



EXAMINING THE RELATIONSHIP OF ACADEMIC AND EMOTIONAL SELF-EFFICACY ON TOURISM STUDENTS' MOTIVATION IN MATHEMATICS

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Abstract

This research analyzes the relationship between academic and affective self-efficacy and students' motivation to learn mathematics. In this study, the relationship between Academic Self-Efficacy (ASE), Emotional Self-Efficacy (ESE), and Student Mathematics Motivation (SMM) from the perspective of the students is investigated. In order to determine the correlation between ASE, ESE, and SMM levels, their respective indicators must be utilized to characterize them. Utilizing random sampling, 168 college student respondents were selected in total. A descriptive questionnaire survey was utilized to collect the data, which was then analyzed using the Pearson correlation coefficient. There is a high level of descriptiveness in student motivation in mathematics, academic, and emotional self-efficacy. The variables' indicators were identified to have a significant and positive association.

Keywords: *academic self-efficacy, emotional self-efficacy, mathematics motivation*

Introduction

Students' motivation in mathematics impacts their learning and drive to succeed and determines the extent of their academic advancement. Most students lacking motivation in mathematics are typically not academically inclined, unwilling to tackle challenging tasks, prone to succumbing to failures and frustrations and emotionally disturbed (Damrongpanit, 2019). This motivation drives their actions toward specific objectives, resulting in heightened effort and vigor (Bhatt & Bahadur, 2018). Motivated students are more inclined to focus and try comprehending the topic rather than passively engaging in superficial learning. Fatima, Zamir, Ali, and Fatima (2020) observed that a need for success drives all students due to varying levels of accomplishment motivation.

Dowker et al. (2016) state that motivation is paramount in numerous disciplines. However, research suggests that mathematics poses unique obstacles to motivation, including anxiety and the perception that the subject lacks personal significance or utility (Peterson & Hyde, 2017).

Prast et al. (2018) emphasized that low academic self-efficacy expectations are significantly affected by the level of involvement and the perceived worth of a particular assignment or activity. According to Dickhauser et al. (2016), students lose their motivation to learn when they do not have a healthy sense of emotional self-efficacy. This can be attributed to a lack of support from professors, negative feedback, and incorrect advice. According to Bal-Taştan et al. (2018), the shift from elementary school to middle school is associated with a decrease in students' sense of self-efficacy.

It has been demonstrated through academic research that Academic Self-Efficacy (ASE) significantly impacts both academic attainment and learning outcomes. Several settings, such as early childhood education, higher education, and tertiary institutions, have all provided empirical evidence supporting this association's existence. The relationship between Academic Self-Efficacy (ASE) and academic accomplishment has been the focus of many studies, each providing a different point of view (Honicke & Broadbent, 2016).

Academic self-efficacy has been found to correlate with many different characteristics of students' academic performance and mentality. These features include achievement, cognitive engagement, critical thinking, commitment, strategy utilization, resilience, and susceptibility to negative emotions. Academic motivation, interest, and performance can be significantly influenced by children's self-assurance in their capacity to navigate their educational development and excel in complex subjects (Cassidy, 2015; Peguero & Shaffer, 2019; Honicke & Broadbent, 2016). Self-confident individuals are confident of their ability to strategize, execute, and supervise the successful completion of tasks or resolve problems at a specific level of proficiency. Self-efficacy is commonly understood as a complex

concept that encompasses various operational dimensions (Wang et al., 2018).

The development of self-efficacy principles occurs when an individual attains proficiency. These convictions influence the level of effort that is put forth, the capacity to persevere in the face of difficulties, and the susceptibility to anxiety and tiredness. They encourage the development of a profound comprehension that plays a role in managing excitement and provides direction for behavior in various settings (situations). Moreover, they enhance the understanding that impacts one's capacity to regulate excitement and exert influence over various behaviors and decisions (Abdel-Hadi, 2017). Because emotional self-efficacy is only one of several characteristics associated with the perceived ability to regulate and supervise demanding behaviors, the theory of self-efficacy was expanded to include the evaluation of a variety of beliefs related to emotional self-efficacy. Emotional self-efficacy refers to the conviction that an individual possesses the ability to precisely and efficiently comprehend emotional information and to employ this knowledge to control and manage their feelings deliberately.

The fundamental objective of this research endeavor is to ascertain the connection between the level of mathematical motivation among students and the degree to which they feel capable of achieving academic and emotional success. In order to get started, it is necessary to determine the extent of academic self-efficacy by investigating self-engagement, self-directed problem-solving, collaborative problem-solving, and interpersonal climate. The evaluation of one's ability to utilize and control emotions, perceive and interpret emotions, engage with the emotions of others, and discern emotions transmitted through body language and facial expressions are all components of emotional self-efficacy.

Methodology

The study utilized a correlational research design to examine the relationship between various variables, involving 168 Tourism college students from a local state college in Aklan as respondents. Using three detailed survey questions, the researcher assessed the students' mathematical, emotional, and academic motivation. Each survey item underwent external and internal vetting, with Cronbach's Alpha used to determine reliability. Preliminary surveys were conducted in institutions not involved in the final study to ensure unbiased results. The academic self-efficacy evaluation tool by Sagone and De Caroli (2014) was adapted, revealing internal consistency ranging from 0.67 to 0.88%. The emotional self-efficacy assessment was based on the Youth Emotional Self-Efficacy Scale, showing reliability with Cronbach's alpha coefficients ranging from 0.79 to 0.89. The study also evaluated students' motivation in mathematics using a questionnaire by Fiorella et al. (2021), which proved valid and reliable. Ethical considerations were meticulously addressed, ensuring voluntary participation, privacy, and confidentiality as per the Data Privacy Act of 2012 (RA 10173). The study provided valuable insights and ensured that participants' rights and privacy were protected throughout the research process.

Results and Discussion

Significance of the Relationship of Academic Self-Efficacy to Students' Mathematics Motivation

In mathematics, Table 1 illustrates the association between academic self-efficacy and student motivation regarding the subject. Each of the p-values for each indicator is presented in the table, and it has been established that all are lower than 0.05. Specifically, about mathematics, the findings of this study indicate a strong and positive association between academic self-efficacy indicators and students' motivation level. As can be seen from the values displayed in the table, there is a positive correlation between the variables.

Table 1. Significant Relationship among the Variables

<i>Independent Variable</i>	<i>r- value</i>	<i>r- squared</i>	<i>p-value</i>	<i>Decision</i>
Self-Engagement	0.571*	0.326	0.001	Reject H ₀
Self-Oriented Decision Making	0.450*	0.220	0.001	Reject H ₀
Others-Oriented Problem Solving	0.441*	0.205	0.001	Reject H ₀
Interpersonal climate	0.423*	0.204	0.001	Reject H ₀

The conclusions drawn from earlier studies were further supported by the findings gained from this examination. According to Honicke and Broadbent (2021), a correlation was found between academic self-efficacy, academic achievement, and motivation in mathematics throughout various educational levels (including early infancy, secondary schooling, and tertiary education). This association was detected across all three levels of education. Peguero and Shaffer (2019) state a substantial positive link between academic achievement, interest, and motivation and an individual's confidence in their ability to navigate their academic journey and excel in complex fields effectively. This correlation is noteworthy because it is positive.

Conclusion

The study found that students consistently exhibit high academic and emotional self-efficacy and strong motivation in mathematics. Positive associations were identified between academic and student motivation, emotional self-efficacy, and enthusiasm for learning

mathematics. Conversely, a low level of motivation was linked to decreased mathematical engagement. The findings suggest that students' self-efficacy and motivation to excel in mathematics improve. It is recommended that parents provide ongoing support and encouragement for their children's mathematical development, fostering open communication and problem-solving at home. Educators should use engaging instructional methods and pursue professional development to enhance their teaching skills. The school should prioritize educator monitoring and development to manage students' academic and emotional self-efficacy. Future research should explore additional factors influencing students' mathematical motivation and academic success.

References

- Abdel-Hadi, S. A. (2017). Emotional Self-Efficacy among a Sample of Faculty Members and Its Relation to Gender (Male/Female), Experience, Qualification, and Specialization. *International Education Studies*, 10(1), 211-224.
- Abesamis, R., Tus, J., (2022). Happiness and Depression Among College Students Amidst the Online Learning. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 91-94. <https://doi.org/10.5281/zenodo.6541673>
- Alessandri, G., Vecchione, M., & Caprara, G. V. (2015). Assessment of regulatory emotional self-efficacy beliefs: A review of the status of the art and some suggestions to move the field forward. *Journal of Psychoeducational Assessment*, 33(1), 24-32.
- Amerstorfer, C. M., & Freiin von Münster-Kistner, C. (2021). Student perceptions of academic engagement and student-teacher relationships in problem-based learning. *Frontiers in psychology*, 12, 4978.
- Basilio, J.J., Pangilinan, T., Kalong, J.J., Tus, J., (2022). Amidst the Online Learning Modality: The Social Support and Its Relationship to the Anxiety of Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 331-335. <https://doi.org/10.5281/zenodo.6654353>
- Batiola, E.M., Boleche, N., Falcis, S.W., Tus, J., (2022). The Relationship Between Anxiety And Self-Esteem Among Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 66-72. <https://doi.org/10.5281/zenodo.6534512>
- Baylon, L., Latiban, A.M., Ricafort, A.D., Tus, J., (2022). The Relationship Between Self-Concept and Anxiety Among College Students During the Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 348-353. <https://doi.org/10.5281/zenodo.6654385>
- Bhatt, S., & Bahadur, A. (2018). Role of self-esteem & self-efficacy in achievement motivation among college student. *The International Journal of Indian Psychology*. 6 (2), 5-13.
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological review*, 106(4), 676.
- Calingacion, J.R., Lolo, D., Villalobos, G., Tus, J., (2022). The Relationship Between Stress and Happiness Among Senior High School Students Amidst the COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 52-58. <https://doi.org/10.5281/zenodo.6534439>
- Cassidy, S. (2015). Resilience building in students: the role of academic self-efficacy. *Frontiers in psychology*, 6, 1781.
- Compuesto, K.M., Bantog, J., Malabay, G.M., Santibanez, A.M., Tus, J., (2022). Amidst the Online Learning Modality: The Self-Efficacy and Its Relationship to the Academic Burnout of Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 174-184. <https://doi.org/10.5281/zenodo.6654318>
- Cruz, A.D., Francisco, J., Manalo, J., Tus, J., (2022). Amidst the Online Learning Modality: The Self-Efficacy and Its Relationship to the Perceived Loneliness of Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 1(2), 163-173. <https://doi.org/10.5281/zenodo.6523253>
- Cruz, J.M., Torre, A.P.D., Castaños, O.L.S., Tus, J., (2022). The Correlation Between Peer Pressure and Mental Well-Being Among Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 2(3), 167-175. <https://doi.org/10.5281/zenodo.6569859>
- Damrongpanit, S. (2019). From Modern Teaching to Mathematics Achievement: The Mediating Role of Mathematics Attitude, Achievement Motivation, and Self-Efficacy. *European Journal of Educational Research*, 8(3), 713-727.
- Dela-Cruz, N., Tayras, J., Castillo, D., Tus, J., (2022). Amidst the Online Learning: The Social Adjustment and Its Relationship to Loneliness of Senior High School Public Students. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 59-65. <https://doi.org/10.5281/zenodo.6534480>
- Dickhäuser, O., Dinger, F. C., Janke, S., Spinath, B., & Steinmayr, R. (2016). A prospective correlational analysis of achievement goals as mediating constructs linking distal motivational dispositions to intrinsic motivation and academic achievement. *Learning and Individual Differences*, 50, 30-41.
- Doménech-Betoret, F., Abellán-Roselló, L., & Gómez-Artiga, A. (2017). Self-efficacy, satisfaction, and academic achievement: the mediator role of Students' expectancy-value beliefs. *Frontiers in psychology*, 8, 1193.
- Dowker, A., Sarkar, A., & Looi, C. Y. (2016). Mathematics anxiety: What have we learned in 60 years? *Frontiers in Psychology*, 7, 508.
- Espayos, K., Llevado, L.J., Meneses, L., Tus, J., (2022). Amidst the Online Learning Modality: The Self-Esteem and Its Relationship to the Academic Burnout of the Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 14-19. <https://doi.org/10.5281/zenodo.6654412>
- Fatima, F., Zamir, S., Ali, S., & Fatima, S. (2018). Effect of Demographic Factors over Achievement Motivation of Students at

University Level in Islamabad. *Journal of Managerial Sciences*, 11 (3), 213-236.

Fiorella, L., Yoon, S. Y., Atit, K., Power, J. R., Panther, G., Sorby, S., ... & Veurink, N. (2021). Validation of the Mathematics Motivation Questionnaire (MMQ) for secondary school students. *International Journal of STEM Education*, 8(1), 1-14.

Francisco, J., Cruz, J., Cruz, K., Resurreccion, L., Lopez, L., Torculas, A., Gumpal, M., Guillermo, N., Tus, J., (2022). The Job Burnout And Its Impact on the Employee's Performance Amidst the COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 155-166. <https://doi.org/10.5281/zenodo.6569851>

Gallagher, M.G. (2012). Self-efficacy. *Encyclopedia of Human Behavior (Second Ed)*. 314-320. <https://doi.org/10.1016/B978-0-12-375000-6.00312-8>.

Gallardo, P.N., Ongkit, M.A., Santillan, R., Tus, J., (2022). The Relationship Between Self-Esteem and Burnout Among College Students Amidst the Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 343-347. <https://doi.org/10.5281/zenodo.6654371>

Gomez, S.L., Sison, C.J., Gavino, M.C., Tus, J., (2022). Academic Burnout and Its Relationship on the Anxiety of the Senior High School Students Amidst the Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 82-90. <https://doi.org/10.5281/zenodo.6534581>

Guevarra, M.J., Tus, J., (2022). The Relationship Between Social Media Addiction And Personality Traits Among College Students During COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(3), 244-257. <https://doi.org/10.5281/zenodo.6626190>

Hidi S. E., Renninger K. A., Renninger K. A., Hidi S. E. (2019). *Motivation and its relation to learning introduction*. Cambridge: Cambridge University Press.

Hogheim, S., & Reber, R. (2015). Supporting interest of middle school students in mathematics through context personalization and example choice. *Contemporary Educational Psychology*, 42, 17–25.

Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, 17, 63-84.

Ibanez, M., Doctolero, K., Senolos, L., Cruz, A.D., Tus, J., (2022). The Relationship Between Happiness and Stress Among Senior High School Students from Public Schools Amidst Online Learning. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 122-125. <https://doi.org/10.5281/zenodo.6565228>

Klanderman, D., Klanderman, S., Gliemann, B., Wilkerson, J., & Eggleton, P. (2019). *Factors that Motivate Students to Learn Mathematics*.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.

Lopez, E., Villegas, M., Suliao, A., Tus, J., (2022). The Self-Esteem and its Relationship to the College Students' Perceived Loneliness Amidst the COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 31-37. <https://doi.org/10.5281/zenodo.6534313>

Lunenburg, F. C. (2011). Goal-setting theory of motivation. *International journal of management, business, and administration*, 15(1), 1-6.

Luque-Reca, O., Augusto-Landa, J. M., & Pulido-Martos, M. (2016). Emotional intelligence and depressive symptoms in Spanish institutionalized elders: does emotional self-efficacy act as a mediator?. *PeerJ*, 4, e2246.

Mahinay, I.K., Rollan, D., Punzalan, C., Reyes, J.M., Tus, J., (2022). The Happiness and Its Relationship on the Anxiety of Senior High School Students During COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 143-148. <https://doi.org/10.5281/zenodo.6565350>

Mateo, K., Lajom, R.M., Vicente, L.J., Tus, J., (2022). The Self-Esteem and Its Correlation on the Anxiety of College Students During Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 137-142. <https://doi.org/10.5281/zenodo.6565346>

Milioni, M., Alessandri, G., Eisenberg, N., Castellani, V., Zuffianò, A., Vecchione, M., & Caprara, G. V. (2015). Reciprocal relations between emotional self-efficacy beliefs and ego-resiliency across time. *Journal of personality*, 83(5), 552-563.

Ocbian, J., Murot, J., Alejo, A.M., Tus, J., (2022). Amidst the Online Learning: The Self-Efficacy and Its Relationship to the Anxiety Among Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 336-342. <https://doi.org/10.5281/zenodo.6654365>

Padilla, R., Tolosa, K., Placiente, P., Compuesto, K.M., Tus, J., (2022). The Relationship Between Happiness and Depression Among Senior High School Students Amidst the COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 1-6. <https://doi.org/10.5281/zenodo.6654390>

Pastrana, S.C.M., Faustino, O.R., Tus, J., (2022). Amidst the COVID-19 Pandemic: The Relationship of Burnout and Depression Among College Students. *Psychology and Education: A Multidisciplinary Journal*, 1(3), 208-213. <https://doi.org/10.5281/zenodo.6654330>

Pedditzi, M. L., & Spigno, M. (2019). Achievement motivation and regulatory emotional self-efficacy in university students. *THE EUROPEAN PROCEEDINGS OF SOCIAL & BEHAVIOURAL SCIENCES*, 53, 503-513.

Peguero, A. A., & Shaffer, K. A. (2019). Academic self-efficacy, dropping out, and the significance of inequality. *Sociological Spectrum*, 35(1), 46-64.

- Peterson, J. L., & Hyde, J. S. (2017). Trajectories of self-perceived math ability, utility value and interest across middle school as predictors of high school math performance. *Educational Psychology*, 37(4), 438–456.
- Pineda, M.A., Mendoza, G., Velarde, C.M., Tus, J., (2022). The Relationship Between Social Support and Depression Among Senior High School Students in the Midst of Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 44-51. <https://doi.org/10.5281/zenodo.6534398>
- Prast, E. J., Van de Weijer-Bergsma, E., Miočević, M., Kroesbergen, E. H., & Van Luit, J. E. (2018). Relations between mathematics achievement and motivation in students of diverse achievement levels. *Contemporary Educational Psychology*, 55, 84-96.
- Qualter, P., Pool, L. D., Gardner, K. J., Ashley-Kot, S., Wise, A., & Wols, A. (2015). The emotional self-efficacy scale: adaptation and validation for young adolescents. *Journal of Psychoeducational Assessment*, 33(1), 33-45.
- Ramos, J., Manaloto, A.J., Cruz, S.A.D., Cervera, D.A., Ramirez, C., Tus, J., (2022). The Self-Efficacy And Loneliness of College Students Amidst the COVID-19 Pandemic. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 7-13. <https://doi.org/10.5281/zenodo.6654400>
- Rosenzweig, E. Q., & Wigfeld, A. (2016). STEM motivation interventions for adolescents: A promising start, but further to go. *Educational Psychologist*, 51(2), 146–163.
- Rufino, A.J., Federio, R.H., Bermillo, M.A., Tus, J., (2022). The Social Support and its Relationship to the College Students' Burnout Amidst the Online Learning Modality. *Psychology and Education: A Multidisciplinary Journal*, 2(1), 38-43. <https://doi.org/10.5281/zenodo.6534345>
- Saeid, N., & Eslaminejad, T. (2018). Relationship between Student's Self-Directed-Learning Readiness and Academic Self-Efficacy and Achievement Motivation in Students. *International Education Studies*, 10(1), 225-232.
- Sagone, E., & De Caroli, M. E. (2014). Locus of control and academic self-efficacy in university students: the effects of Self-concepts. *Procedia-Social and Behavioral Sciences*, 114(21), 222-228.
- Walet, M., Falcatan, J., Tus, J., (2022). Amidst the COVID-19 Pandemic: The Relationship Between Self Esteem And Depression Among Senior High School Students. *Psychology and Education: A Multidisciplinary Journal*, 2(2), 149-154. <https://doi.org/10.5281/zenodo.6565371>
- Wang, C. H., Harrison, J., Cardullo, V., & Lin, X. (2018). Exploring the relationship among international students' English self-efficacy, using English to learn self-efficacy, and academic self-efficacy. *Journal of International Students*, 8(1), 233-250.
- Zhang, Z. J., Zhang, C. L., Zhang, X. G., Liu, X. M., Zhang, H., Wang, J., & Liu, S. (2015). Relationship between self-efficacy beliefs and achievement motivation in student nurses. *Chinese Nursing Research*, 2(2-3), 67-70.

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