

Math Anxiety and Self-Confidence: Their Influence on Students' Academic Performance in Mathematics

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ABSTRACT

This study determined the level of math anxiety and self-confidence and examined their relationship with learners' academic performance at Cagaasan Elementary School during the school year 2025–2026. Using a descriptive-correlational design, data were gathered from 32 pupils through a modified questionnaire and official school records. Respondents' profiles included age, gender, and grade level. Statistical analyses—frequency counts, means, and Chi-square tests—were applied to determine relationships among variables. Results revealed that learners generally have average math anxiety and self-confidence, both situational rather than demographic profiles. No significant relationships were found among profile of the respondents, math anxiety, self-confidence, and academic performance, emphasizing that effective teaching and supportive environments play a greater role in sustaining academic success in mathematics.

INTRODUCTION

Mathematics is often recognized by learners as one of the most challenging subjects. Regardless of how challenging this subject is, learners cannot escape mathematics as it is one of the important and compulsory subjects for all students in the Philippine educational system from primary to secondary (Hernandez, 2023; Moreno, 2025). At any grade level, mathematics is present and continuously improved in terms of difficulty as the learners progress to the next grade level.

Although intellectual ability plays an important role in students' academic performance, factors like math anxiety and self-confidence have been shown to exert a powerful influence on the academic performance of the students (Montablan et al., 2024). Intellectual ability is usually what is seen and applauded – but what lies beneath is the students' emotional and psychological struggles in dealing with mathematics. Many students struggle to achieve success in the said subject, since they are not just facing difficulty in understanding the concepts but also with the emotional and psychological factors that affect their learning experiences (Nobis et al., 2025).

Mathematics anxiety is a global issue with pronounced effects in the Philippines, a country struggling with educational performance on the international stage. According to OECD PISA 2018 results, over 50% of Filipino students scored below the lowest proficiency level in mathematics, positioning the Philippines near the bottom of the rankings. This underperformance is particularly severe in public schools, where students consistently score lower than their private school counterparts (Robiso, 2024). Mathematics and statistical skills are crucial to daily life. However, many students found mathematics difficult to learn and understand (Hernandez, 2023; Moreno, 2025).

Math anxiety had a direct negative effect on both math vocabulary and computational fluency, meaning anxious students were less likely to understand math terms or solve basic problems quickly. It is one of the emotional dimensions with the greatest impact on mathematics education (Namkung et al., 2025; Antón-Sancho, 2026; Barroso, 2021; Caviola, 2021; Donolato, 2020; Senior, 2025; Putri, 2024). Emphasizing lowering mathematics anxiety plays a crucial role, as it would enable motivation, resilience, and improved mathematics achievement (Delos Santos, 2025; Demedts, 2022).

The Programme for International Student Assessment (PISA) results have already addressed this issue. Upon testing the students' numeracy skills, the findings showed that Filipino learners scored significantly lower in mathematics compared to their peers internationally. Mathematics anxiety and self-confidence remain a significant barrier in learning mathematics, thus leading to stress and a lack of confidence in dealing with this subject, severely affecting learners' academic performance on the said learning area.

Anxious students were more likely to have negative homework habits and less likely to join math extracurriculars; these two behaviors partially mediated the anxiety-achievement relationship, meaning they explained some of why anxious students performed worse (Song et al., 2023).

The perspectives and experiences that students have with math are extremely diverse. For some people, mathematics is an academic discipline that

they enjoy and excel in; they get a sense of satisfaction from resolving mathematical issues and equations. This anxiety is frequently caused by unfavorable perceptions of mathematics, unfavorable experiences with mathematics, or inadequate preparation for mathematics, all of which could put pressure on the individual to perform well academically (Nolasco, 2025).

Students with low mathematical achievement had feelings of anxiety caused by their uncertainty and doubts regarding their mathematical abilities. Additionally, less motivated students have a poor mindset in learning math, experience anxiety, struggle with critical thinking skills, thus resulting in low academic achievement (Suren et al., 2020). Students consider math a difficult subject, in which this prejudice creates tension, worry, and low motivation, which results in poor academic performance.

Research findings reveal a positive but weak correlation between mathematics anxiety and performance, suggesting that moderate anxiety may enhance achievement. Similarly, motivation showed a positive correlation with performance, indicating that motivated students tend to perform better in mathematics. Attitudes towards mathematics were also positively related to performance, though less significantly (Wahyuni et al, 2023; Yuniarti et al., 2023).

Self-confidence has an important influence on academic achievement, learning, and performance. Academic achievement is predicted by self-confidence. The higher one's self-confidence, the better one's academic success. Teachers and parents both play an important role in enhancing students' self-esteem and self-confidence in order to improve their academic achievement, performance, and learning abilities (Rahid, 2022).

This study determined the profile of the respondents in terms of age, gender, and grade level; level of math anxiety; level self-confidence in mathematics; academic performance in mathematics; the significant relationship between the profile of the respondents and their level of math anxiety; the significant relationship between the profile of the respondents and their level of self-confidence; the significant relationship between the profile of the respondents and their academic performance in mathematics; the significant relationship between math anxiety and academic performance in mathematics of the respondents; and the significant relationship between self-confidence and academic performance in mathematics of the respondents.

This study underscores the importance of viewing mathematics not only as a cognitive discipline but also as an emotional journey. Math anxiety undermines performance by creating fear and avoidance, while self-confidence empowers learners to persist and excel. By understanding the influences of math anxiety and self-confidence on academic performance in mathematics, educators can design holistic interventions that foster academic success, social integration, and psychological well-being.

THEORETICAL REVIEW

Cognitive Interference Theory

The study was anchored to Cognitive Interference Theory, which explains that cognitive interference plays an important role in stress, poor performance,

slow learning, social maladjustment, psychopathology, and behaviours resulting in accidents. This theory explains why anxious students struggle with complex tasks despite having the necessary skills.

A study on Math Anxiety, Self-Efficacy, and Mathematics Performance of High School Learners revealed moderate math anxiety levels but found no significant relationship between math anxiety and demographic profiles. Anxiety was situational, linked to real-world tasks and classroom pressures rather than age or gender (Montablan, 2024).

Control Value Theory

This study was anchored in Control-Value Theory, which explains how achievement emotions such as anxiety are shaped by students' perceptions of control and value in learning tasks. Learners experience anxiety when they feel they lack control over their performance or when they undervalue the importance of the subject. In mathematics, students who perceive limited ability or low relevance of math often develop high levels of anxiety, which interferes with concentration and problem-solving.

A study among Grade 11 learners in Bulacan found a negligible correlation between math anxiety and academic performance. Despite occasional anxiety, many students achieved outstanding results, supporting the null hypothesis that anxiety does not directly hinder achievement (De Jesus, 2024)

Socio-Cultural Theory

This study is anchored in Vygotsky's Socio-Cultural Theory, which emphasized that learning is shaped by social interactions, cultural context, and environmental support. While demographic profiles provide background, they do not directly determine performance. Instead, performance is mediated by instructional quality, peer collaboration, and teacher scaffolding.

In the study conducted among Grade 8 students in the Philippines, the role of age, gender, and learning styles in math achievement. The findings revealed no significant relationship between student profiles and mathematics performance, affirming that demographic characteristics are not strong predictors of achievement. Instead, factors such as motivation, teacher quality, and cultural background played greater roles in influencing outcomes. (Ocampo et al., 2023)

Self-efficacy Theory

The study was anchored to Self-Efficacy Theory, introduced by Bandura. It explains that those with high self-efficacy can achieve what he/she sets out to do – they are healthier, more effective, and generally more successful than those with low self-efficacy expectancies. In this study, students' self-confidence is seen as a personal and behavioral factors that directly affect their academic performance in mathematics.

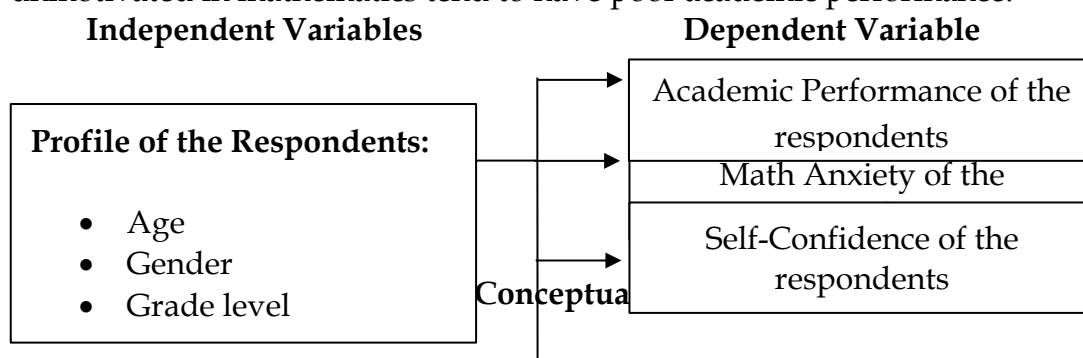
In the study conducted by Montablan et al., no significant relationship was found between mathematics self-efficacy (closely related to self-confidence) and academic performance among high school learners. Despite low self-efficacy,

71% of learners performed at or above proficiency, suggesting other factors drive achievement (Montablan et al, 2024)

Attribution Theory

This study was anchored in Attribution Theory by Weiner, which explains how learners' beliefs about the causes of success and failure shape their emotions, motivation, and performance. Students who attribute success to controllable factors such as effort tend to develop higher self-confidence and persistence, while those who attribute failure to uncontrollable factors like lack of ability are more likely to experience anxiety and avoidance (Weiner, 1995). In the context of mathematics, learners who believe that improvement is possible through effort and strategy are less prone to math anxiety and more motivated to engage with challenging tasks, leading to better academic outcomes.

Studies have highlighted that self-confidence is also strongly related to academic performance in mathematics (Anyanwu, 2024; Montablan, 2024; Octaviani, 2024; Perez-Fuentes, 2020; Putra, 2025; Shone et al., 2024). Self-confidence can buffer the negative effects of anxiety. Learners who believe that they can manage mathematics are less likely to have poor academic performance in mathematics. However, those students who have self-doubts and are unmotivated in mathematics tend to have poor academic performance.



METHODOLOGY

This study utilizes a non-experimental descriptive-correlational research design. The purpose of this design is to describe and examine relationships. The descriptive aspect determined the profile of the respondents, their level of math anxiety, self-confidence in mathematics, and academic performance. The correlational component determined the relationship between the respondents' profiles, math anxiety, self-confidence, and academic performance in mathematics.

The respondents of this study were the learners in Grades 4-6 at Cagaasan Elementary School. This study involved 32 elementary pupils who are at the intermediate level. All pupils from Grades 4 to 6 who are currently enrolled in the school year 2025-2026 were the respondents in this study; thus, a universal sampling method was utilized.

The research instrument of this study was a questionnaire patterned from Montablan I.A. et al, for the level of math anxiety and self-confidence in mathematics; however, there are modifications to suit the present study. The

questionnaire consists of two parts. Learners' academic performance was obtained from official school records provided by the class advisers.

Frequency counts, percentages, means, and standard deviations were used to describe the profile of respondents in terms of gender, age, and grade level, as well as their levels of math anxiety and self-confidence in mathematics. The Chi-square test was employed to determine the relationships between the profile of the respondents and their level of math anxiety, between the profile of the respondents and their level of self-confidence, between the profile of the respondents and their academic performance, between math anxiety and academic performance in mathematics, and between self-confidence and academic performance in mathematics. Statistical analyses will be performed using appropriate statistical software.

RESULTS

Profile of the Respondents

Age

Figure 2 presents the profile of the respondents in terms of age. The largest group of respondents was 11 years old (13 or 41%), followed by those aged 10 years old (9 or 28%), followed by 12 years old (8 or 25%), and 9 years old (2 or 6%). Respondents aged 11 years accounted for 13 or 41%, while the smallest group was those aged 9 years (2 or 6%).

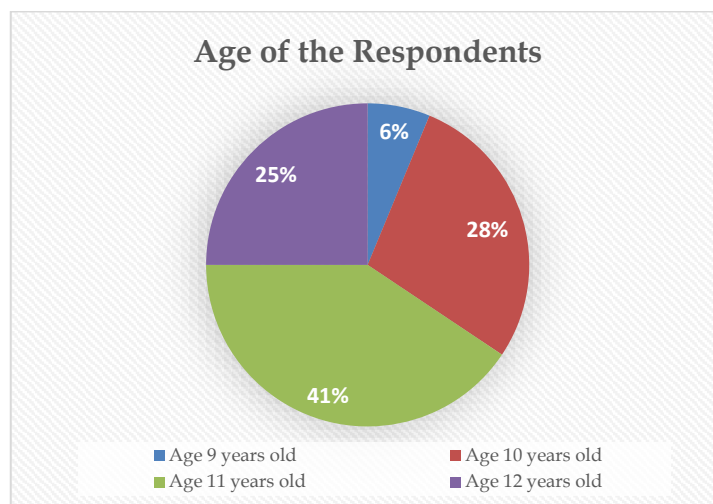


Figure 2: Profile of the Respondents in terms of Age

Gender

Figure 3 shows the profile of the respondents in terms of gender. The majority were male (18 or 56.25%), while female respondents comprised 14 or 43.75% of the total.

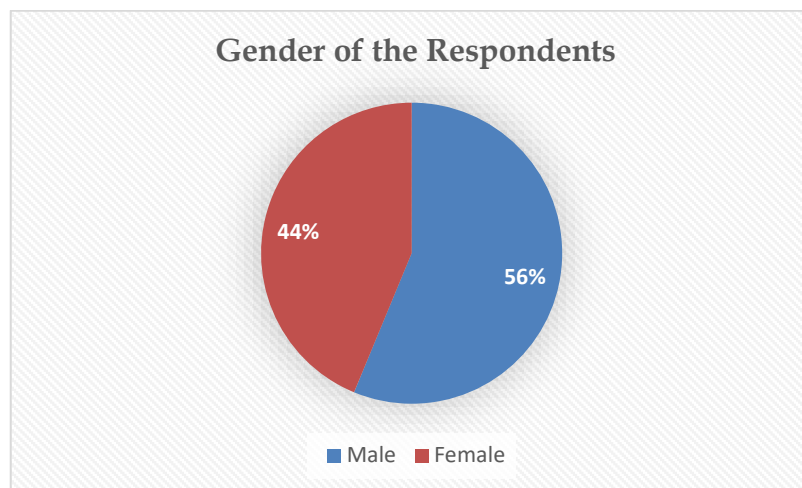


Figure 3. Profile of the Respondents in terms of Gender

Grade level

Figure 4 illustrates the profile of the respondents according to grade level. Most respondents belonged to the Grade IV class (15 or 46.88%). This was followed by those at Grade V class (13 or 40.63%), and the smallest belonged to Grade VI class (4 or 12.50%).

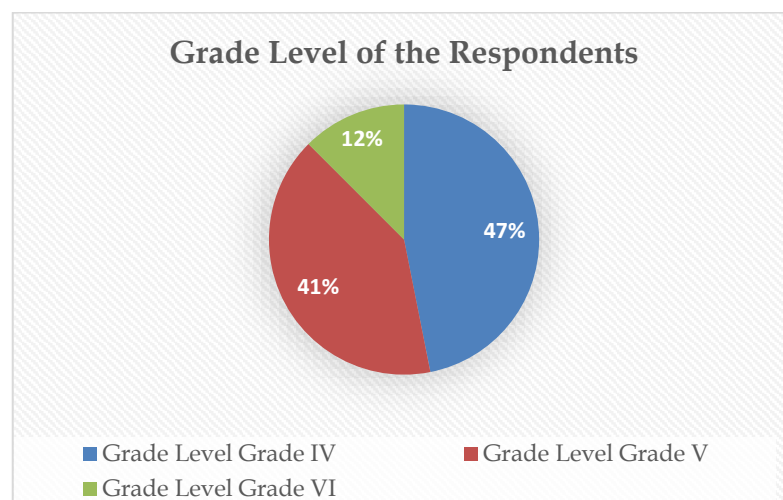


Figure 4. Profile of the Respondents in terms of Grade Level

Math Anxiety of the Respondents

Table 1 presents the level of math anxiety of the respondents. The statement "I feel stressed when I cannot finish math exercises on time." obtained the highest weighted mean of 3.75 (High), indicating that time pressure is a significant source of anxiety. In contrast, the statement "Anxious with addition problems" received the lowest weighted mean of 2.34 (Low), showing that basic computations do not generally provoke fear. The overall weighted mean of 3.49, interpreted as Average, indicates that while math anxiety is present, it is not uniformly overwhelming. However, certain situations can turn this anxiety to a "high" level, particularly those that involve pressure and fear of failure. The findings on math anxiety slightly affirm the results of a previous study which

emphasized that there is a moderate negative correlation between math anxiety and performance among Filipino learners, rejecting the idea that anxiety is harmless. However, they noted variability depending on classroom support (Amora et al., 2023). This finding negates the result of the previous study, showing that math anxiety is a global, consistent barrier, not just a situational spike (Brunner et al., 2026)

Table 1. Math Anxiety of the Respondents

Statements	WM	SD	Int.
I feel stressed when I cannot finish math exercises on time.	3.75	0.83	High
I worry about failing math exams.	3.72	0.84	High
I feel nervous when my teacher asks me to solve a math problem in front of the class.	3.56	0.95	High
Studying for a math test scares me.	3.53	0.94	High
I feel scared when receiving my final math grade.	3.53	0.87	High
I don't feel comfortable being given a "surprise" quiz in a math class.	3.53	0.87	High
Taking a quiz in math makes me uncomfortable.	3.47	1.01	Average
Math elicits fears and panic in me.	3.47	1.01	Average
I feel scared when I cannot understand a math lesson right away.	3.47	0.88	Average
I feel tense when I see numbers and equations.	3.47	0.88	Average
I feel embarrassed when I make mistakes in math.	3.47	0.88	Average
I get nervous when I work on math problems with my classmates.	3.47	0.88	Average
I get worried when I know there will be an upcoming math test in 1 week.	3.44	0.91	Average
I get dizzy when opening a math book and seeing a page full of problems.	3.34	1.05	Average
I feel anxious being given a set of numerical problems involving addition to solve on paper.	2.34	1.18	Low
<i>Mean</i>	<i>3.49</i>	<i>0.93</i>	<i>Average</i>

Self-Confidence in Mathematics of the Respondents

Table 2 presents the level of self-confidence in mathematics among respondents.

The highest-rated statements were "Mathematics is one of my favorite subjects" and "I am capable of making good grades in math," which obtained a weighted mean of 2.97 (Average), suggesting that many learners see mathematics as a positive part of their academic experience. In contrast, the lowest-rated statement, "I feel sure about myself in solving problems," received a weighted mean of 2.75 (Average), indicating uncertainty when faced with problem-solving tasks. The overall weighted mean of 2.89 places the respondents' self-confidence in mathematics at the "average" level. This concludes that learners may believe they can manage mathematical tasks, yet they do not consistently perceive themselves as highly confident in mathematics. The findings affirm the result of the previous study which showed that learners believe they can manage math tasks but do not consistently perceive themselves as highly confident (Cuevas & Berou et al., 2021). Conversely, these findings generally negate the results of a previous study, which highlighted that self-confidence was significantly associated with mathematics performance. Learners with higher confidence achieved better outcomes (Lishchynska et al., 2023).

Table 2. Self-confidence in Mathematics of the Respondents

Statements	WM	SD	Int.
Mathematics is one of my favorite subjects.	2.97	0.95	Average
I am capable of making good grades in Math	2.97	0.82	Average
I am one of the best learners in Mathematics	2.91	0.83	Average
I can easily understand Mathematical problems.	2.91	0.80	Average
I believe that I have a lot of strengths in Mathematics.	2.88	0.87	Average
Compared to other learners, I am a smart student in Mathematics	2.88	0.82	Average
I usually can help my classmates in problem-solving	2.88	0.79	Average
I can usually solve any mathematical problem.	2.88	0.73	Average
I feel sure about myself in solving problems.	2.75	0.77	Average
When I start answering a mathematical question, I usually feel that I will manage to give a solution.	2.75	0.77	Average
<i>Mean</i>	2.89	0.84	Average

Academic Performance of the Respondents

Table 3 presents the academic performance of learners based on their general average.

Out of 32 learners, the majority, or 68.75%, attained a general average within the range of 90–100, which corresponds to the description “outstanding”. Meanwhile, 25.00% of the respondents achieved a general average between 85–89, interpreted as “very satisfactory”. Only 3.13% attained a “satisfactory” rating (80–84), and another 3.13% were rated “fairly satisfactory” (75–79). Notably, none of the respondents fell into the below 75 category, which means that all learners at least met the basic requirements of their grade level. The academic performance results affirm earlier studies indicating that despite moderate math anxiety, learners often maintained high academic performance, highlighting resilience and commitment to studies (Amora et al., 2023). This negates the result of the previous study that showed that anxiety consistently undermines achievement, especially in advanced tasks requiring multistep processes (Namkung et al., 2025)

Table 3. Academic Performance of the Respondents

General Average	Frequency	Percentage (%)	Description
90-100	22	68.75%	Outstanding
85-89	8	25.00%	Very Satisfactory
80-84	1	3.13%	Satisfactory
75-79	1	3.13%	Fairly Satisfactory
Below 75	0	0.00%	Did Not Meet Expectation
Total	32	100%	

Test of Relationship between the Profile of the Respondents and their Level of Math Anxiety

Table 4 presents the results of a test for a significant relationship between the respondents' profiles and their level of math anxiety, using chi-square values, p-values, and hypothesis testing decisions. This analysis determined whether

demographic profiles such as sex, age, and grade level were significantly related to the level of math anxiety of the respondents.

Moreover, the findings showed that math anxiety is a shared experience among learners regardless of their sex, age, or grade level. Thus, the decision across all variables was to fail to reject the null hypothesis (H_0), indicating that math anxiety is not significantly related to these demographic factors. The overall weighted mean of 3.49 (Average) for math anxiety reflects that the learner does experience moderate levels of anxiety in mathematics, yet it is consistent across demographic groups. Male and female learners, younger and older students, as well as those in different grade levels, all reported similar levels of anxiety. This finding affirms the results of a previous study, which revealed that math anxiety is a shared experience across learners of different ages and backgrounds, shaped more by personal perceptions and classroom experiences than by demographic profiles (Nolasco, 2025). This finding negates the result of the previous study, which demonstrates that demographic factors significantly affect the level of anxiety of the learners (Vargas, 2025).

Table 4. Test of the Relationship Between the Profile of the Respondents and their Level of Math Anxiety

Profile Variables	χ^2_c	p-value	Decision	Interpretation
Sex	2.140	0.210	Failed to Reject H_0	Not Significant
Age	4.890	0.180	Failed to Reject H_0	Not Significant
Grade Level	5.020	0.170	Failed to Reject H_0	Not Significant

Test of Relationship between the Profile of the Respondents and their Level of Self-Confidence

Table V presents the results of a test for a significant relationship between the respondents' profiles and their level of self-confidence, using chi-square values, p-values, and hypothesis testing decisions. This analysis determined whether demographic factors such as sex, age, and grade level were significantly related to the level of self-confidence of the respondents.

Moreover, the computed Chi-square values were 2.67 for sex, 3.76 for age, and 6.12 for grade level, with corresponding p-values all greater than 0.05. Thus, the decision across all variables was to fail to reject the null hypothesis (H_0), indicating that self-confidence in mathematics is not significantly influenced by these demographic factors. This means that demographic profiles do not play a decisive role in shaping learners' confidence in mathematics. This finding affirms the results of a previous study, which concluded that self-confidence in mathematics is influenced by self-efficacy, motivation, peer support, and teacher strategies, while demographic characteristics were not significant predictors (Bendol et al., 2025). This finding negates the results of a previous study, which reported that self-efficacy perceptions varied significantly by age and sex, particularly in aspects like vicarious learning and affective states (Ablian & Parangat, 2022).

Table 5. Test of the Relationship between the Profile of the Respondents and their Level of Self-Confidence

Profile Variables	χ^2_c	p-value	Decision	Interpretation
Sex	2.670	0.190	Failed to Reject Ho	Not Significant
Age	3.760	0.290	Failed to Reject Ho	Not Significant
Grade Level	6.120	0.210	Failed to Reject Ho	Not Significant

Test of Relationship between the Profile of the Respondents and their Academic Performance

Table VI presents the results of a test for a significant relationship between the respondents' profiles and their academic performance in mathematics, using chi-square values, p-values, and hypothesis testing decisions. This analysis determined whether demographic factors such as sex, age, and grade level were significantly related to the academic performance in mathematics of the respondents.

Moreover, the computed Chi-square values were 1.98 for sex, 4.22 for age, and 5.87 for grade level, with corresponding p-values all greater than 0.05. Thus, the decision across all variables was to fail to reject the null hypothesis (Ho), indicating that academic performance is not significantly influenced by these demographic factors. This demonstrates that high academic performance in mathematics is not dependent on demographic profiles but rather on other factors such as effective teaching strategies and supportive classroom environments. This finding affirms the results of a previous study, which found that non-intellectual factors such as age, sex, and grade level had no statistically significant relationship with mathematics achievement. Instead, performance was shaped by teacher practices, parental involvement, and school environment (Caberto et al., 2025). This finding negates the results of a previous study, which concluded that academic performance is partly shaped by demographic characteristics and not by teaching strategies or motivation (Sicuan, 2025).

Table 6. Test of Relationship between the Profile of the Respondents and their Academic Performance

Profile Variables	χ^2_c	p-value	Decision	Interpretation
Sex	1.980	0.230	Failed to Reject Ho	Not Significant
Age	4.220	0.240	Failed to Reject Ho	Not Significant
Grade Level	5.870	0.170	Failed to Reject Ho	Not Significant

Test of Relationship between Math Anxiety and Academic Performance in Mathematics of the Respondents

Table 7 presents the test of the significant relationship between the math anxiety of the respondents and their academic performance in mathematics, using chi-square values, p-values, and hypothesis testing decisions.

The findings showed that the computed chi-square value was 6.21 with a p-value of 0.18. Since the p-value is greater than the 0.05 level of significance, the decision failed to reject the null hypothesis. This means that there is no significant

relationship between the respondents' level of math anxiety and their academic performance in mathematics. This indicates that learners are able to cope with their math anxiety and still perform well academically. The findings affirm the result of the previous study, which showed that while math anxiety is present across learners, its impact on performance is moderated by resilience, teacher support, and classroom environment. Learners can maintain high achievement despite anxiety (Divine et al., 2020). This negates the results of the previous study, which concluded that students with excellent performance reported having significantly lower anxiety, showing that achievement and anxiety are related (Ariola, 2025). Parents must monitor their children, especially when doing math homework (Nobis & Caparoso, 2024).

Table 7. Test for the Relationship Between Math Anxiety and Academic Performance in Mathematics of the Respondents

χ^2_c	p-value	Decision	Interpretation
6.210	0.180	Failed to Reject H_0	Not Significant

Test of Relationship between Self-confidence and Academic Performance in Mathematics of the Respondents

Table 8 presents the test of the significant relationship between the self-confidence of the respondents and their academic performance in mathematics, using chi-square values, p-values, and hypothesis testing decisions.

The findings showed that the computed chi-square value was 8.34 with a p-value of 0.12. Since the p-value is greater than the 0.05 level of significance, the decision failed to reject the null hypothesis. This means that there is no significant relationship between the respondents' self-confidence and their academic performance in mathematics. The respondents, even with moderate self-confidence, are able to excel academically. They may feel uncertain about their problem-solving abilities or hesitate to recognize their strengths, yet they still demonstrate high academic performance. The findings generally affirm the results of previous studies, which highlighted that self-confidence is also strongly related to academic performance in mathematics (Anyanwu, 2024; Montablan, 2024; Octaviani, 2024; Perez-Fuentes, 2020; Putra, 2025; Shone et al., 2024). The findings negate the result of the previous study, which concluded that self-efficacy is strongly related to the academic performance in mathematics of the learners (Lone, 2024). According to Lupas et al (2024) learners can overcome challenges in dealing with math problems by providing learning experiences that can boost their interest, like using gadgets in the teaching and learning process.

Table 8. Test for the Relationship between Self-Confidence and Academic Performance in Mathematics of the Respondents

χ^2_c	p-value	Decision	Interpretation
8.340	0.120	Failed to Reject H_0	Not Significant

DISCUSSION

The finding emphasizes that learners' math anxiety is situational. While their overall anxiety level is "average", it spikes to "high" in contexts involving fear of failure and public performance. Conversely, anxiety diminishes in routine or basic tasks, where learners feel more secure and less pressured. Emphasizing lowering mathematics anxiety plays a crucial role, as it would enable motivation, resilience, and improved mathematics achievement (Delos Santos, 2025; Demedts, 2022). Although, math anxiety is a global, consistent barrier, not just a situational spike, which negates to the result of this study (Brunner et al., 2026).

Moreover, the results emphasize that learners' self-confidence in mathematics is situational and moderate. They feel more confident about liking the subject and achieving good grades, but their confidence diminishes when faced with tasks requiring persistence, problem-solving, and self-recognition of strengths. This negates the research findings of Lishchynska & Palmer (2023) that self-confidence was significantly associated with mathematics performance. However, previous study showed that learners believe they can manage math tasks, it just happens that they do not consistently perceive themselves as highly confident (Cuevas & Berou et al., 2021).

The distribution of academic performance highlights a positive academic climate, with the majority of learners excelling and only a minimal number requiring targeted assistance. This affirms the research results of Amora et al. (2023) that Filipino learners often maintained high academic performance, affirming resilience and commitment to studies. The dominance of "outstanding" and "very satisfactory" ratings reflects the effectiveness of instructional practices and the learners' commitment to their studies. However, result of the previous study that showed that anxiety consistently undermines achievement, especially in advanced tasks requiring multistep processes (Namkung et al., 2025). This signals the need for differentiated instruction and remedial measures to ensure that all learners can achieve their full potential.

In addition, the absence of significant relationships highlights that math anxiety is more situational than demographic (Nolasco, 2025). Learners tend to feel anxious in contexts such as tests, deadlines, and public performance, rather than because of their sex, age, or grade level. This underscores the importance of focusing interventions on classroom practices and learning environments rather than demographic distinctions. Conversely, this finding negates the result of the previous study, which demonstrates that demographic factors significantly affect the level of anxiety of the learners (Vargas, 2025).

Since self-confidence is not dependent on demographic profiles that affirm the results of the study conducted by Bendol et al. (2025), interventions should be inclusive and designed to strengthen learners' belief in their mathematical abilities through positive reinforcement, problem-solving opportunities, and recognition of strengths. By fostering confidence, educators can help learners align their self-perceptions with their actual academic performance, ensuring that all students, regardless of background, develop resilience and a stronger belief in their mathematical capabilities. This finding negates the results of a previous study, which reported that self-efficacy perceptions varied significantly by age and sex,

particularly in aspects like vicarious learning and affective states (Ablian & Parangat, 2022).

Respondents' academic performance in mathematics is more strongly influenced by instructional quality and learning conditions than by demographic profiles. Learners across all groups are capable of excelling when provided with appropriate support, guidance, and opportunities to succeed. The results emphasize the importance of maintaining inclusive and equitable educational practices that ensure all learners, regardless of sex, age, or grade level, can achieve high academic performance, which affirms on the results of the study conducted by Caberto et al. (2025). This negates the results of a previous study, which concluded that academic performance is partly shaped by demographic characteristics and not by teaching strategies or motivation (Sicuan, 2025).

The results highlight that math anxiety does not necessarily hinder academic performance. While anxiety may affect learners' emotional state and confidence, it does not directly translate into poor academic outcomes, which affirms the result of the study by Divine et al (2020). Instead, students appear to employ coping strategies, resilience, and determination that allow them to excel despite experiencing stress in mathematics. Learners' academic success is influenced by multiple factors beyond anxiety, such as effective teaching strategies, supportive learning environments, and intrinsic motivation. This negates the results of the previous study, which concluded that students with excellent performance reported having significantly lower anxiety, showing that achievement and anxiety are related (Ariola, 2025).

Furthermore, the absence of a significant relationship between self-confidence and academic performance underscores the need for educators to focus on both competence and confidence-building. This affirms Anyanwu (2024), Montablan (2024), Octaviani (2024), Perez-Fuentes (2020), Putra (2025), and Shone et al. (2024), who noted that self-confidence is also strongly related to academic performance in mathematics. This suggests that other factors – such as effective teaching strategies, peer collaboration, motivation, and resilience- play a more critical role in sustaining strong performance in mathematics. The negates the result of the previous study, which concluded that self-efficacy is strongly related to the academic performance in mathematics of the learners (Lone, 2024). According to Lupas et al (2024) learners can overcome challenges in dealing with math problems by providing learning experiences that can help boost their interest, like using gadgets in the teaching and learning process.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions were drawn:

The demographic profile of the respondents showed that the respondents are distributed across different age groups, with the largest proportion belonging to the 11-year-old group. The majority of the respondents were male, representing 18, while 14 females, this showed that the majority of learners are male. In terms of their grade level, most respondents belong to the Grade IV class. For the academic performance, most learners belong to the Outstanding and Very Satisfactory levels, while a small proportion fall under lower performance categories.

The respondents generally experience an average level of math anxiety, which becomes heightened in situations involving performance pressure such as deadlines, examinations, and public problem-solving. While anxiety is present, it is not uniformly overwhelming, and only specific contexts elevate it to a “high” level. This suggests that math anxiety among learners is situational rather than constant, highlighting the need for supportive strategies to reduce stress during high-pressure tasks.

Moreover, the respondents generally possess an average level of self-confidence in mathematics. While they believe they can manage mathematical tasks, they do not consistently view themselves as highly confident or excelling in the subject. Their confidence remains moderate, reflecting a balance between positive self-perceptions and lingering doubts about their mathematical abilities.

Furthermore, age, gender, and grade level have no significant relationship with learners’ math anxiety. Instead, anxiety is situational, arising mainly during tests, deadlines, and public performance rather than being influenced by demographic factors. This highlights that math anxiety is shaped more by classroom experiences and performance pressures than by learners’ profiles.

Age, gender, and grade level have no significant relationship with learners’ self-confidence in mathematics. Instead, confidence fluctuates depending on situational factors such as problem-solving experiences, classroom activities, and teacher support. This indicates that self-confidence is shaped more by instructional and environmental influences than by demographic characteristics.

Age, gender, and grade level have no significant relationship with learners’ academic performance in mathematics. High achievement is not determined by demographic characteristics but is instead influenced by effective teaching strategies, learner motivation, and supportive classroom environments. This highlights the importance of instructional quality and school support systems in sustaining strong academic outcomes.

Math anxiety has no significant relationship with learners’ academic performance in mathematics. While anxiety may affect learners’ emotional state and confidence, it does not directly lead to lower achievement. This suggests that students can maintain strong academic outcomes despite experiencing varying levels of anxiety, highlighting the importance of resilience and supportive learning environments.

Self-confidence in mathematics has no significant relationship with learners’ academic performance. This means that students’ perception of their confidence does not directly determine their success, suggesting that academic achievement is influenced more by effective teaching, motivation, and supportive learning environments than by confidence levels alone.

Based on the findings and conclusions of the study, learners should engage themselves actively in classroom discussions, group work, and problem-solving activities to strengthen confidence and improve mathematical skills. They should also develop a positive attitude toward challenges by viewing mistakes as opportunities to learn, which helps balance self-confidence and reduce fear of failure. It is also recommended that they approach teachers, peers, or parents for guidance when struggling, ensuring that doubts are addressed early and

confidence is gradually built. Teachers should integrate relaxation techniques, flexible deadlines, and supportive feedback to help learners manage math anxiety during high-pressure tasks like exams and public problem-solving. They should also create a classroom climate that encourages participation, reduces fear of failure, and promotes resilience, ensuring learners feel safe to take risks in solving mathematical tasks. School Administrators should organize training programs for teachers on strategies to reduce math anxiety and build learner confidence, focusing on classroom practices that minimize performance pressure. They should also establish mechanisms to regularly monitor both academic performance and learners' emotional well-being, ensuring early intervention when anxiety or low confidence is observed. Parents should encourage a supportive outlook toward mathematics at home, helping their children view math as manageable and rewarding rather than intimidating. They must also provide opportunities for learners to practice math in everyday contexts to build confidence and relevance. Most importantly, parents must maintain open communication with teachers to address learners' challenges early and help to reinforce classroom strategies at home.

FURTHER STUDY

Future researchers may expand the sample size, include learners from different schools or grade levels, and explore additional variables such as teaching styles, parental involvement, or socio-economic factors. Longitudinal research could also provide deeper insights into how math anxiety and self-confidence evolve and influence academic performance.

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