



The Combined Mediating Effects of Student Engagement and Academic Resilience on the Relationship Between Social Support and Self-Efficacy of Senior High School Students

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Abstract

This study investigated the combined mediating effects of student engagement and academic resilience on the relationship between social support and self-efficacy. Using a quantitative, non-experimental correlational design, data were collected from 420 public Senior High School students across eight school divisions (South Cotabato, General Santos City, Sarangani, Koronadal City, Kidapawan City, Cotabato, Tacurong City, and Sultan Kudarat) in Region XII, Philippines. The study employed a stratified random sampling, specifically a proportional allocation technique, and survey methodology using adapted survey questionnaires that underwent reliability and validity testing using Cronbach's alpha. Further, this descriptive study employed statistical measures such as mean, standard deviation, Pearson Product-Moment correlation, and path analysis. Results revealed high levels of all four variables: social support, student engagement, academic resilience, and self-efficacy. Moreover, social support, academic resilience, and student engagement demonstrated positive correlations with self-efficacy. Path analysis showed that social support has a significant total effect on students' self-efficacy, primarily through direct effect. However, the indirect effect, representing the combined mediating effects of student engagement and academic resilience, was not statistically significant. Findings of this study indicated that the pathways through student engagement and academic resilience do not significantly explain the relationship between social support and self-efficacy. Hence, the results suggested that the primary mechanism by which social support affects self-efficacy is through direct influence, with limited evidence for a combined mediation occurring in this model. Lastly, the study contributed to understanding self-efficacy in academic settings and provided practical implications for Senior High school students, teachers, and school administration.

Keywords

education, student engagement, academic resilience, social support, self-efficacy, senior high school students

INTRODUCTION

Enhancing self-efficacy among Senior high school students has become increasingly difficult as they navigate their crucial transition stage (Sasikirana, Maghfiroh, & Harita, 2025). Recent studies consistently reported a decline in self-efficacy, which is largely attributed to the overlap between adolescence and the heightened academic demands and responsibilities expected at this developmental phase (Regalado, 2024) leading towards student boredom, depression, chronic underachievement, changes in specialization, and withdrawal from school prior to pursuing higher education (Hinduja, Fakir Mohammad, & Siddiqui, 2024; Yang & Lian, 2025). As students move closer to college, the pressure to make significant career-related decisions further amplifies the challenges they face (Regalado, 2024). Despite the various educational provisions implemented by the government to support them (Okweye & Onoyase, 2024), many students continued to experience immense pressure from competitive college entrance examinations and remained uncertain about their professional capabilities (Madulid, Lotilla, Agot, Rufil, Cabalhin, Agustin, & Pondang, 2025; Yang & Lian, 2025).

As a significant factor influencing multiple dimensions of human functioning, self-efficacy has become an important construct that continues to capture the interest of educators and psychologists worldwide from various perspectives (Moussa, 2023). In the academic context, self-efficacy significantly influences students' judgments of their ability to achieve educational goals (Bakti, Kristina, & Sumardi, 2022). Through self-efficacy, students perceived themselves as capable of completing school-related tasks, which give them academic confidence. It reflects their belief that they possess the necessary skills to achieve desired academic outcomes. Higher levels of self-efficacy intrinsically motivate students to confront and overcome challenges during learning. It also shapes how they think, feel, and perform in academic settings (Mathwasa & Sibanda, 2020). Students who possess a strong sense of capability to learn and perform academic tasks, as well as confidence in managing academic challenges, are more likely to navigate their academic life successfully. Moreover, those with enhanced self-efficacy tend to attain better academic outcomes, exhibit greater resilience when confronted with difficulties, show greater determination in doing academic tasks, and display stronger motivation to achieve their goals (Mathwasa & Sibanda, 2020; Tecion-Lopez & Guhao, 2025).

In terms of connection, Chen, Zhu, and Xiao (2025) reported that self-efficacy demonstrates a strong correlation with social support. Similarly, Gupta and Raj (2025) found that social support positively relates to academic self-efficacy, a finding further supported by Fanfan and Tiqiang (2022), who confirmed a direct relationship between the two variables. Moreover, several studies confirmed that classmates, friends, and teachers contribute positively to students' academic involvement (Martinot, Sicard, Gul, Yakimova, Taillandier-Schmitta, & Maintenant, 2022; Qureshi, Khaskheli, Qureshi, Raza, & Yousufi, 2023). Supportive relationships play a decisive role in enhancing students' academic self-efficacy (Saefudin, Sriwiyanti, & Yusoff, 2021). As such, students who received functional social support in the form of emotional, instrumental, informational, and network support are more likely to accomplish learning goals and demonstrate positive involvement in academic tasks (Mulyadi & Saraswati, 2020).

On the other hand, the study of Anierobi, Amjad, Ubani, Aslam, Khasawneh, and Alshamsi (2025) reported a significant positive relationship between social support and student engagement, highlighting how supportive learning environments strengthen students' confidence and promote active participation in their academic tasks. In like manner, Abdullah and Singh (2019) found a significant correlation between social support and student engagement among Senior secondary school students, suggesting that students' social support has a significant impact on their engagement in school. Relatedly, Rahayu, Fachmi, and Burhanudin (2024) also reported a significant direct effect of social support on student engagement, underscoring the importance of supportive relationships in promoting students' involvement in academic activities.

Supporting this claim, Mulyadi, Zamralita, and Saraswati (2020) emphasized that different forms and sources of social support significantly influence students' engagement, particularly within the academic setting. Student engagement plays a vital role in the broader context of youth development. In educational settings, it has consistently been associated with positive outcomes such as academic success and completion. Highly engaged learners tend to perform better, perceive school as meaningful, and develop a clearer sense of purpose for their future. Functional engagement also promotes emotional well-being and healthier self-esteem, serving as a protective factor during adolescence. Moreover, engagement in upper secondary education has been shown to predict higher educational attainment later in life (Söderholm, Viljaranta, Tuominen, Lappalainen, & Holopainen, 2023).

Meanwhile, Luginasin and Espinosa (2024) confirmed a significant correlation between self-efficacy and student engagement. Their findings suggested that students' varying experiences, coping mechanisms, and perspectives influence how self-efficacy affects their level of engagement in learning. Consistent with this finding, Singh and Abdullah (2020) also revealed that self-efficacy and student engagement have a significant relationship among Senior secondary school students, with evidence of their significant influence. Conceptually, when there is confidence, motivation, and optimism derived from high self-efficacy, students learn to manage academic stress, maintain satisfaction, attend classes regularly, and avoid negative behaviors (Halif, Hassan, Sumardi, Omar, Ali, Aziz, & Salleh, 2020; Karakose, Polat, Yirci, Tülübaş, Papadakis, Ozdemir, & Demirkol, 2023).

Aside from these positive outcomes, students who exhibit functional engagement tend to perform better academically, sustain greater well-being, and experience overall academic success. Such students actively participate in learning activities, maintain emotional connection to their school environment, and demonstrate cognitive investment in course content. Furthermore, highly engaged learners generally hold favorable perceptions of their school and teachers, whereas those who do not often become disengaged, resulting in weaker academic outcomes (Suscano, Mahilum, Quipse, Andung, Aya-ay, Marani, Palomares, Bais Jr., & Esperat, 2025).

The previous study of Rachmawati, Setyosari, Handarini, and Hambali, (2021) revealed that social support has a significant relationship with academic resilience. Also, Rajathi and Karthiyayini (2025) revealed a significant positive correlation between social support and academic resilience, highlighting the critical role of students' support systems towards their academic success. This significant correlation between these two constructs edifies their important roles in helping individuals to overcome academic decline and promoting good prospect in the future (Rachmawati, Setyosari, Handarini, & Hambali, 2021). With social support from family, peers, and teachers, students' academic and personal development at the higher secondary level is strengthened, enabling them to build resilience, enhance self-confidence, and achieve better academic outcomes (Rajathi & Karthiyayini, 2025).

Several findings also revealed a significant relationship between self-efficacy and academic resilience. As such, a statistical analysis interpreted by Sy, Ireneo, Subida, Declaro, and Campo (2023) confirmed that a significant relationship

exists between self-efficacy and resilience among Senior high school students. Similarly, Valentin, Velasco, Robles, Canlas, Paraguya, and Tus (2023) confirmed that there is a significant relationship exists between self-efficacy and academic resilience among Senior high school students. These strong linkages indicate that self-efficacy is a key factor in the development of students' academic resilience (Rachmawati, Setyosari, Handarini, & Hambali, 2021). Even more, academic resilience reflects how students draw on personal strengths, such as self-control and empathy, to navigate setbacks (Liaqat, Islam, Azim, & Lodhi, 2025). In particular, the absence of these qualities has been associated with increased academic failure and dropout rates (Yu, Wang, & Xia, 2022).

This study is primarily anchored in Bandura's Social Learning Theory, which emphasizes individuals' beliefs and confidence in their capacity to organize and execute the actions necessary to achieve specific goals (Bandura & Walters, 1977). The theory highlights how individuals draw on their behaviors, decision-making skills, and personal characteristics in striving for beneficial outcomes, which, in turn, shape their self-perception, self-assessment, and intellectual abilities (Cheng, 2023).

In addition, Bhati and Sethy (2022) underscored that Bandura's concept of SLT has a significant impact on learning and engagement. Self-efficacy, as one of the components of SLT, lies at the center of human functioning. This mechanism of personal agency helps human beings become more motivated in their actions, as they are overwhelmed by sense of personal commitment and confidence. It also produces self-evaluation progress that is useful for an individual especially in executing their target goals. He may be able to expect desirable outcomes because he possesses the required values and functions such as maximizing energy and exerting control over situations in his social setting (Bandura, 1999; Bandura, 2000; Bandura & Walters, 1977). In the educational context, Bandura's Social Learning Theory underscores how students acquire, organize, and internalize knowledge from their learning environment, and how they respond to these experiences using their confidence, competence, determination, decision-making skills, and self-concept. The theory also supports how students regulate their behavior as they analyze situations, generate solutions, and address challenges encountered during the learning process (Bhati & Sethy, 2022; Manik, Sembiring, Padang, & Manurung, 2022).

Furthermore, Social Learning Theory (Bandura & Walters, 1977) holds that an individual's behavior is driven by the social system. He learns from social environment and produces practices and experiences based on approved social rules and sanctions. In like manner, Bandura (1999) stressed that an individual should not just limit his activity within the scope of his abilities and knowledge. He should also aim to surpass and succeed in accomplishing personal goals no matter what circumstances bring him along the way. In the educational ideologies, this theory suggests that vicarious experiences impact self-efficacy by allowing students to learn through observation of their environment. When students witness peers or role models successfully completing tasks, their own confidence in their abilities increases. Others succeed enhances academic persistence, as students develop an understanding of the effort required to achieve similar goals. Vicarious learning also helps students set realistic goals and adopt effective strategies (Madulid, Lotilla, Agot, Rufil, Cabalhin, Agustin, & Pondang, 2025).

Complementing the main anchor theory is Self-Determination Theory (SDT), which was introduced by Edward Deci and Richard Ryan in 1985, which emphasizes motivation, autonomy, competence, and relatedness as key factors in the holistic development of individuals is also important for this study. Taken together, these theories suggest that students' belief in their competence is not only shaped by internal motivation and autonomy as SDT posits, but also by their perceived ability to exercise control over learning tasks as SCT explains, making both frameworks complementary in understanding academic self-efficacy (Deci & Ryan, 2008). Accordingly, Self-Determination Theory particularly focuses on the influence of intrinsic motivation (innate rewards) and extrinsic motivation (external rewards) on the life of a human being. It covers the total needs and wellness of a certain person, which includes the social, cognitive and psychological aspects (Deci, & Ryan, 2012; Ryan & Deci, 2022). In the same way, motivation is an essential factor needed by the students especially when they are engaged in a learning task. Student motivation is evident when the need for autonomy, relatedness, and competence is emphasized as equal components of SDT (Chiu, 2021).

Equally, Social Cognitive Career Theory (SCCT) of Robert W. Lent, Steven D. Brown, and Gail Hackett in 1994 is another supporting theory which emphasizes guiding and developing learners' learning experiences towards career preference and goal. It also supports learners' socio-cognitive interests and performances based on their academic pursuits (Lent, Brown & Hackett, 2002). According to SCCT, favorable results take place when learners make the appropriate interests and choices in their course of action. When teachers provide the right contextual support, learners tend to develop positivity and impetus in learning and performing goals. Teachers are also expected to help learners clear out the barriers during the learning process (Lent & Brown, 2008).

Presented in Figure 1 is the conceptual framework showing the relationships among the key variables of the study. As shown, the hypothesized model includes the four rectangular-shaped figures representing the independent variable which is social support encompassing its five indicators namely emotional support, informational support, instrumental support, validation support, and companionship support; the dependent variable which is self-efficacy with its dimensions perceived control, competence, persistence, and self-regulated learning; and the two mediating variables, which are student engagement with its sub-indicators behavioral engagement, cognitive engagement, and emotional engagement; and academic resilience covering indicators such as perceived happiness, empathy, sociability, persistence, and self-regulation.

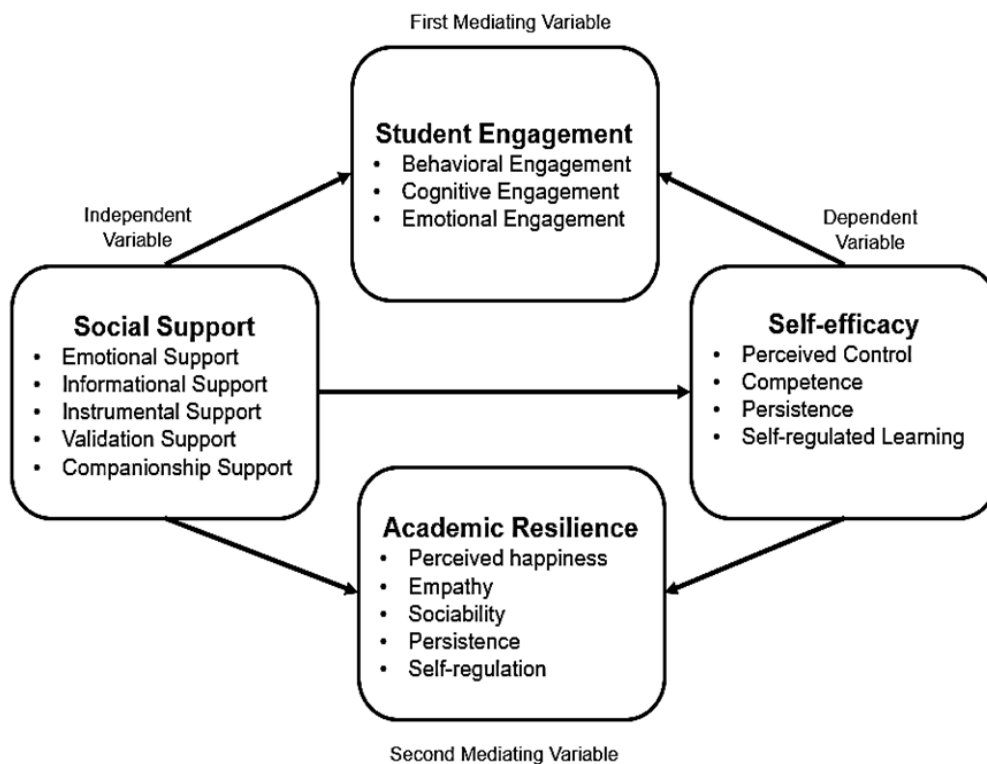


Fig. 1 The Conceptual Framework Showing the Variables of the Study

The single-headed arrow from social support to self-efficacy signifies a direct relationship and correlation between the independent variable and the dependent variable. Meanwhile, the bidirectional single-headed arrow from social support to student engagement and academic resilience indicates their correlation. The single-headed arrow from student engagement and academic resilience to self-efficacy also shows correlation, respectively. In addition, the single-headed arrow from social support to student engagement and academic resilience signifies the path analysis to determine the combined mediating effects of two mediating variables on the relationship between the independent variable and the dependent variable.

Although extensive studies on self-efficacy have examined its crucial role, its linkages with other psychological constructs, and its contributing factors, challenges, motivational issues, and limited attention has been given to its intensive role in student success, particularly when viewed through multiple constructs that may directly or indirectly strengthen it. This imbalance reveals a persistent gap in the literature and highlights the need for studies that move beyond description toward actionable and multidimensional solutions (Madulid, Lotilla, Agot, Rufil, Cabalhin, Agustin, & Pondang, 2025). At present, self-efficacy has been increasingly recognized as a critical factor warranting deeper scholarly attention, especially among Senior high school students in public educational institutions (Tus, Mauhay, Perote, Garcia, Santiago, & Aganan, 2023).

Since research indicated that diminished self-efficacy adversely affected students' academic motivation, engagement, and achievement, emphasizing the pressing need to strengthen it in order to enhance both academic performance and overall well-being, which are key factors in achieving student success (Madulid, Lotilla, Agot, Rufil, Cabalhin, Agustin, & Pondang, 2025). Addressing this gap is urgent because neglecting the intensive role of self-efficacy, particularly through its interaction with multiple reinforcing factors, may leave Senior high school students without the psychological resources needed to succeed. Even more, without actionable approaches, students may continue to experience academic challenges, which in turn hampers their preparedness for higher education and future career pathways. Most importantly, examining what truly strengthens self-efficacy not only advances theoretical discourse but also yields practical solutions that directly foster learners' success. By prioritizing evidence-based strategies to foster self-efficacy, this study aims to contribute to more responsive educational practices that empower students to navigate academic challenges and thrive in increasingly competitive environments.

Given the complex challenges faced by Senior high school students globally, particularly in relation to self-efficacy and academic-related variables, this research pursued to investigate the combined mediating effects of student engagement and academic resilience on the relationship between social support and self-efficacy. Specifically, this study sought to answer the following objectives: First, it described the level of social support in terms of emotional, informational, instrumental, validation, and companionship support. Second, it assessed the level of student engagement, encompassing behavioral, cognitive, and emotional dimensions. Third, it examined the level of academic resilience through indicators such as perceived happiness, empathy, sociability, persistence, and self-regulation. Fourth, it measured the level of self-efficacy in terms of perceived control, competence, persistence, and self-regulated learning. In addition, the study determined the significant relationships between social support and self-efficacy, student engagement and self-efficacy, social support and academic resilience, academic resilience and self-efficacy as well as social support and self-

efficacy. Also, it investigated whether both student engagement and academic resilience mediated the relationship between social support and self-efficacy.

Along with these objectives, the following null hypotheses were formulated. First, there is no significant relationship between social support and self-efficacy. Second, there is no significant relationship between student engagement and self-efficacy. Third, there is no significant relationship between social support and academic resilience. Fourth, there is no significant relationship between academic resilience and self-efficacy. Lastly, there is no significant influence of social support on self-efficacy. All were tested at the 0.05 level of significance. Moreover, this investigation also hypothesized that there is no significant combined mediating effect of student engagement and academic resilience on the relationship between social support and self-efficacy.

While a comprehensive understanding of self-efficacy has broader societal implications, insufficient attention to it in the academe can also carry significant future consequences in the wider community (Hinduja, Fakir Mohammad, & Siddiqui, 2024). With this, it is important to recognize and connect this study with global and developmental priorities as self-efficacy is considered one of the most widely studied variables across diverse educational systems, which demonstrates its prominent role in the way students face their school demands (Usán-Supervía, Salavera-Bordás, Juarros-Basterretxea, & Latorre-Coscolluela, 2023). According to Smith and Heyward (2024), across the globe, governments have acknowledged that realizing United Nations Educational, Scientific and Cultural Organization's (UNESCO) Sustainable Development Goal on inclusive and equitable quality education calls for substantial changes in educational policies and practices. Specifically, it is highlighted in UN General Assembly in 2015 that every child in the basic education level should be equipped with essential skills and become lifelong learners (Balagtas, Rungduin, Palomar, Lapinid, Gonzales, Medula Jr., Barba, Pagliawan, & Papango, 2025).

That is why, in alignment with UNESCO's SDGs, this study supports Sustainable Development Goal (SDG) 4 on Quality Education by exploring strategies that strengthen self-efficacy, a vital driver of equitable and effective learning. This particular development goal is centered on enhancing the quality of education, which primarily focuses on the development of learning individuals in acquiring the appropriate knowledge, skills, attitudes, and values, enabling them to become more effective, functional, and productive in pursuit of environmental sustainability, economic prosperity, and social equity (Tafese & Kopp, 2025).

Additionally, this study contributes to Sustainable Development Goal (SDG) 3 on Good Health and Well-being by highlighting how self-efficacy fosters resilience, reduces stress, and enhances students' psychological wellness, while also emphasizing the critical role of educational leaders in promoting mental health awareness and well-being initiatives for adolescents (Ucheagwu-Okoye, 2025). In the longer term, the study aligns with Sustainable Development Goal (SDG) 8 on Decent Work and Economic Growth since learners with strong self-efficacy are better prepared to succeed in higher education and transition into productive careers. By framing self-efficacy within this global agenda, the study highlights its importance in enriching theoretical understanding while also offering practical strategies that empower individual learners and promote inclusive, sustainable educational development. Even more, the alignment of this study to SDG 8 is vital not only for individual development but also for national efforts to cultivate a skilled, adaptable, and inclusive workforce (Maina, 2025).

Significantly, the presentation of this study lies in its potential to provide both theoretical and practical contributions. Theoretically, it deepens the understanding of self-efficacy by situating it within multiple reinforcing factors, thereby offering a multidimensional perspective that enriches existing literature. Practically, it generates actionable insights for educators, school leaders, and policymakers in designing interventions, support systems, instructional approaches, relevant policies, age-appropriate activities, and programs that strengthen self-efficacy among Senior high school students in public institutions. These initiatives not only prepare students for higher education and future career pathways but also advance individual success and contribute to broader educational outcomes. For future researchers, the study serves as a reference point for further explorations on self-efficacy and its interplay with other variables, encouraging comparative studies across different regions and educational contexts.

MATERIALS AND METHODS

Research Respondents

The respondents of this study were 420 students who were sampled from the entire population of 80,178 Grade 12 public Senior high school students in the Department of Education Region XII (SOCCSKSARGEN) comprised of eight school divisions. Primarily, the researcher employed a stratified random sampling technique, specifically the proportional allocation method, to ensure that students from every division were represented in the region (Afzal, Zia, & Khan, 2024). On this note, the Raosoft sample size calculator was used in this study as a practical tool for determining sample size. This online calculator, often used in social science, requires inputs such as confidence level, margin of error, response distribution, and population size to generate the minimum number of respondents (Memon, Ting, Cheah, Thurasamy, Chuah, & Cham, 2020). Meanwhile, the locale of the study was in SOCCSKSARGEN Region, known as Region XII, one of the administrative regions in the Philippines located at South-Central Mindanao. Formerly known as Central Mindanao, SOCCSKSARGEN is an acronym that stands for the region's four provinces and one highly urbanized city, namely South Cotabato, Cotabato, Sultan Kudarat, Sarangani, and General Santos City.

With a response distribution percentage of 50%, a margin of error of 5% and a Confidence Interval (CI) of 95%, the recommended sample size calculated was 383, which was the minimum recommended size of the survey. However,

the researcher opted to maximize the sample size to 420 respondents. The breakdown of respondents was as follows: General Santos City Division (71), Sarangani Division (46), South Cotabato Division (83), Sultan Kudarat Division (55), Tacurong City Division (14), Koronadal City Division (24), Cotabato Division (105), and Kidapawan City Division (21).

Further, only one criterion was set for the students to qualify as respondents of the study. They had to be public Senior high school students who belonged to the Grade 12 level and were enrolled in the School Year 2024–2025. In addition, the respondents could be of any gender, as long as they were able to provide answers to the questionnaire. The respondents were expected to provide reliable information regarding their performance as public Senior High School students, particularly in relation to their self-efficacy, social support, student engagement, and academic resilience. In this manner, the researcher administered the survey questionnaires to the qualified respondents in hard copy.

On the other hand, exclusion criteria were also considered during the conduct of the data gathering. Among these are: those students who are not identified as Grade 12 senior high school students under academic track, and not currently enrolled in SY 2024-2025 in any selected public schools in the Department of Education-Region XII; those Grade 12 students who are currently enrolled in SY 2024-2025 under academic track but are not consented or permitted by parents, not willing or interested to answer the survey questionnaires, and: those Grade 12 students who are currently enrolled in SY 2024-2025 but manifest mental reservations, psychological emotional distress, anxiety and doubts prior to the conduct of the study.

Materials and Instruments

The researcher employed four instruments to address the research problems outlined in the introduction. Primary data were used to gather information for the study, which consisted of four parts, self-efficacy, social support, academic resilience, and student engagement. Adaptation of the research instruments from various related studies was utilized in the conduct of the study. The researcher also ensured that the instruments used were modified to make them more applicable to the current and local setting. The questionnaires on self-efficacy of Senior High School students were adapted from Bwenvu (2023). The tool was modified from a 59-item to a 28-item questionnaire and was divided into four major indicators, namely: perceived control, competence, persistence, and self-regulated learning.

Meanwhile, the questionnaire on social support was modified from the study of Golaszewski and Bartholomew (2019). This instrument contained five major indicators in the form of emotional support, informational support, instrumental support, validation support, and companionship support. The respondents answered this 20-item survey, indicating the extent to which each item was associated with the activities they engaged in. For academic resilience, it was restructured from the questionnaire of Liu and Han (2022). This adapted tool, which initially contained 34 items, was categorized into five dimensions: perceived happiness, empathy, sociability, persistence, and self-regulation. The survey instrument was revised into a 25-item questionnaire. Lastly, the instrument on student engagement was adapted from Delfino (2019). It was comprised of three indicators, namely behavioral engagement, cognitive engagement, and emotional engagement, and was revised into 21 items from its original 40 questions.

To gauge the strength of respondents' answers, a 5-point Likert scale, developed by sociologist Rensis Likert, was utilized in this study. This scale is the simplest and most practical way to measure respondents' opinions and views. It consisted of five clear options, ranging from strongly disagree (1) to strongly agree (5) (Kusmaryono, Wijayanti, & Maharani, 2022; Tanujaya, Prahmana, & Mumu, 2022). Furthermore, the scale used in interpreting the means of self-efficacy, social support, academic resilience, and student engagement was as follows: 4.20–5.00 described as very high and interpreted as always evident; 3.40–4.19 labeled as high and interpreted as oftentimes evident; 2.60–3.39 defined as moderate and interpreted as occasionally evident; 1.80–2.59 labeled as low and interpreted as rarely evident; and 1.00–1.79 described as very low and interpreted as never evident (Alonazi, Beloff, & White, 2019).

The authentication, appropriateness, and credibility of the research instruments were evaluated by six validators who were academically aligned with this study. The instrument obtained an overall validation mean rating of 4.20, described as good, indicating that the survey questionnaires were valid and reliable. After validation, pilot testing was conducted. The consistency of the questionnaires' validity and reliability was assessed using Cronbach's alpha. Zhang and Li (2023) emphasized the importance of Cronbach's alpha as the most widely used reliability coefficient to measure the internal consistency of a test or scale. Further, the authors claimed that Cronbach's alpha provided a global measure of how correctly a certain collection of items could state individual differences for all respondents. Since, the Cronbach's alpha had a value between 0 and 1, the closer the Cronbach's alpha value was to 1, the greater the internal consistency of the items within the scale (Saidi & Siew, 2019).

The pilot test results revealed high reliability for all instruments used in the study, as measured through Cronbach's alpha. The self-efficacy questionnaire had a Cronbach's alpha of 0.910 across 28 items, while the academic resilience questionnaire yielded an even higher alpha of 0.942 across 25 items, both indicating excellent internal consistency. The student engagement scale achieved a value of 0.920 across 21 items, indicating excellent consistency. Lastly, the social support questionnaire produced a Cronbach's alpha of 0.883 for its 20 items, confirming good reliability. Overall, the pilot testing results demonstrated that all instruments possessed acceptable to excellent internal consistency, making them reliable tools for the main study. The researcher chose to conduct the study within the Department of Education, Region XII, because the researcher is a public elementary teacher at one of the schools in the region, specifically in the Division of General Santos City. She is a Master Teacher I at Upper Tumbler 1 Central Elementary School, North Fatima District, and has been in the service for 16 years.

Research Design and Procedure

This research utilized a non-experimental descriptive-correlational design to describe the status of individuals, settings, conditions, or events and to examine the relationships among variables without manipulation. It is appropriate for program evaluation, as it focused on participants' outcomes, described current needs and conditions, and identified whether characteristics were related to each other or to outcomes. Without control groups or interventions, this design is especially useful for needs, operational, implementation, and outcomes assessments (Lomibao, Maglalang, Aurora, Canites, Reyes, Javido, & Gaddi, 2023; Twombly, 2024). Additionally, this design was utilized because it allowed the researcher to gather and interpret numerical data (Mishra, Pandey, Singh, Gupta, Sahu, & Keshri, 2019) through standardized procedures to ensure accuracy and generalizability (Bacomo, Daculap, Ocampo, Paguaia, Pentang, & Bautista, 2022; Bhandari, 2023).

Using a descriptive survey questionnaire, the descriptive-correlational method was applied to describe the characteristics of the variables and to evaluate the levels, correlations, interrelationships, including the combined mediating effects among social support, self-efficacy, student engagement, and academic resilience (Bacomo, Daculap, Ocampo, Paguaia, Pentang, & Bautista, 2022; Salendab, 2023). Further, the researcher did not manipulate any variables; instead, they described the sample and the variables (Siedlecki, 2020).

In terms of data gathering procedure, the researcher secured a Certificate of Approval from the University of Mindanao Ethics Review Committee (UMERC). A request letter signed by the adviser and the dean of the University of Mindanao Professional Schools was also sent to the Regional Director of the Department of Education Region XII. The approved letter was attached to communications addressed to all Schools Division Superintendents and secondary school principals of the eight divisions. Even more, the researcher set a timetable to organize the administration and retrieval of the survey questionnaires to Senior high school students from the selected public secondary schools in Region XII.

Consequently, data were collected by distributing survey questionnaires to respondents across selected schools nationwide. The following schools were: General Santos City National High School (General Santos City Division), Alabel National Science High School (Sarangani Division), Silway-8 National High School (South Cotabato Division), Esperanza National High School (Sultan Kudarat Division), Tacurong National High School (Tacurong Division), Koronadal National Comprehensive High School (Koronadal City Division), Magpet National High School (Cotabato Division), and Kidapawan City National High School (Kidapawan City Division).

As such, the researcher ensured that all data gathered were treated with strict confidentiality, along with their tabulation, analysis, and interpretation. Furthermore, the researcher analyzed and interpreted the data using the appropriate statistical treatments. The mean was used to determine the levels of self-efficacy, social support, academic resilience, and student engagement of public Senior high school students. The Pearson r or Pearson Product–Moment Correlation was employed to determine the interrelationship between the independent and dependent variables. The Pearson Product–Moment Correlation is particularly suitable for naturally dispersed joint data following a normal bivariate distribution (Janse, Hoekstra, Jager, Zoccali, Tripepi, Dekker, & van Diepen, 2021).

Additionally, path analysis was used in this study to determine causal models by examining relationships between dependent and independent variables. This is a form of multiple regression statistical analysis that was developed by geneticist Sewell Wright in 1921. It was composed mainly of five elements: exogenous variables, endogenous variables, path diagram, path coefficients and effects (Chaitanya, Tevari, & Hanumanthappa, 2024). Along with this statistical treatment, a parallel mediation analysis was conducted to examine whether student engagement and academic resilience mediate the relationship between social support and self-efficacy. This analysis also determined whether the confidence intervals of the indirect effects crossed zero. The indirect effects were assessed using a causal-quantitative design, which allowed the researcher to determine whether a combined mediation occurred among the variables, particularly with the inclusion of two mediators in the model (Coutts & Hayes, 2023).

There are significant ethical considerations in this quantitative study including proper research operations, confidentiality, anonymity, and adherence to university standards. The key ethical principles guiding this research were voluntary participation, informed consent, and respect for respondent privacy, avoiding plagiarism or fabrication, securing permission, and avoiding conflicts of interest or deceit. This study followed ethical guidelines set by the University of Mindanao Ethics Review Committee (UMERC) with protocol number UMERC-2024-498 about the treatment of subjects and data.

RESULTS AND DISCUSSION

Level of Social Support

Shown in Table 1 is Level of Social Support among public Senior high school students in Region XII. The overall mean score obtained on the social support of Senior high school students is 4.09 with a standard deviation of 0.48, described as high. Among the dimensions, emotional support obtained the highest mean score of 4.53 interpreted as very high, while validation support, though still rated as high, received the lowest mean score at 3.97.

The high overall response of Senior high school students regarding social support reveals that they have someone with whom they can relate in the activities and someone who understands their problems about the activities. This analysis aligns with the findings of Hoferichter, Kulakow, and Raufelder (2022), who asserted that greater peer support from classmates enhances students' ability to cope and achieve academically while simultaneously reducing feelings of helplessness.

Table 1 Level of Social Support

Indicators	SD	Mean	Descriptive Level
Emotional Support	0.606	4.53	Very High
Validation Support	0.727	3.97	High
Informal Support	0.621	4.04	High
Companionship Support	0.681	4.01	High
Instrumental Support	0.700	4.02	High
Overall	0.476	4.09	High

Additionally, the analysis revealed that students are more likely to accomplish their learning goals when someone helps them on short notice, enabling them to engage in the activities. The presence of peers provides functional support, as students feel a sense of belonging to a group that also participates in the activities. These results are strongly supported by Yuliawati, Winarni, Lyesmaya, and Hapipah (2025), who found that peer interactions and their supportive mechanisms significantly contribute to students' higher academic engagement, performance and productivity. These authors contend that peer support enables students to progress academically by fostering a sense of belonging and emotional stability through reduced stress within the school environment.

Furthermore, the present analysis indicates that Senior high school students received skill enhancement, which strengthened them during academic challenges, as they were able to seek assistance from others or improve their technique in the activities. Along with this, they were able to pursue school-related tasks because they had someone who could provide reassurance during their school activities. These results are consistent with the findings of Otero, Deguito, Regidor, and Bauyot (2024), who reported a strong overall mean of social support, primarily derived from family members and friends. Similarly, Motsabi, Diale, and Van Zyl (2020) and Achdiyah, Latipun, and Yuniardi (2023) strongly supported the idea that the roles of family, school, and peers are critical in supporting and encouraging students to pursue their studies, thereby increasing their persistence. Furthermore, previous results also underscored that students who have strong social support from significant individuals increased their self-esteem, which is a vital factor towards their overall well-being, academic engagement, and success (Apeh & Nteh, 2020; Faidatul, Noviekayati, & Pratitis, 2024; Comon, 2022; Mulyadi & Saraswati, 2020; Owusu, 2023).

Level of Student Engagement

Presented in Table 2 is the Level of Student Engagement of senior high school students, with an overall mean score of 4.09, and a standard deviation of 0.507, interpreted as high. While the statement "Coming to class every day" had the highest mean score of 4.43, described as very high, "Studying my lessons on a regular basis" had the lowest mean score of 3.72, still described as high.

The findings on the overall high level of student engagement align with those of Delfino (2019), who reported a high mean level of active participation among students. Analysis reveals that a functional engagement occurred because students worked with other classmates on projects during class and prepared class assignments. These findings are supported by Hussein (2021) contending that peer collaboration, inclusion, openness, and support enable students to carry out expected outcomes of project-based tasks and assignments.

In addition, students affirmed that they engaged well in their studies by taking good notes in class and staying up to date with their readings. Aside from this, looking over class notes between classes to ensure they understood the materials increased their cognitive engagement in the learning environment. These results align closely with those of Salame, Tuba, and Nujhat (2024), confirming that students' ability to engage in note-taking is positively correlated with their engagement, leading to desirable grades and performance. Authors also reported that higher academic engagement is evident among students with note-taking skills, as this helps them with memory and information retrieval. As part of their readings, written notes help students understand and review information more easily and organize it efficiently, enhancing their cognitive processing skills.

Along with this analysis, students are also found to make a class presentation, discuss, or complete an assignment via an electronic medium. These findings are consistent with the previous results of Haleem, Javaid, Qadri, and Suman (2022), which assert that the use of technologies enhances student engagement by providing not only information but also facilitating students in creating digital or electronic outputs, such as presentations, projects, and assignments, to be presented in class.

Furthermore, analysis revealed that Senior high school students' retention, completion, and regular attendance are manifested in their positive behavior of coming to class every day, a finding parallel to Adeleke and Temisanren (2023), where they revealed through a high mean result that Senior secondary students paid desirable attention to coming to class on a regular basis. Lastly, the present analysis further revealed that students demonstrate a high level of engagement specifically in devoting attention to studying their lessons regularly. This result strongly supports a previous study highlighting that senior high school students' academic engagement and performance improve through functional and regular study habits (Castillo, Allag, Bartolome, Pascual, Villarta, & Tus, 2023).

Table 2 Level of Student Engagement

Items	SD	Mean	Descriptive Level
Asking questions in class or contributing to class discussion.	0.851	3.99	High
Participating in on small group discussions.	0.736	4.15	High
Doing all the homework problems.	0.789	4.04	High
Coming to class every day.	0.741	4.43	Very High
Taking good notes in class.	0.931	4.02	High
Staying up on the readings.	0.954	3.84	High
Studying my lessons on a regular basis.	0.986	3.72	High
Making a class presentation.	0.808	4.09	High
Preparing two or more drafts of a paper or assignment before turning it in.	0.912	3.88	High
Working on a paper or project that required integrating ideas or information from previous sources.	0.773	4.10	High
Using an electronic medium to discuss or complete an assignment.	0.768	4.20	Very High
Using e-mail/ messenger to communicate with a subject teacher.	0.791	4.27	Very High
Discussing ideas from my readings or classes with others outside of class.	0.819	4.04	High
Looking over class notes between classes to make sure I understand the materials.	0.825	4.08	High
Including diverse perspective in class discussions or writing assignments.	0.719	4.11	High
Working with other classmates on projects during class.	0.706	4.25	Very High
Working with classmates to prepare class assignments.	0.741	4.24	Very High
Tutoring or teaching other classmates/ students paid or voluntary.	0.942	3.83	High
Having serious conversations with classmates/ students who are very different from me in terms of their religious, political opinions, or personal values.	0.903	4.14	High
Having fun in class.	0.868	4.36	Very High
Talking about career plans with a faculty member or adviser.	0.927	4.12	High
Overall	0.507	4.09	High

Level of Academic Resilience

Displayed in Table 3 is the level of academic resilience of Senior high school students, which obtained an overall mean score of 4.01 and a standard deviation of 0.477, indicating a high level of academic resilience.

Among the indicators, the statement “When I think of something, I know how it affects my feelings” garnered the highest mean score of 4.25, interpreted as very high, indicating that students generally demonstrate strong self-awareness and emotional regulation. Conversely, the statement “I think most of the people that I regularly meet would come to like me” received the lowest mean score of 3.64, though still described as high, suggesting that students are relatively less confident about their social acceptance compared to their ability to manage their own emotions.

The overall high level of academic resilience indicates that Senior high school students can effectively bounce back from academic challenges. They try to stay positive even though studying may be difficult, actively seek help from their teachers when encountering learning problems, and take steps to ensure their learning will be fine even in difficult situations. Their ability to control their emotions when exposed to learning difficulties further strengthens their resilience because whenever they have a problem in learning, they try to solve it after reflecting on the causes of the problem.

These findings are comparable to the results of Reyes and Torres (2025) highlighting academic resilience as critical among higher secondary school students because they face numerous challenges that can impact their academic performance. Their results strongly emphasized that personal motivation and positivity, as well as a supportive school environment, are necessary mechanisms for withstanding academic setbacks and pressures.

Similarly, the overall level of academic resilience demonstrated by Senior high school students aligns with the findings of Nair and Kumar (2024), who reported that academic resilience was significantly high among higher secondary school students. This analysis is also strengthened by Liu and Han's (2022) findings, which reveal that students' academic resilience is above average, indicating strong resilience that enables them to address the causes of academic adversity while confidently managing their own emotions.

Analysis also indicates that Senior high school students think most of the people that they regularly meet would come to like them. They also confirm that they do not easily give up when their learning goes wrong because they have many friends to talk to with an open mind. Even more, students reveal that in communication, they can lead conversations well in accordance with a specific atmosphere or interlocutor, enabling them to engage more meaningfully in their social interactions.

This analysis increased the results of Xavier and Meneses (2022) underscoring that interpersonal relationships play a significant role in academic resilience, as experiences with classmates, and peers influence persistence in learning. Additionally, Jackson, Harvey, and Sherman (2023) stressed that students' perseverance depends on social acceptance and support, and their confidence in social interactions is more likely to achieve positive academic outcomes, leading to a successful completion of their studies (Andrade, Miller, McArthur & Ogden, 2022).

Table 3 Level of Academic Resilience

Items	SD	Mean	Descriptive Level
I am satisfied with my study.	0.809	4.02	High
I think my hard work always pays my learning.	0.780	4.07	High
I find it a good attitude to believe that “I can solve any difficult problems in my learning.”	0.814	3.97	High
There are many things that I feel grateful for in my learning.	0.723	4.24	Very High
I am sure that my learning will be fine even in difficult situations.	0.798	4.06	High
When people are sad, angry, or embarrassed, I can find out what they are thinking about.	0.912	3.93	High
I can recognize how people feel by their facial expressions in communication.	0.768	4.16	High
In communication, I can lead conversations well in accordance with a specific atmosphere or interlocutor.	0.875	3.82	High
When I think of something, I know how it affects my feelings.	0.713	4.25	Very High
I am good at finding the right words for what I would like to express.	0.920	3.79	High
I have many friends to talk to with an open mind.	0.873	4.19	High
In learning, I have many friends to help each other out.	0.884	4.01	High
I think most of the people that I regularly meet would come to like me.	1.038	3.64	High
I help other friends who have difficulties in studying.	0.836	3.93	High
I seek help from my teachers when I have a problem in learning.	1.023	3.79	High
When I have a problem in learning, I try to solve it after reflecting on the causes of the problem.	0.725	4.10	High
I first contemplate diverse possible solutions in order to solve learning difficulties.	0.773	4.03	High
I don't easily give up when my learning goes wrong.	1.199	3.73	High
I seek various ways to achieve my goal even in the face of pressure in learning.	0.823	4.05	High
I see learning difficulties as challenges.	0.920	3.88	High
I believe that I am able to control my emotions when exposed to learning difficulties.	0.820	4.11	High
I try to stay positive even though studying may be difficult.	0.748	4.21	Very High
I calm down first when exposed to learning difficulties.	0.733	4.06	High
I don't let bad marks affect my confidence.	0.844	4.08	High
In learning, I can adjust my emotions well in a short time.	0.823	4.05	High
Overall	0.477	4.01	High

Level of Self-Efficacy

The analysis presented in Table 4 reveals that the overall mean score for self-efficacy among Senior high school students is 4.04, with a standard deviation of 0.453, indicating a high level of self-efficacy. Among the four dimensions, persistence obtained the highest mean score of 4.14, while competence recorded the lowest at 3.92. Despite this variation, all dimensions were rated high, reflecting a generally strong sense of self-efficacy among the students.

The overall findings on Senior high school students' high self-efficacy indicate that whenever they are called in class to give their opinion, they give correct answer because they pay attention. They also believed that they persistently solve problems concerning their academic subjects and passing these depends on how well they perform the given academic tasks such as group presentations, oral work, multimedia presentations, and research projects. Students also confirmed that they work hard despite difficulties to get good grades in written work in their academics, such as quizzes, units, or long tests.

Table 4 Level of Self-Efficacy

Indicator	SD	Mean	Descriptive Level
Perceived Control	0.515	4.13	High
Competence	0.689	3.92	High
Persistence	0.537	4.14	High
Self-Regulated Learning	0.544	3.97	High
Overall	0.453	4.04	High

The analysis shows that Senior high school students' high self-efficacy displays their preparedness to face academic tasks (Sasikirana, Maghfiroh, & Harita, 2025). In congruence, the findings of Adlawan, Amor, Estrella, Pengson, and Perido (2021) confirmed that students remain attentive and motivated to listen and share their ideas because they are genuinely interested in the subject matter, as well as in the teacher's engaging teaching style and enthusiasm in delivering the lessons. Moreover, findings of Dela Cruz and Burgos (2024) revealed that students overcome difficulties in specialized subjects through their coping mechanisms such as having a good time management, exerting more effort in studying, saving money and watching video tutorials. Similarly, the results are also consistent with the findings of Masaoay and Litao (2021) asserting that Senior high school students' learning beliefs and practices is measured through various performance tasks like skill demonstration, oral performances, multimedia presentations, and research projects which students either accomplish individually or in groups.

Furthermore, the strength of these results is reinforced by the findings of Igbuhay, Albacite, Asoque, Condeza, Delos Santos, Gonzaga, Magsanay, Mangilid, Mariano, Omisol, Sareno, Sigue, Tudom, Clamares and Pelandas (2024), which indicated a high level of self-efficacy among Senior high school students in terms of effort, talent, and context, likewise supported by Murphy, Little, and Bjork (2023) emphasizing the essentiality of academic tests, cumulative and non-cumulative exams either multiple choice or short answers which occur before or after the lesson presentation.

In like manner, Tus (2019) also revealed that high level of self-efficacy among students ascertaining that they are resilient and determined in the face of setbacks and feel assured that they will be able to learn the classroom discussion and excel on their assessment, and they tend to be more intrinsically motivated to learn new knowledge. Overall, this present analysis is consistent with the results of Bwenvu (2023), who reported students' self-efficacy obtaining a high level extent, equally supported by the findings of Luka, Garba, and Sa'ad (2025), affirming that students with high self-efficacy tend to perform better academically, as reflected in their grades, than those with lower levels of self-efficacy.

Significance of the Relationship Between Social Support and Student Engagement

The results presented in Table 5 reveal a significant positive correlation between social support and student engagement, with an overall r-value of .535, $p < 0.000$, leading to rejection of the null hypothesis, thereby concluding a significant relationship between the two variables.

Further results show that the overall r-values of student engagement ranging from 0.318 to 0.452, with all p-values < 0.000 , which are less than 0.05 exhibited significant positive correlation with the individual indicators of social support: emotional support, validation support, informational support, companionship support, and instrumental support. Among these dimensions, companionship support showed the strongest relationship with student engagement, with $r = 0.452$, $p < 0.000$. In contrast, validation support shows the weakest correlation, $r = 0.318$, $p < 0.000$, indicating that, while there is still a positive relationship, relying on external comparisons may not significantly enhance student engagement.

The test of the relationship between social support and student engagement, showing significant positive correlations, is consistent with the findings of Anierobi, Amjad, Ubani, Aslam, Khasawneh, and Alshamsi (2025), who revealed a significant positive relationship between social support and student engagement, underscoring the importance of supportive learning environments and building students' confidence in their academic abilities. Likewise, the present study also agrees with the result of Abdullah and Singh (2019) who ascertained that there is a significant correlation between social support and student engagement among secondary school students, emphasizing that social support is a crucial factor in shaping students' academic success.

Table 5 Significance of the Relationship between Social Support and Student Engagement

Social Support	Student Engagement
	Overall
Emotional Support	.354*
Validation Support	.318*
Informational Support	.441*
Companionship Support	.452*
Instrumental Support	.351*
Overall	.535*

*Significant at 0.05 significance level

The present analysis also revealed that Senior high school students need a support network that significantly influences their academic engagement, of which was increased by Rahayu, Fachmi, and Burhanudin (2024) indicating that supportive relationships encouraged students to engage in academic activities actively. Moreover, Apeh and Nteh (2020) also agreed that parents, teachers, classmates, and friends provide necessary support that enhances learners' performance and achievement. Similarly, Söderholm, Viljaranta, Tuominen, Lappalainen and Holopainen (2023) also revealed that students with high engagement are the ones who received functional social support.

Significance of the Relationship Between Levels of Student Engagement and Self-Efficacy

Table 6 presents significant positive correlation between overall student engagement and self-efficacy with correlation coefficient $r=0.577$, $p<0.000$, which leads to the rejection of the null hypothesis, thereby concluding that student engagement has a significant relationship with self-efficacy.

Additional findings show that the overall means of Self-Efficacy with individual indicators namely perceived control, competence, persistence, and self-regulated learning, ranging from 0.307 to 0.540, with all p-values <0.000 which are less than 0.05 exhibited significant correlations with Student Engagement. Among the subdomains, the strongest correlation was found between student engagement and self-regulated learning, $r=0.540$, $p<0.000$. This suggests that students who are actively engaged are also more likely to apply metacognitive strategies such as planning, monitoring, and evaluating their learning processes.

Table 6 Significance of the Relationship between Levels of Student Engagement and Self-Efficacy

Student Engagement	Self-Efficacy				
	Perceived Control	Competence	Persistence	Self-Regulated Learning	Overall
Overall	.533* (0.000)	.307* (0.000)	.494* (0.000)	.540* (0.000)	.577* (0.000)

*Significant at 0.05 significance level

The findings on the overall significant positive correlation of student engagement and self-efficacy is reinforced by the findings of Lugnasin and Espinosa (2024), who established a strong correlational linkage between student engagement and self-efficacy, evidenced by how students' varied experiences, coping mechanisms, and viewpoints influence the extent to which self-efficacy drives their engagement in learning. In addition, the present findings are congruent with Singh and Abdullah (2020) revealing a significant relationship between self-efficacy and student engagement among Senior secondary school students. Supporting this claim, Bangsa (2021) also reported a positive correlational relationship between overall self-efficacy and overall engagement, which is comparable to the report of Owolabi and Owolabi (2024) who found that students' overall level of self-efficacy significantly impacts the overall level of students' academic engagement among Senior secondary school students, highlighting how indispensable the role of self-efficacy to the engagement of students.

Significance of the Relationship Between Social Support and Academic Resilience

Table 7 presents the overall correlation between social support and academic resilience, with $r=0.483$, $p<0.000$, indicating a significant positive relationship and therefore rejecting the null hypothesis. Further analysis shows that all five domains of Social Support, ranging from 0.295 to 0.386, with all p-values <0.0005 , are significantly correlated with Academic Resilience. Likewise, the statistical analysis also revealed that while the informational support domain yielded the highest correlation among the subcategories at $r=0.386$, $p<0.000$, emotional support recorded the lowest correlation at $r=0.295$, $p<0.000$, indicating a positive but moderate relationship.

Table 7 Significance of the Relationship between Social Support and Academic Resilience

Social Support	Academic Resilience
	Overall
Emotional Support	.295* (0.000)
Validation Support	.335* (0.000)
Informational Support	.386* (0.000)
Companionship Support	.370* (0.000)
Instrumental Support	.337* (0.000)
Overall	.483* (0.000)

*Significant at 0.05 significance level

The findings of the study are strongly supported by Rachmawati, Setyosari, Handarini, and Hambali (2021) who revealed that social support has a significant relationship with academic resilience. Likewise, the results are strengthened by Rajathi and Karthiyayini (2025) proving that there is an existence of significant positive correlation between social support and academic resilience, stressing the importance of supportive relationships in fostering adolescents' academic and personal development and success.

In congruence, Lin, Mastrokoulou, Longobardi, and Bozzato (2024) who also found a strong positive correlation between resilience and social support, emphasized that support from family, friends, and significant others serves as a crucial system that helps students develop resilience while accomplishing academic tasks essential for future planning and achievement. Furthermore, Sever and Aliyev (2025) echoed that there is a positive linkage of social support and academic resilience asserting that students employed various coping mechanisms to address learning challenges, including seeking support when facing failure or pressure, using self-regulation strategies, engaging in positive self-talk, ignoring negative behaviors around them, and relying on internal coping resources.

Significance of the Relationship Between Levels of Academic Resilience and Self-Efficacy

Table 8 shows the significant relationship between the levels of academic resilience and self-efficacy, including its four dimensions: perceived control, competence, persistence, and self-regulated learning. The overall correlation between academic resilience and self-efficacy is $r = 0.527$, $p < 0.000$, suggesting a strong positive relationship and leading to the decision to reject the null hypothesis.

Based on the correlation coefficients presented, the strongest individual correlation is self-regulated learning ($r = 0.488$, $p < 0.000$), indicating that resilient students are more likely to manage and regulate their own learning processes effectively. On the other hand, the weakest but still significant correlation is competence, $r = 0.347$, $p < 0.000$, indicating that while resilience contributes to a sense of competence in academic tasks, the relationship is relatively weaker compared to other dimensions.

Table 8 Significance of the Relationship between Levels of Academic Resilience and Self-Efficacy

Academic Resilience	Self-Efficacy				Overall
	Perceived Control	Competence	Persistence	Self-Regulated Learning	
Overall	.445* (0.000)	.347* (0.000)	.410* (0.000)	.488* (0.0000)	.527* (0.000)

*Significant at 0.05 significance level

The overall significant relationship of Senior high school students' self-efficacy and academic resilience is supported by the analysis of Sy, Ireneo, Subida, Declaro, and Campo (2023) who reported a significant relationship exists between self-efficacy and resilience. Additionally, Valentin, Velasco, Robles, Canlas, Paraguay, and Tus (2023) who also reported similar findings, demonstrated that as students' academic resilience increases, so does their confidence in managing their learning, sustaining effort, and maintaining a sense of control, underscoring the importance of fostering resilience to enhance self-efficacy especially in the academic context.

Supporting this claim, Victor-Aigboidion, Onyishi, and Ngwoke (2020) echoed that the significant positive predictive relationship of self-efficacy and resilience allows teachers and other education stakeholders to build and sustain a strong sense of self-efficacy in students in order to improve resilience among secondary school students. In this sense, Kelly and Ileri (2022) reveals that the role of teachers in preparing suitable instructional methods and providing appropriate guidance programs to help students to enhance their self-efficacy and resilience skills for better learning outcomes. Moreover, the result found by Siddique, Ali, Nasir, Awan and Siddique (2021) on the strong positive and significant relationship between resilience and self-efficacy reinforced the point of Enekwechi (2022) proved that students' resilience enables them to achieve academic success, encompassing their confidence in mastering learning materials and accomplishing academic tasks despite challenges.

Significance of the Relationship Between Levels of Social Support and Self-Efficacy

Shown in Table 9 is the significance of the relationship between levels of social support and self-efficacy. The overall r-value for the aforesaid measures is 0.478, with a p-value < 0.0001 (< 0.05), indicating a significant relationship and thereby rejecting the null hypothesis of no significant relationship.

In this analysis, when the individual indicators of Social Support (emotional support, validation support, informational support, companionship support, and instrumental support) are correlated with the overall means of Self-Efficacy, the r-values ranged from 0.308 to 0.412, with all p-values < 0.000 , which were less than 0.05, and all revealed significant correlations. Meanwhile, when the individual indicators of Self-Efficacy (perceived control, competence, persistence, and self-regulated learning) are correlated with the overall means of Social Support, the r-values ranged from 0.351 to 0.478, with all p-values < 0.000 , which were less than 0.05, and all exhibited significant correlations.

Table 9 Significance of the Relationship between Levels of Social Support and Self-Efficacy

Social Support	Self-Efficacy				
	Perceived Control	Competence	Persistence	Self-Regulated Learning	Overall
Emotional Support	.206* (0.000)	.262* (0.000)	.267* (0.000)	.322* (0.000)	.334* (0.000)
Validation Support	.250* (0.000)	.285* (0.000)	.254* (0.000)	.295* (0.000)	.344* (0.000)
Informational Support	.282* (0.000)	.311* (0.000)	.322* (0.000)	.391* (0.000)	.412* (0.000)
Companionship Support	.269* (0.000)	.228* (0.000)	.250* (0.000)	.264* (0.000)	.317* (0.000)
Instrumental Support	.246* (0.000)	.200* (0.000)	.257* (0.000)	.283* (0.000)	.308* (0.000)
Overall	.351* (0.000)	.359* (0.000)	.377* (0.000)	.432* (0.000)	.478* (0.000)

*Significant at 0.05 significance level

Additional analysis revealed that among the five indicators of social support, informational support showed the strongest correlations with all the domains of Self-Efficacy as presented from the overall correlation coefficient of $r=0.412$, $p<0.000$, while instrumental support had the lowest correlation values but remained significant as shown by its overall r -value of 0.308 , $p<0.000$. Meanwhile, among the dimensions of Self-Efficacy, self-regulated learning showed the strongest correlations with all the domains of social support, as indicated by an overall correlation coefficient of $r=0.432$, $p<0.000$, while perceived control had the lowest correlation values but remained significant, as shown by its overall r -value of 0.351 , $p<0.000$.

Given the statistical findings, Chen, Zhu, and Xiao (2025) revealed that students with higher levels of social support demonstrate stronger self-efficacy, and that a supportive learning environment fosters intrinsic motivation, engagement, and adaptability, enabling students to build confidence and cope with academic pressures leading towards stronger self-efficacy. Further, they explicated that a high level of social support fosters positive emotions, a stable learning mindset, and the fulfillment of psychological needs, enabling students to set and maintain goals, experience less academic distress, and develop greater confidence in completing tasks.

Finally, the results of the study is reinforced by Gupta and Raj (2025) on the positive correlation of social support and self-efficacy, and supported by the analysis of Hinduja, Fakir Mohammad and Siddiqui (2024), revealing that exerting psychological effort along with the support from their family, peers, and teachers enhance students' self-efficacy.

Mediating Effects of Student Engagement and Academic Resilience

Table 10 presents the path analysis results examining the mediating effects of student engagement (StEn) and academic resilience (AR) on the relationship between social support (SS) and self-efficacy (SEf) of the senior high school students in Region XII.

The results revealed significant pathways in the model, showing how the variables influence one another. Social support (SS) significantly predicts both student engagement (StEn) ($\beta = .569$, $p < .000$) and academic resilience (AR) ($\beta = .438$, $p < .000$). In turn, student engagement (StEn) ($\beta = .303$, $p < .000$) and academic resilience (AR) ($\beta = .229$, $p < .000$) significantly influence Self-Efficacy (SEf), showing that higher engagement and resilience contribute meaningfully to students' self-efficacy. Specifically, student engagement (StEn) with ($\beta=.348$) and critical ratio of 7.535 , $p<.001$ (***) and academic resilience (AR) with ($\beta= .248$) and critical ratio of 5.555 , $p<.001$ (***) positively predict students' belief in their capacity to succeed in academic tasks, highlighting students who are more engaged and resilient are more likely to feel confident in managing academic challenges. Furthermore, social support (SS) exerts a direct influence on self-efficacy (SEf) with $\beta=.186$, a critical ratio of 3.645 , and $p< .001$ (***), indicating that social support enhances self-efficacy not only through the mediating influences of student engagement and academic resilience, but also directly.

Table 10 Mediating Effect: Path Analysis

PATH	Estimates		SE	C.R.	P
	Unstandardized	Standardized			
SS → StEn	.569	.535	.044	12.794	***
SS → AR	.483	.483	.043	11.149	***
StEn → SEf	.303	.348	.040	7.535	***
SS → SEf	.172	.186	.047	3.645	***
AR → SEf	.229	.248	.041	5.555	***

The findings are congruent with Rahayu, Fachmi, and Burhanudin (2024) as well as Batthyany and Mokoena (2025), who revealed that social support had significantly influenced students' engagement reporting a significant direct effect of social support on student engagement. Likewise, the findings are comparable to the investigation of Saleem and Zia (2024) that social support significantly influences academic resilience, noting that the emotional assistance students received from strong support systems enables them to effectively manage their academic challenges.

Meanwhile, the results on the significant pathways in the model align with the meta-analysis of empirical studies, revealing that student engagement consistently emerges as a strong mechanism linking to social support and self-efficacy. As Wu, Fu, and Zhang (2023) underscored, supportive networks, whether teachers, parents, or peers, provide students with emotional, motivational, and instrumental resources, encouraging students to actively participate in learning activities. This heightened student engagement, in turn, strengthens students' beliefs in their capability to accomplish academic tasks, thereby enhancing self-efficacy.

Furthermore, the findings are also consistent with the assertion of Reyes and Torres (2025), who emphasized that academic resilience plays a vital role among students, particularly in higher secondary education, where various challenges may affect their academic performance. The authors confirmed that personal motivation, family support, peer relationships, and the school environment are significant contributors to students' resilience.

Congruent with these findings are those of Seçer and Ulaş (2020), who demonstrated that high levels of academic resilience serve as a strong protective factor against school disengagement, underscoring that through comprehensive support systems, students remain involved and successfully navigate academic challenges. Further, this significant path analysis is also strengthened by the report of Siddique, Ali, Nasir, Awan, and Siddique (2021) revealing a strong significant effect of resilience on students' self-efficacy.

Total, Direct, and Indirect (Mediation) Effects

The results of the path analysis indicate that social support has a significant total effect on self-efficacy, with an unstandardized coefficient of $b=.4553$ and a confidence interval (CI) ranging from .3740 to .5366. The confidence intervals (CIs) for the total effect do not overlap with zero, suggesting robust statistical significance. This indicates that when both direct and indirect pathways are considered, social support exerts a substantial positive influence on students' self-efficacy.

Table 11 Total, Direct, and Indirect Effects

Effect	<i>b</i>	95% CI	
		Lower	Upper
Total	.4553	.3740	.5366
Direct	.1721	.0850	.2593
Indirect (mediation)	.0616	-.0582	.1796

Additionally, the direct effect of social support on self-efficacy also emerged as significant with $b=.1721$, and $CI = .0850$ to .2593, suggesting that even without accounting for the two mediating variables, social support independently contributes to higher levels of self-efficacy. This finding affirms the critical role of social support in directly enhancing students' confidence in their academic abilities which was agreed by Fanfan and Tiqiang (2022) who found a direct relationship between self-efficacy and social support.

In contrast, the indirect effect, which represents the combined mediating effects of student engagement and academic resilience, was not statistically significant, with $b = .0616$ (95% CI = -0.0582 to .1796), as the confidence interval includes zero. This means that while the two mediators are included simultaneously in a parallel mediation model, their effects are estimated while controlling for each other, suggesting that the pathways through both student engagement and academic resilience do not significantly explain the relationship between social support and self-efficacy. Further, the statistical analysis results conclude limited evidence for a combined mediation in this model. Thus, the results suggest that the primary mechanism by which social support affects self-efficacy is through direct influence. Therefore, the null hypothesis of no significant combined mediating effects of student engagement and academic resilience on the relationship between social support and self-efficacy is accepted.

Overall, the statistical analysis of this study, specifically on the significant total and direct effects, aligns with Chen, Zhu, and Xiao (2025), highlighting that social support directly contributes to academic self-efficacy. Supporting this result, Saefudin, Sriwiyanti, and Yusoff (2021) found that social support has a direct influence on students' self-efficacy, regardless of its classification as high, medium, or low, depending on the level of social support provided. The alignment of these findings with the present study highlights the consistent evidence across research that social support plays a decisive role in enhancing students' self-efficacy.

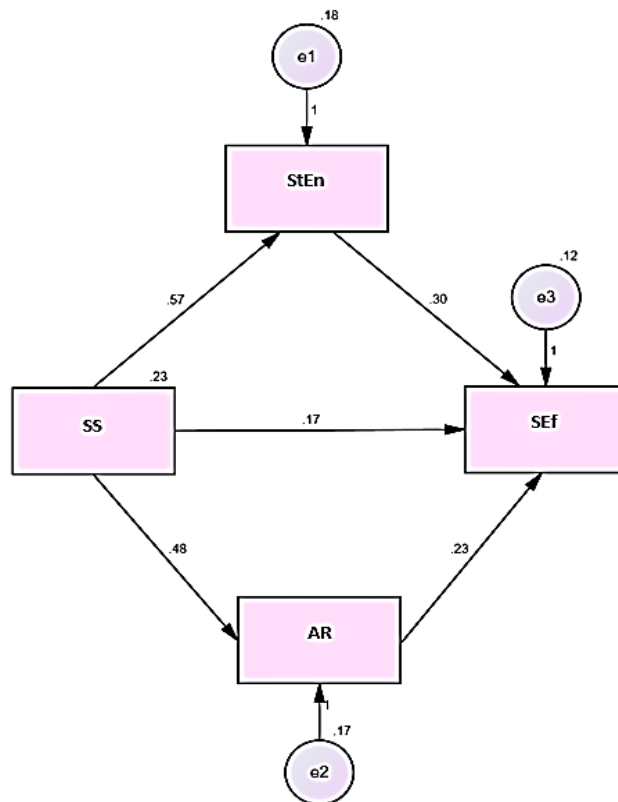


Fig. 2 The Combined Mediating Effects of Student Engagement and Academic Resilience on the Relationship between Social Support and Self-Efficacy of Senior High School Students

Legend:

IV- Social Support (SS) DV- Self-Efficacy (SEf) MV1- Student Engagement (StEn) MV2- Academic Resilience (AR)

CONCLUSION AND RECOMMENDATION

The objective of this study was to investigate the relationships among social support, student engagement, academic resilience, and self-efficacy among public Senior high school students in Region XII, with particular attention to the combined mediating effects of student engagement and academic resilience. Results revealed very high levels of all four variables, indicating that students consistently experience strong social support, self-efficacy, academic resilience, and student engagement. Moreover, social support, academic resilience, and student engagement positively correlated with self-efficacy.

Further, path analysis showed that social support has a significant total effect on students' self-efficacy, primarily through direct effects, highlighting the critical role of supportive networks in shaping learners' beliefs in their academic abilities. However, the combined mediating effects of student engagement and academic resilience on the relationship between social support and self-efficacy were not significant, indicating a gap in how these factors convert social support into students' stronger self-efficacy. Hence, the results suggested that the primary mechanism by which social support affects self-efficacy is through direct influence, with no mediation occurring in this parallel mediation model.

These findings provide empirical support for Bandura's Social Learning Theory (1977), which posits that self-efficacy develops through the interaction of personal beliefs, behaviors, and environmental influences. The strong direct effect of social support confirms Bandura's principles of social persuasion and environmental reinforcement, in which encouragement, validation, and guidance strengthen students' confidence in performing academic tasks. Furthermore, the involvement of academic resilience and student engagement reflects the principle of reciprocal determinism, in which environment, personal factors and behavior interact continuously to shape learning outcomes. While the mediating effects were weak, the overall results validated Social Learning Theory by demonstrating that when learners are socially and emotionally supported, they cultivate stronger self-beliefs, persist despite challenges, and maintain meaningful engagement in academic pursuits. Therefore, the very high results confirm that Senior High school students in Region XII thrive in a supportive learning environment that sustains academic resilience and engagement, while also highlighting the need to explore additional mechanisms that can further translate social support into stronger self-efficacy.

In light of these findings, schools should establish holistic educational practices and comprehensive support systems to enhance student engagement and academic resilience among Senior high school students. School heads are encouraged to institutionalize programs that consistently recognize efforts and achievements while promoting structured academic support, socio-emotional learning support, and inclusive opportunities. There should be a strengthened guidance program that prioritizes comprehensive career counseling, mental health support, and structured interventions to enhance their self-efficacy and academic resilience. Initiatives such as subject-focused enhancement classes, peer tutorials,

resilience-building workshops, and academic-related organizations, clubs, and talent galore can provide a holistic foundation for student growth. By embedding validation and recognition into both academic and co-curricular activities, school leaders can cultivate a school culture where students feel valued, motivated, and capable of meeting the academic and personal challenges. Meanwhile, these school programs and initiatives should be adequately supported and resourced to create healthier learning environments that enable Senior high school students to thrive both personally and academically.

Equally vital is the role of teachers in reinforcing these initiatives at the classroom level. Teachers are encouraged to provide individualized, timely feedback that affirms both academic and non-academic progress, while integrating instructional strategies that promote mastery, competence, persistence, and active participation. Scaffolded lessons, project-based tasks, collaborative activities, and opportunities for peer feedback can strengthen students' confidence in applying their knowledge and skills. In addition, fostering emotional support through encouragement, positive reinforcement, and reflective practices can help students develop resilience and sustained motivation. By linking validation, competence-building, and socio-emotional support, teachers can create a classroom environment that empowers learners to engage meaningfully with their studies and persevere in the face of academic challenges.

Finally, future research should explore additional psychological factors that may further enhance students' self-efficacy and to examine suitable academic and non-academic interventions that promote the continuous academic and emotional development of Senior high school students by responding to the demands of this critical transitional stage and providing sustained support that strengthens students' confidence in their academic abilities and decision-making skills, ultimately contributing to improved educational outcomes and overall student well-being.

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DECLARATION OF CONFLICT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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