes.

PALABRAS CLAVE

Apoyo emocional; estudiantes universitarios; resiliencia académica; instructor; compromiso escolar.

ABSTRACT

Students with high academic resilience tend to cope and overcome impediments throughout the educational process. Published scholarly works have accentuated that academically resilient students are more engaged in school than their counterparts. Studies have also stressed the importance of instructor emotional support to students' engagement in schooling. This current study is engrossed in examining academic resiliency vis-à-vis school engagement via perceived instructor emotional support from 910 samples of undergraduate students (Male: N=536, 58.9 %, and Female: N=374, 41.1%) from various institutes at City College of Angeles, Philippines. Additionally, it aimed to assess the significant difference between gender concerning the three variables. Mann-Whitney U and Independent Samples T-Test were used to determine the significant difference concerning gender in academic resilience, perceived instructor emotional support, and school engagement. The findings revealed no significant difference between genders concerning school engagement, and a significant difference was found for academic resilience and perceived instructor emotional support. Partial Least Square-Structural Equation Modelling (PLS-SEM) using SmartPLS4 was performed for the mediation analysis. The findings displayed that (1) ARS is significantly related to and predicts school engagement; (2) academic resilience is positively associated with and leverages instructor emotional support; (3) perceived instructor emotional support is significantly linked to and triggers school engagement; (4) most importantly, the relationship between academic resilience and school engagement is partially mediated by perceived instructor emotional support. The results emphasized the significance of the emotional support provided by instructors in fostering resilience and engagement in undergraduate students. Findings were discoursed by highlighting the importance of promoting personal and contextual resources in the college to promote students' overall well-being.

KEYWORDS

Academic resilience; emotional support; instructor; undergraduate students; school engagement.

1. INTRODUCTION

Resilience has gained much attention from all educational researchers in recent years due to its relation to achievement and school-related adjustments (Dwiastuti et al., 2022; Rojas, 2015; Tamannaeifar & Shahmirzaei, 2019). Overcoming demanding and traumatic school-related conditions, high levels of motivation, and academic achievements despite various adversities are indeed a result of students with high academic resilience (Rao & Krishnamurthy, 2018; Salvacion et al., 2018). Published scholarly works have accentuated the association between academic resiliency and school engagement (Martin et al., 2022; Versteeg et al., 2022). Students relying on personal resources such as academic resiliency tend to perform better academically and are much more participative than their counterparts. Despite the abovementioned evidence, it is only imperative to explore contextual personal resources' role and focus on emotional forms, such as the emotional support provided by instructors. According to the Theory of Self-Determination (SDT), the instructor's emotional support, as perceived by students, is the feeling of having an emotional connection with their significant person inside the classroom, and the instructor is interestingly proactive with student's needs (Yang et al., 2021). However, previous studies related to this current investigation are predominantly immense in the primary and secondary schools' milieus. Irrefutably, there is an insufficiency of published papers concentrating on students perceived instructor emotional support in a higher education context and the Philippine setting. Hence, it can only be posited that there is a need to conduct an investigation. This study investigated the relationship between academic resilience and school engagement by examining the mediating role of perceived instructors' emotional support.

2. REVIEW OF RELATED LITERATURE

2.1. Academic Resilience and School Engagement

Generally, resilience is widely intellectualized as an individual's characteristics to adapt positively, adjust to challenges, and overcome threatening events (Wu et al., 2020). In the academe context, academic resiliency is demarcated as the capacity of a student to cope with chronic problems that are considered to be the central disturbance in a student's educational journey (Dwiastuti et al., 2022; Eva et al., 2021). Other scholars have explained that this term is an individual's capacity to face academic challenges and achieve positive outcomes from students with a high-risk background (Serrano Sarmiento et al., 2021; Ye et al., 2021). Moreover, the term was also defined as dealing with perilous circumstances through the educational system yet producing exceptional academic feats (García-Crespo et al., 2021; Lohner & Aprea, 2021). Indeed, academic resilience is a feature that has been identified for all students who have faced a lot of severe adversities throughout their educational progression (Gartland et al., 2019). Students with higher academic resilience are highly engaged throughout the educational process and do not easily give up on the overwhelming demands of the academe; therefore, establishing academic resiliency is a determinant of several positive outcomes, such as a higher level of achievement motivation and scholastic performance (Rao & Krishnamurthy, 2018), lower dropouts, and students who are highly satisfied with their own lives (Bittmann, 2021).

Furthermore, school engagement is a multidimensional construct that includes cognitive, affective, and behavioral domains (Benito Mundet et al., 2021). Vigor, Dedication, and Absorption are the three dimensions of this construct (Jaya & Ariyanto, 2021). Firstly, an individual characterized by high energy and mental resilience, vivacious, and flexible during studying, even in the face of difficulties, falls under the dimension of vigor (Jindo et al., 2020; Sittar, 2020). Dedication refers to a high sense of significance, gusto, and engrossment in one's study (Listau et al., 2017; Teuber et al., 2021). Lastly, absorption is when a student is highly concentrated and immersed in an academic task (Koob et al., 2021). With this, Academic resilience has been identified as a determinant of students' engagement based on previously conducted studies (Ahmed et al., 2018; Mozammel et al., 2018). Additionally, the demand-resources model applied in the educational sector postulated that higher personal resources, such as academic resiliency, may promote academic goals and school engagement (Fiorilli et al., 2020; Robayo-Tamayo et al., 2020). This study assumed that academic resiliency is a personal resource and a precursor of educational management; hence, this investigation is focused on deepening the relationship between the two variables.

2.2. The mediating role of perceived teacher's emotional support in the relationship between academic resilience and school engagement

College students spend most of their time inside the classroom while facing new and complex demands and dealing with various kinds of academic pressure and expectations (Romano et al., 2021a)several authors have focused on the internal and external factors that reduce burnout, highlighting the role of teachers' support. Nonetheless, few studies addressed how students' perception of teachers' emotional support protects them from school maladaptive behaviors. The present study aimed to longitudinally investigate in a final sample of 295 Italian high school students (F = 78.6 %; M = 15.78, SD = 1.48. Relative to the emotional burden of the overwhelming school demands and based on the abovementioned evidence, it is not shocking that students are significantly influenced by the emotional support provided by the significant adults in the academe (Yang et al., 2021). Teacher emotional support refers to the capacity of the instructor to promote a positive relationship and environment with the students and sensitively respond to student needs and support interactions (Pakarinen et al., 2020). TES comprises three dimensions, namely: positive climate (PC), teacher sensitivity (TS), and regard for adult perspective (RAP). How an instructor is keen on promoting positive interactions with students leads to an increased opportunity to demonstrate increased academic growth is referred to as a positive climate (Pangle, 2022). When an instructor consistently monitors students for signals needing extra support or assistance is called teacher sensitivity (Kennedy, 2019). Lastly, the degree to which an instructor emphasizes perspective concerning flexibility, connections to the present life, autonomy and leadership support, and significant peer interactions is called regard for adult perspective (Vattøy & Gamlem, 2019). Generally, the following dimensions are vital in promoting students' learning motivation and engagement (Ruzek et al., 2016). Based on previous studies, students who receive emotional support from their instructors reported higher performance and school adjustment than their counterparts (Domitrovich et al., 2017; Frenzel et al., 2021; Konishi & Wong, 2018)behavioral, and academic outcomes that are important for healthy development; (b. These findings have displayed that students with higher academic resilience amplify the higher level of instructor emotional support and tend to perceive a more positive learning atmosphere than those less resilient students (Cassidy, 2015; Yilmaz Findik, 2016). Parallel to other scholars' findings, it was discovered that academically resilient students are more likely to perceive higher emotional support from their instructors, leading to more great adjustments in the long term (Pitzer & Skinner, 2017; Rodríguez-Fernández et al., 2018). It was also found that academic resilience and perceived instructor emotional support are significantly associated with engagement (Ahmed et al., 2018; Romano et al., 2021b)it seems worth deepening the role of contextual factors, such as teacher emotional support and how students perceive it, as it could contribute to foster the abovementioned relationship. The present study aimed to examine the links between academic resilience, perceived teacher emotional support, and school engagement. Moreover, the mediating role of perceived teacher emotional support was investigated. A sample of 205 Italian high school students (58.5 % female. Consequently, it can be assumed that academically resilient students perceiving higher emotional support from instructors can result in higher school engagement.

2.3. Aims and Hypotheses

The present study sought to examine the relationship between academic resiliency and school engagement via perceived instructor's emotional support. Thus, the researchers hypothesized that academic resilience is significantly related and has a positive effect on school engagement (H1); academic resilience has a significant relationship and can positively affect perceived instructor's emotional support (H2); perceived instructor's emotional support is positively related and leverages school engagement (H3); and lastly, perceived instructor's emotional support mediated the relationship between academic resilience and school engagement (H4). Aside from its main goal of assessing the mediating effect of perceived instructor emotional support, this study also aimed to examine the significant difference between gender concerning ARS, TES, and ENG.

3. MATERIALS AND METHODS

Participants, Sampling Technique, and Sample Size

The selected participants for the study were undergraduate students comprising of 1st-4th year students currently enrolled in the 1st semester, the Academic year 2022-2023, at City College of Angeles, located in the Philippines. The *Convenience Sampling Technique* was used to identify the respondents. Also known as *availability sampling*, the selection of the respondents is based on their availability (Frey, 2018). The said availability is usually in terms of geographical proximity but may also involve other types of accessibility, such as known contacts. Since the investigator is affiliated with the college, this sampling technique can be used, as mentioned earlier. To identify the total number of target samples for this study, *Raosoft Sample Size Calculator* was utilized. From the 5,000 total population of students, the recommended sample size is 357. Exceedingly, 910 students participated in the study, and all the responses were accepted for data analysis after the data cleaning. Table 1 illustrates the demographic characteristics of the respondents who have answered the online survey. The results revealed that most of the respondents are mostly males (N=536), constituting 58.9% of the collected data compared to females (N=374) with 41.1%. Lastly, most of the respondents came from the Institute of Education, Arts and Sciences (N=393), which represents 43.2% of the collected data, followed by the Institute of Business and Management (N=361) with 39.7% and the Institute of Computing Studies and Library Information Science (N=156) with 17.1%.

Table 1. Demographic characteristics.

Item	Values	f	Percentage
Gender	Male	536	58.9
	Female	374	41.1
Institute	Institute of Education, Arts, and Sciences	393	43.2
	Institute of Business and Management	361	39.7
	Institute of Computing Studies and Library Information Science	156	17.1
	Total	910	100

Instruments

The gathering of data was performed via an online survey using Google forms. Also, three tools were adapted for this study. First, the 30-item Academic Resilience Scale, or the ARS-30 by Cassidy (2016), was used to measure students' academic resilience based on specific cognitive-affective and behavioral responses to educational diversity. Responses are recorded on a 5-point Likert scale (1= "unlikely" to 5 = "likely"); an example of an item is *"I would do my best to stop thinking negative thoughts."* In this particular instrument, a global scale was performed (i.e., summation of items after extraction). From the original study of Cassidy (2016), the Cronbach's Alpha value is 0.90, and for this investigation, the value is 0.93, indicating high internal consistency.

Second, the Teacher's Emotional Support Scale by Romano et al. (2020)the present paper aimed to examine the factor structure and to investigate the reliability and validity of the scale. Students' perception of teacher emotional support refers to the students' perception of whether and to what extent the teacher shows caring and understanding behaviours, promotes students' growth and establishes personal relationships with them. Materials and Methods: Confirmatory factor analyses confirmed that the hypothesized three-factor solution had the best fit to the data, assessing three different but related dimensions: Positive climate, Teacher sensitivity, and Regard for ado-

lescent perspective. Furthermore, the reliability and convergent and discriminant validity can be considered adequate. Conclusion: The Teacher Emotional Support Scale could be considered as a valid instrument to assess high school students' perception of the emotional support received from their teachers. Practical implications have also been discussed. (PsycInfo Database Record (c was used to measure students' perceptions of their teachers' emotional support. The scale is composed of 15 items on a 5-point Likert scale (1 = "Not at all true," 5 = "Very true"). It measures three distinct and related features of teacher emotional support: Positive Climate (e.g., *"Our instructors want students in this class to respect each other's ideas."*), Teacher's Sensitivity (e.g., *"We can count on our instructors for help when we need it."*), and Regard for Adult Perspective (e.g., *"Our instructors encourage us to share ideas with one another in class."*). Cronbach's Alpha is 0.86 for the total score in the current study and between 0.86 and 0.93 for its subscales.

Lastly, the Utrecht Work Engagement Scale for Students (UWES-9S) which was originally developed by Schaufeli (2017) and adapted from Carmona-Halty et al. (2019) was used which measures the overall school engagement of students. UWES-9S is a nine-item self-report scale on a 6-point Likert Scale (0 = "Never", 6 = "Always") which is subdivided into three unique features: Vigor [VI] (e.g., *"When I am doing my work as a student, I feel bursting with energy."*), Dedication [DN] (e.g., *"I am enthusiastic about my studies."*), and Absorption [ABS] (e.g., *"I feel happy when I am studying immensely."*). The Cronbach's Alpha is 0.91 for the entire score in the current study and between 0.77 and 0.86 for its subscales.

Data Analysis

A test of normality, reliability test, and bivariate correlation for inter-subscale relationships was performed. The result has shown that the skewness and kurtosis values did not obtain the threshold value [-2, 2] across all subscales. Hence, it can be interpreted that data are not normally distributed. In relation to this, a non-parametric test is applicable to test the difference between gender concerning academic resilience, perceived instructor emotional support, and school engagement, and the correlation for each of the variables. Additionally, the aforementioned table explains the results from the reliability test of each scale and the subscale of perceived instructor emotional support and school engagement. Based on the findings, all scales and subscales are highly reliable with Cronbach's Alpha value between.74 to.86. Lastly, the bivariate correlations for each scale and subscale are also exhibited in the table which unraveled a significant relationship across all variables (p <.01). The findings are illustrated in Table 2.

Table 2. Descriptive statistics, normality estimates, internal consistency coefficients, and bivariate correlations.

	M ± SD	Skewness	Kurtosis	1	2	3	4	5	6	7
ARS	3.61 ±.38	7.20	10.48	(.81)						
PC	4.50 ±.59	−13.22	2.63	.38**	(.74)					
TS	4.20 ±.68	−8.78	0.10	.41**	.61**	(.81)				
RAP	4.35 ±.70	−10.86	0.10	.41**	.62**	.74**	(.86)			
VI	4.26 ± 1.05	−4.16	.0.46	.47**	.36**	.50**	.46**	(.77)		
DE	4.63 ± 1.05	−6.80	−0.28	.45**	.40**	.45**	.45**	.79**	(.86)	
AB	4.29 ± 1.07	−4.83	1.99	.43**	.34**	.44**	.45**	.76**	.78**	(.80)

* Statistically significant at p <.05. ** Statistically significant at p <.01.

In order to determine if Mann-Whitney *U* would be the appropriate statistical analysis to examine the significant difference between academic resilience, perceived instructor emotional support, and school engagement with respect to gender, a non-parametric version of the Levene's test of Homogeneity of Variances was performed, and *p*-values should be >.05 to test the assumption of Mann-Whitney *U*. Based on the findings, only the school engagement variable (*p* >.05) did not violate the assumption of homogeneity of variances. Therefore, Mann-Whitney *U* can be performed for this specific variable. On the contrary, academic resilience and perceived instructor emotional support (*p* <.05) violated the assumption. Instead, the *Independent Samples T-Test* may be used, since the sample size for the study is relatively large. The findings are displayed in Table 3.

Table 3. Non-parametric version of Levene's test of Homogeneity of Variances results.

	Levene Statistic	df1	df2	Sig.
Academic Resilience	7.425	1	907.068	.007
Perceived Instructor Emotional Support	9.174	1	907.344	.003
School Engagement	.980	1	907.856	.322

Assumption of homogeneity of variances (*p* >.05).

For the correlational analysis, *Spearman's Rho* (rs) assessment was performed. It is a non-parametric measure of correlation using ranks (Akoglu, 2018). In this specific assessment, this aimed to measure the correlation between ARS to TES and ENG regardless of the latent constructs for TES and ENG. Hence, a composite score was used to obtain the global score for the two variables.

Partial Least Squares-Structural Equation Modelling (PLS-SEM) was utilized performing factor analysis through SmartPLS 4. The aforementioned statistical analysis is highly suitable for this type of investigation to be used (Ji et al., 2021). To establish convergent validity, the outer loadings of each items and the average variance extracted (AVE) were assessed (Hair et al., 2021). On the one hand, to establish discriminant validity, the Fornell-Larcker and Heterotrait-Monotrait criterion were also examined, as suggested by Hair et al. (2021). Additionally, the path coefficients and the coefficient of determination (R^2) were measured to evaluate the explanatory power of the model.

In order to measure the reliability of each item, a factor loading analysis was conducted. A threshold value of equal to or greater than 0.7 for each item's loading is considered reliable. The Cronbach's Alpha (CA) and composite reliability (CR) should also be equal to or greater than 0.7. Additionally, the average variance extracted (AVE) has also been used to validate constructs. It is the grand mean value of the squared loadings of the items related to the construct and the standard measure for establishing convergent validity. The AVE should be at least 0.5 or greater, and the corresponding *p*-value must be at most 0.5. After performing the factor loading analysis and extraction of items lower than the 0.7, and analyzing the CR and AVE, Table 4 illustrates the result for Academic Resilience (CA 0.927; CR 0.929; AVE 0.605), Positive Climate (Teacher Emotional Support) [CA 0.858, CR 0.868, AVE 0.703], Regard for Adult perspective (Teacher Emotional Support) [CA 0.861; CR 0.865; AVE 0.705], Teacher Sensitivity (Teacher Emotional Support) [CA 0.911; CR 0.913; AVE 0.738], Vigor (School Engagement) [CA 0.764; CR 0.798; AVE 0.682], Dedication (School Engagement) [CA 0.857; CR 0.864; AVE 0.778], and Absorption (School Engagement) [CA 0.800; CR 0.811; AVE 0.714). Hence, the convergent validity has been established.

Factor analysis

Table 4. Measurement model results.

Construct	Items	Item Loading	CA	CR	AVE
Academic Resilience	ARS11	0.742	0.927	0.929	0.605
	ARS13	0.727			
	ARS16	0.772			
	ARS18	0.770			
	ARS20	0.733			
	ARS22	0.821			
	ARS24	0.732			
	ARS25	0.834			
	ARS27	0.817			
	ARS30	0.819			
Positive Climate (Teacher Emotional Support)	PC1	0.869	0.858	0.868	0.703
	PC2	0.756			
	PC3	0.896			
	PC5	0.828			
Regard for Adult perspective (Teacher Emotional Support)	RAP1	0.829	0.861	0.865	0.705
	RAP2	0.830			
	RAP3	0.854			
	RAP4	0.846			
Teacher Sensitivity (Teacher Emotional Support)	TS1	0.865	0.911	0.913	0.738
	TS2	0.864			
	TS3	0.900			
	TS5	0.858			
	TS6	0.807			
Vigor (School Engagement)	VR1	0.717	0.764	0.798	0.682
	VR2	0.901			
	VR5	0.848			

Construct	Items	Item Loading	CA	CR	AVE
Dedication (School Engagement)	DN3	0.854	0.857	0.864	0.778
	DN4	0.914			
	DN7	0.876			
Absorption (School Engagement)	ABS6	0.858	0.800	0.811	0.714
	ABS8	0.878			
	ABS9	0.796			

Item loadings >0.70, Cronbach's Alpha Value (CA) and Composite Reliability (CR) >0.70, Average Variance Extracted (AVE) >0.50

To establish the discriminant validity, the Fornell-Larcker and Heterotrait-Monotrait criterion were inspected. For Fornell-Larcker, the square root of AVE (diagonal value) in each variable should exceed the correlation of latent variables. Lastly, the HTMT value should be <0.9. In this, the results are illustrated in Table 5 and 6, respectively.

Table 5. Fornell-Larcker.

	ABS	ARS	DN	PC	RAP	TS	VR
ABS	**0.845**						
ARS	0.497	**0.778**					
DN	0.788	0.593	**0.882**				
PC	0.368	0.637	0.446	**0.766**			
RAP	0.450	0.563	0.464	0.651	**0.840**		
TS	0.454	0.563	0.489	0.702	0.765	**0.859**	
VR	0.771	0.517	0.798	0.395	0.460	0.506	**0.826**

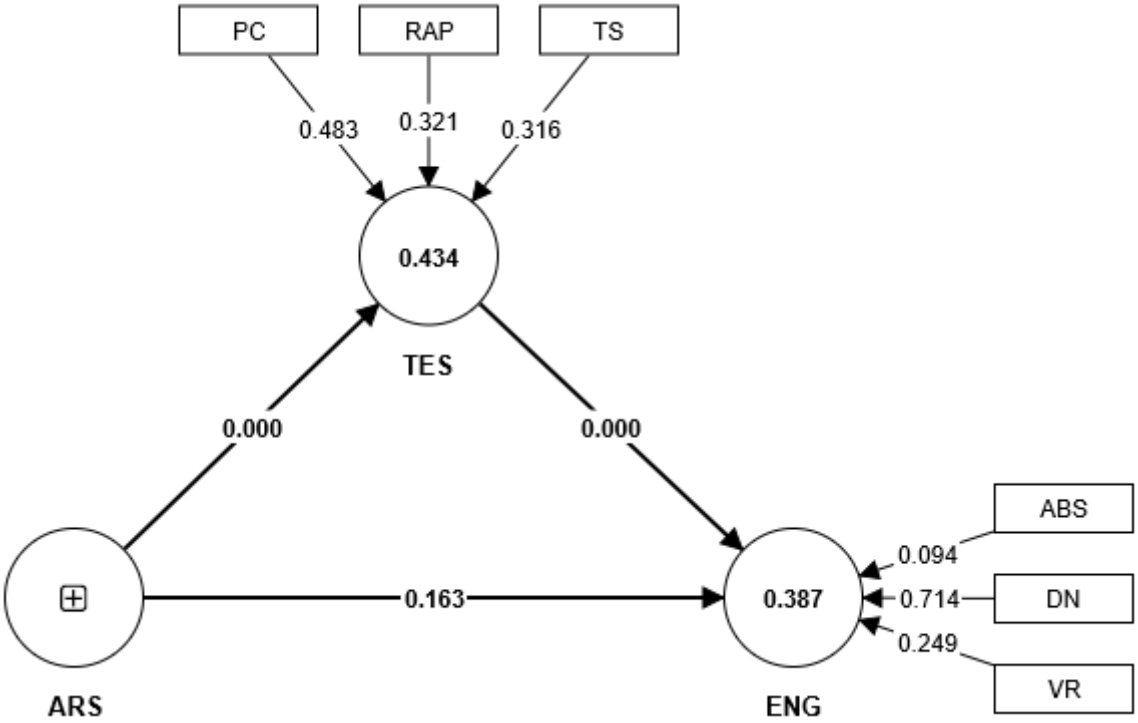
The square root of AVE (diagonal value) in each variable should exceed the correlation of latent variables (Hair et al., 2021).

Table 6. Heterotrait-Monotrait Ratio.

	ARS	ABS	DN	PC	RAP	TS	VR
ARS							
ABS	**0.512**						
DN	**0.612**	**0.782**					
PC	**0.650**	**0.363**	**0.442**				
RAP	**0.576**	**0.445**	**0.454**	**0.633**			
TS	**0.584**	**0.451**	**0.487**	**0.703**	**0.757**		
VR	**0.529**	**0.763**	**0.785**	**0.393**	**0.455**	**0.498**	

Heterotrait-Monotrait ratio (HTMT) <0.90 (Hair et al., 2021). Structural Model Assessment.

Figure 2. Path analysis results.



The explanatory power of the model has been evaluated by measuring the discrepancy amount in the variables of the model. As Hair et al. (2021) have stated, the R^2 and the path coefficients are the essential measures for assessing the structural model. As seen in Figure 2, the model has R^2 value of TES is 43.4%, and ENG 38.7% respectively.

To test the model fit, to test the model fit, the following indices were assessed: Standardized Root Mean Square Residual (SRMR) [<0.10/ 0.08 considered as good fit] (Henseler et al., 2014) and Normed Fit Index (NFI) [>0.9 considered as acceptable fit] (Hair et al., 2021). The findings displayed that the Standardized Root Mean Square Residual (SRMR) of the model is 0.039, Normed Fit Index (NFI) is 0.960 which indicated that the model is considered good fit for the study. Moreover, PLS

Predict was performed in order to assess the model's predicting validity and power (Manfrin et al., 2019; Shmueli et al., 2019). Table 7 displayed the result after performing PLS Predict assessing the predictive power/validity of the model. Q2 predicted values should be >0 which has been demonstrated which can be seen on the table. Additionally, after investigating the PLS-SEM MV error histograms, most of the indicators are asymmetrical. Hence, PLS-SEM_MAE and LM_MAE can be compared to determine the predictive power of the model. Based on the findings, the majority of the indicators in PLS-SEM_MAE are higher than LM_MAE which indicated that the model has a low predictive power (Shmueli et al., 2019).

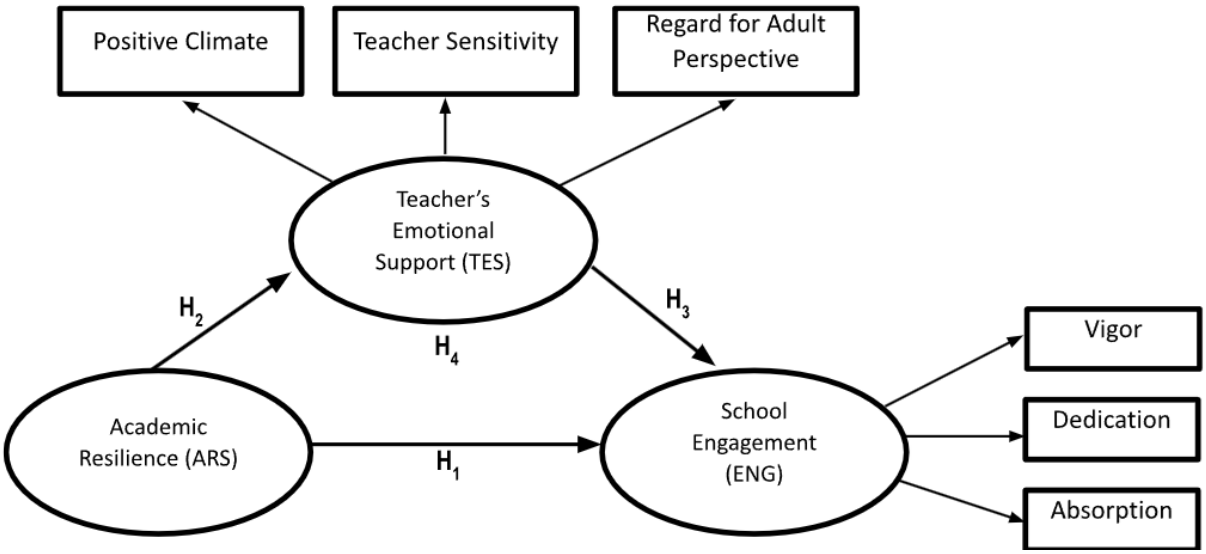
Table 7. Model's Predictive power using PLSPredict.

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
ABS	0.241	2.802	2.199	2.801	2.187
DN	0.347	2.545	1.990	2.541	1.988
VR	0.258	2.715	2.116	2.703	2.103
PC	0.389	1.820	1.319	1.813	1.301
RAP	0.305	2.308	1.833	2.327	1.848
TS	0.312	2.927	2.174	2.942	2.214

If all the indicators in the PLS-SEM analysis have lower RMSE (or MAE) values compared to the naïve LM benchmark, the model has high predictive power; if the majority (or the same number) of indicators in the PLS-SEM analysis yields smaller prediction errors compared to the LM, this indicates a medium predictive power; if a minority of the dependent construct's indicators produce lower PLS-SEM prediction errors compared to the naïve LM benchmark, this indicates the model has low predictive power; and if the PLS-SEM analysis (compared to the LM) yields lower prediction errors in terms of the RMSE (or the MAE) for none of the indicators, this indicates the model lacks predictive power (Shmueli et al., 2019).

Concerning the model specification, ARS was the predictor, while TES is the mediating variable, and ENG is the outcome. For ARS, a composite score was used to obtain global score in line with the previous studies (Morelli et al., 2015; Romano et al., 2021b)it seems worth deepening the role of contextual factors, such as teacher emotional support and how students perceive it, as it could contribute to foster the abovementioned relationship. The present study aimed to examine the links between academic resilience, perceived teacher emotional support, and school engagement. Moreover, the mediating role of perceived teacher emotional support was investigated. A sample of 205 Italian high school students (58.5% female. TES and ENG were used as latent variables, with their respective three subscales composite scores as indicators. The conceptual model is shown in Figure 1. Specifically, as depicted in Figure 3, (H1) represents the effect of ARS on ENG, (H2) represents the effect of ARS on TES, (H3) represents the effect of TES to ENG, and lastly, (H4) represents the indirect effect TES in between ARS and ENG. To test the hypothesized mediation model, a Structural Equation Modelling (SEM) with 10,000 resamples of bootstrapped estimates with 95% confidence interval (CI) was performed following Hair et al. (2021).

Figure 3. Conceptual Framework.



Ethical Considerations

The respondents were informed about the study's objectives, the instruments, and the constructs that will be measured. Additionally, the researcher has provided the benefits of the study for the college and the scientific community. The respondents were required to provide their consent by clicking the agreement attached in the Google forms. They were also given the freedom to decide whether to participate or decline. Participants were also informed that there might be minor risks in their participation in the study, such as the feeling of being uncomfortable in answering personal and sensitive survey questions. Likewise, they were told that no monetary compensation would be provided for giving information. Given these circumstances, participants were free to withdraw or to ask for a debriefing of the study anytime.

4. RESULTS AND DISCUSSION

Test of Significance Difference using Mann-Whitney U and Independent Samples T-Test

After performing the Independent Samples T-Test analysis, it was discovered that there is a significant difference between academic resilience [Female (4.47 ±.56), Male (4.37 ±.62) and perceived instructor emotional support [Female (4.50 ±.56), Male (4.34 ±.63) with respect to gender. Based on the findings, it can be interpreted that female students are more academically resilient compared to their counterparts [$t(908) = -2.681$, $p = .008$]. Likewise, with the perceived emotional support, it was unraveled that female students perceived a higher instructor emotional support compared to male students [$t(908) = -4.030$, $p = .004$]. Results are shown in Table 8. Finally, based on the Mann-Whitney *U* test, no significant difference was observed between gender [Male (*Mdn* = 4.33) and Female (*Mdn* = 4.56), *U* (*N*Male = 374, *N*Female = 536) = 94406.500, $z = -1.494$ $p = .135$, $r = -0.049$)], and the effect size is medium (*r* between 0.3 and 0.5).

Table 8. Independent Samples T-Test results.

	N	M ± SD	SE	df	t-test	Sig.	Decision
Academic Resilience							
Male	374	4.37 ±.62	.032	908	−2.681	.008	Significant
Female	536	4.47 ±.56	.024				
Instructor Emotional Support							
Male	374	4.34 ±.63	.032	908	−4.030	.004	Not significant
Female	536	4.50 ±.56	0.24				

Correlation analysis

Before performing path and mediation analysis, a correlation of the variables using Spearman's Rho (*rs*) was performed. The results exhibited a positive association between ARS and TES [$r(908) = .623$, $p < .05$)]; ARS and ENG [$r(908) = .585$, $p < .05$)]; and, TES and ENG [$r(908) = .545$, $p < .05$)]. First, concerning ARS and TES, it can be construed that, the higher the academic resiliency level of students, their perceived instructor emotional support is also increasing. Second, with regards to ARS and ENG, it can be postulated that, an increase with the academic resiliency level of students, their engagement in schooling is also bolstered. Finally, between TES and ENG, it can be concluded that, as the students perceived a higher emotional support from their instructor, their school engagement is also amplified.

Table 9. Hypotheses Testing.

Hypothesis	Path	Path Coefficient	p-value	Decision
Direct effect				
H1	ARS → ENG	0.429	0.000	Supported
H2	ARS → TES	0.659	0.000	Supported
H3	TES → ENG	0.251	0.000	Supported
Indirect effect				
H4	ARS → TES → ENG	0.165	0.000	Supported

Table 9 and Figure 2 revealed the path coefficients and p-value for each hypothesis. Based on the findings of this investigation, it can be noticed that all hypothesis were supported. The direct paths show that academic resilience is significantly and positively related to school engagement ($\beta = 0.764$, $p < .05$) and teacher emotional support ($\beta = 0.652$, $p < .05$). The findings posited that the higher the resilience level of students, the more they engaged in school. The same is true with the influence of academic resilience to teacher's emotional support. Meaning, the higher the resilience level of students, they can perceive a higher emotional support from their instructors. Therefore, H1 and H2 were supported. Furthermore, teacher's emotional support is highly related to students' engagement ($\beta = 0.281$, $p < .05$). This can be postulated that the higher the

teacher's emotional support perceived by the students, the more it increases their school engagement. In this, H3 is supported. Finally, the findings revealed after the mediation analysis that teacher's emotional support mediates the relationship between students' academic resilience and school engagement ($\beta = 0.165$, $p < .05$). The mediating effect of teacher's emotional support partially strengthens the significant and positive relationship between academic resilience and school engagement. Therefore, H4 is supported.

5. DISCUSSION AND CONCLUSION

Based on the findings from the Independent Samples T-Test and Mann Whitney *U*, it can be construed that both genders are equally engaged in their schooling, but female students are more academically resilient and perceived a higher instructor emotional support compared to their counterpart. Concerning academic resilience, the findings have been supported by various scholars that female students are more resilient than males (Bala, 2019; Nyambura Mwangi & Muriithi Ireri, 2017). Contrastingly, the study of Fatima and Nadeem (2022) and Ahmad et al. (2018) have displayed that there is no significant difference in academic resilience with respect to gender from various schools in Multan, Pakistan and students from Malaysian University, respectively. No significant difference was also observed between male and female students from Universitas Negeri Makassar concerning academic resilience (Latif & Amirullah, 2020). On the other hand, after searching for related articles concerning perceived instructor emotional support and school engagement, no studies were found. With this, the study highly suggests conducting a similar study to examine if the findings of this investigation may be supported or refuted.

For the PLS-SEM analysis, the first hypothesis shown that students' academic resilience positively affects their school engagement. Previous studies have shown that students with higher resilience levels are highly engaged in their school activities (Rodríguez-Fernández et al., 2018; Theron et al., 2022), showing more delight in school, as well as positive interactions with teachers and higher-class participation compared to their low-resilient peers (Romano et al., 2021). Furthermore, the findings of Dyrbye et al. (2010) revealed that students with high resilience levels are less likely to experience depression, have a higher quality of life, report a more elevated level of social support, they can perceive their learning environment more positively, and experience less stress and fatigue compared to vulnerable students. Interestingly, it was also discovered that highly resilient adults simultaneously utilized problem-focused and emotion-focused coping strategies Lee et al. (2017). Meaning unlike their low-resilient peers, highly resilient students believe that venting their emotions could be part of the solution, not the issue, when dealing with academic tasks. In other words, academically resilient students tend to do their best to succeed and engage in the educational environment, exploiting the contextual and adequate resources at their disposal at best. Moreover, the second hypothesis shows that academic resilience is associated with and can positively influence perceived teachers' emotional support, supported by previously conducted studies (Hu, 2022; Romano et al., 2021b). Additionally, Yuan et al. (2018) found that highly resilient individuals perceived higher teachers' emotional support than their counterparts. Furthermore, Downey (2008) has recommended that teacher-student rapport and classroom climate be considered to foster academic resiliency in students. Lastly, further studies have displayed that students with resilient characteristics are more inclined to school engagement (Tang et al., 2019). Thus, the findings posited that highly resilient students could perceive higher emotional support from their instructors and be more engaged in school. The third hypothesis exhibited that teachers' emotional support positively influences students' school engagement which has been supported by previously conducted studies (Kelly & Zhang, 2016; Pérez-Salas et al., 2021; Ruzek et al., 2016). Furthermore, studies have established the relationship between teachers' emotional support and students' engagement (Lam et al., 2012; Pöysä et al., 2019). However, the studies mentioned earlier are mostly related to primary and high school students, but no studies have been found concerning higher education. Lastly, the fourth hypothesis has shown that teachers' emotional support partially mediates the relationship between students' academic resilience and their engagement in school, which is similar to the fin-

dings of Romano et al. (2021). In contrast, previously conducted studies have found that teacher support does not mediate the relationship toward students' engagement Ansong et al. (2017). This study showed that academically resilient studies could positively affect their engagement through teachers' emotional support. In other words, it can be construed that highly resilient students are highly engaged in their academics because they can receive higher emotional support from their instructors. Likewise, based on Pedler et al. (2020), teachers' support influences student engagement, highlighting the teacher's role as paramount to ensuring students can experience meaningful engagement. More in-depth, the findings posited that academically resilient students tend to establish a more reliable, supportive network in school, as students believe that instructors could foster their engagement and academic success. On the other hand, there were only few published articles [i.e., (Romano et al., 2021b)] found after exhausting all the related literature and previous studies concerning the mediating role of teacher emotional support between academic resilience and student engagement.

The present investigation examined the difference between gender concerning ARS, TES and ENG. Moreover, the study has also assessed the relationship between students' academic resilience, perceived teachers' emotional support, and school engagement in a sample of City College of Angeles college students. Specifically, it is focused on determining whether academic resilience is related to school engagement via perceived teacher's emotional support. The findings supported correlational, path analysis, and meditational hypotheses. The present findings shed light on the causal processes that can lead academically resilient students to be more engaged in school, most specifically in a higher education institution (HEI) context also in the local colleges and universities setting in the Philippines. Based on the previously conducted studies, which have been mentioned throughout this paper, the results of this study underlined those personal resources (i.e., resilience) are determinants as much as contextual ones (i.e., teacher emotional support) in fostering students' engagement. The following results may provide new insights into practical interventions employed in the context of higher education. Specifically, it is only imperative to promote resiliency in students to promote engagement and prevent maladjustments. In this regard, the study suggests that the college instructors should collaborate with the College Guidance and Formation Office in order to address the need for resilient-based interventions, most especially to those less-resilient. Indeed, there have been several studies for the past years that have established the effectiveness of resilience-based interventions in fostering students' well-being (Cavioni et al., 2020; Chmitorz et al., 2018; Las Hayas et al., 2019; Morote et al., 2022; Teuber et al., 2021)grit (consistency of interests, perseverance of effort.

Moreover, the results of this study have highlighted effective classroom interactions, specifically instructors' emotional support. In other words, the quality of the emotional support established by instructors to students should not be disregarded. From a professional development perspective, the findings strongly suggest that the administration should provide in-depth training to instructors on how to establish and provide emotional support to their respective students. Furthermore, policymakers and practitioners should provide interventions to boost instructors' knowledge that may greatly help such complex school-related events during their professional careers. It is well-known that teachers' mental and work-related well-being might affect students' well-being at school.

Most importantly, this study has some limitations which are very important to note. Among them, the respondents for this study are only limited to the City College of Angeles students. In this, the result of this study cannot generalize the entire studentry of other Higher Education Institutions (HEIs) in the city or even in the country. Therefore, future researchers may find curiosity in conducting a similar study by collecting data from other private and public colleges and universities and determine if the findings may support or refute the claims of this investigation. Moreover, this study suggests adding and testing other variables, such as sociodemographic profiles (either moderating or mediating), that have not been considered in this current study. Furthermore, it is also suggested adopting a multi-informant design in future studies by collecting teachers' report, as teachers may provide a deeper information specifically in the emotional support that they are providing to their students.

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DATA ACCESSIBILITY STATEMENT

The data on which the results presented in this study are based are available in the Zenodo repository [https://doi.org/10.5281/zenodo.13987852]. Although the dataset is publicly accessible, users are required to contact the corresponding author for approval before utilizing the data for their own research purposes.

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