

# Career Interest, Attitude towards Mathematics, And Academic Performance of Senior High School Students

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## ABSTRACT

This study examined the level of academic performance of the senior high school students in their Statistics and Probability subject and its relationship to their career interest and attitude towards mathematics. The study involved 119 senior high school students in one of the private institutions in the Negros Island Region. The data were gathered using adopted questionnaire that assessed students' career interests and attitude towards Mathematics. The study used a descriptive – correlational as the research method which revealed that mostly of the respondents have multiple interest evidenced that they have variety of options as to career interest. However, the study also showed that the respondents have a moderate level of attitude towards mathematics. On the other hand, respondents' level of academic performance was very satisfactory, indicating that they were performing well in their Statistics and Probability subject. Career interest and academic performance of the respondents showed no significant relationship while attitude towards mathematics and academic performance showed a weak but positive significant relationship. The findings suggested that preferred career interest of the student indicated a wide variety of career opportunities regardless of their strand. This study recommends strengthening of the career programs to help students explore more of their career interest and provide activities that would motivate them to have a positive attitude towards mathematics.

**Keywords:** Mathematics, career interest, attitude towards mathematics, academic performance, senior high school students

## INTRODUCTION

Career interest among Grade 12 students is a significant factor that influences their academic planning and future career choices as they prepare to enter higher education or the workforce. The Senior High School program of the Department of Education was implemented through the Enhanced Basic Education Act of 2013 (Republic Act No. 10533), which expands the curriculum by providing opportunities for college readiness and vocational or technical career pathways. According to Chen et al. (2021), the senior high school period is a crucial phase of career development because students begin to clarify their personal interests, recognize their strengths, and explore various career opportunities. Additionally, the Department of Education releases its guidelines in career tracking highlighting that secondary students must be guided in choosing their career tracks by providing informed career choices towards becoming productive and contributing individuals (Secondary School Career Guidance and Counseling Act of 2019).

Nazareno et al. (2021) found that students were more likely to choose educational pathways that aligned with their academic strengths and personal interests. Although academic performance was not directly examined, the findings suggested that students whose career interests correspond with their competencies are more likely to remain engaged in learning and work toward academic success. This alignment between interests and educational priorities promote meaningful participation in academic activities and encourages students to develop the competencies necessary for future careers.

More recent evidence directly supporting the relationship between career interest and academic performance was provided by Mallari and Guevara (2026). Based on this study, it examined the relationship between career interest, self-efficacy beliefs, and academic performance among senior high school students. Their findings indicated that students generally exhibited high levels of career interest and self-efficacy alongside satisfactory academic performance.

Despite the importance of understanding students' career interests, attitudes toward mathematics, and academic performance, there is limited research examining the relationship among these variables among senior high school students, particularly those in the Science, Technology, Engineering, and Mathematics (STEM) strand. Hence, this study was conducted to determine whether students' career interests and attitudes toward mathematics are related to their academic performance. This study is relevant because these students choose their preferred strand upon entering senior high school as preparation for college and future careers. The findings may provide school administrators, mathematics educators, and guidance counselors with information that can be used in developing programs that support students' academic and career preparation.

## **METHODOLOGY**

### **Research Design**

This study utilized a descriptive – correlational research design. The descriptive research design precisely and systematically depicts, observes, or validates group aspects using quantifiable information, such as the relationships among variables, in their natural state (Siedlecki, 2020). Descriptive design was used to identify career interests and the levels of attitude towards mathematics and academic performance of Grade 12 students. It also used correlational design to determine the significant relationship between the career interests, level of attitude towards mathematics, and their academic performance in Statistics and Probability. Correlation can demonstrate relationship between two or more variables. However, it cannot prove that changing one variable will affect the other (Cherry, 2023).

### **Subject and Respondents of the Study**

The subject and respondents of this study were the Grade 12 Senior High School students enrolled in the Science, Technology, Engineering, and Mathematics (STEM) strand from one of the private institutions in Negros Occidental during the school year 2026–2027.

### **Population and Sample Size**

The total population of this study was the 168 Grade 12 STEM Allied Health Sciences students who were enrolled during the school year 2026 – 2027. A sample size of 119 Grade 12 senior high school students was identified using the Yamane's formula with a 95% confidence level and a margin of error of 5%.

### **Data Gathering Instrument**

The researcher for this study utilized adopted instruments to gather the information needed. The questionnaires are categorized into two sections, depicting respondent's career interest and attitude towards mathematics. For the career interest, John Holland's RIASEC Career Interest Inventory was utilized. The instrument classifies individuals into six personalities and work environment types. The result was used to determine the dominant career interests of the respondent whether they are Realistic, Investigative, Artistic, Social, Enterprising and Conventional. In the RIASEC Test, the top three highest scores determine the interest of the students.

On the attitude towards mathematics, the researcher used a survey questionnaire adopted from the modified questionnaire used by Bautista (2025) which consists of twenty items to evaluate the respondents' attitude towards mathematics. The instrument had employed a 5 – point Likert Scale, ranging from 1 = strongly disagree to 5 = strongly agree, allowing the respondents to express their level of attitude towards mathematics. Lastly, the average grade in Statistics and Probability was the basis for the respondent's academic performance.

## Data Analyses

After the data collection, the data were tallied, tabulated, and analyzed using the appropriate statistical tools.

To determine the career interest of Grade 12 students, frequency and percentage distribution was used. Academic performance and attitude towards mathematics were both identified using mean and standard deviation. In determining the if career interest and academic performance of these Grade 12 students have relationship, the Chi – Square Test of Independence was utilized. Lastly, Spearman’s Rank correlation coefficient was used to identify the relationship between attitude towards mathematics and academic performance.

## RESULTS AND DISCUSSION

This chapter exhibits, examine, and explains the data gathered in the study. Research information is arranged in a manner to address the research questions and objectives. To accurately interpret the result of the study, the researcher used appropriate statistical methods and tools .

### Career Interests of Senior High School Students

Table 1 shows the distribution of student’s career interests result in terms of their three dominant interests in the RIASEC test.

Table 1. Frequency and Percent Distribution of the RIASEC Results of Respondents.

| Profile | Category                                  | f | %    |
|---------|-------------------------------------------|---|------|
| RIASEC  | Realistic, Enterprising, Conventional     | 1 | 0.84 |
|         | Social, Conventional, Realistic           | 5 | 4.20 |
|         | Realistic, Investigative, Conventional    | 3 | 2.52 |
|         | Realistic, Investigative, Social          | 8 | 6.72 |
|         | Artistic, Social, Realistic               | 6 | 5.04 |
|         | Enterprising, Conventional, Artistic      | 3 | 2.52 |
|         | Investigative, Artistic, Conventional     | 2 | 1.68 |
|         | Investigative, Social, Conventional       | 6 | 5.04 |
|         | Realistic, Artistic, Conventional         | 3 | 2.52 |
|         | Realistic, Investigative, Artistic        | 5 | 4.20 |
|         | Artistic, Investigative, Social           | 2 | 1.68 |
|         | Realistic, Investigative, Enterprising    | 1 | 0.84 |
|         | Enterprising, Social, Conventional        | 4 | 3.36 |
|         | Artistic, Social, Conventional            | 3 | 2.52 |
|         | Realistic, Enterprising, Social           | 1 | 0.84 |
|         | Investigative, Social, Enterprising       | 7 | 5.88 |
|         | Artistic, Social, Enterprising            | 1 | 0.84 |
|         | Investigative, Conventional, Enterprising | 5 | 4.20 |
|         | Realistic, Artistic, Enterprising         | 1 | 0.84 |

|  |          |     |        |
|--|----------|-----|--------|
|  | MULTIPLE | 52  | 43.70  |
|  | Total    | 119 | 100.00 |

Table 1 shows the distribution of the results of the RIASEC test of the respondents. RIASEC test was used to identify the career interests of the Grade 12 senior high school students. The table shows that fifty – two (52) of the respondents have multiple interest taking a percentage of 43.70% of the entire population. Furthermore, in the result of only three dominant career interest, Realistic, Investigate, Social career interest is the most numbered preference from the respondents with 8 respondents (6.72%), followed by the Investigative, Social, Enterprising, with 7 respondents (5.88%). Meanwhile, the combinations Artistic, Social, Realistic and Investigative, Social, Conventional each have 5 respondents (4.20%). On the other hand, the least frequent combinations were Realistic, Enterprising, Conventional; Realistic, Investigative, Enterprising; and Realistic, Social, Conventional which only has 1 respondent (0.84%) for each combination. It is also evident that, Realistic domain appeared in 10 out of 19 unique career interest combinations identified among the students.

The results from Table 1, showed that mostly of the senior high school students are inclined with many interests that makes them explore different careers and suggests that senior high school students are still exploring different career opportunities. Moreso, being enrolled in STEM, the respondents indicates that they appreciate a more practical and hands – on activities which showed most of them having Realistic dominant RIASEC result.

These results validate the claim of Aplaca and Torrior (2025) that students in senior high school are still exploring their career opportunities and is demonstrating a high level of interests. In addition to this, the results are in congruence with the research of Chen et.al. (2021) which explains that in this period of their education, students are just beginning to identify their personal interests, recognizing their strengths, and exploring various career opportunities. Relative to this, in the systematic review conducted by Tindan and Anaba (2024), it was found out that hands – on science improves the cognitive and academic of the students engaged in those activities.

### Level of Attitude Towards Mathematics

Table 2 below shows the level of attitude towards mathematics of Grade 12 students in one of the private institutions in Negros Occidental for the school year 2026 – 2027.

Table 2. Level of Attitude Towards Mathematics of Senior High School Students.

| Level of Attitude Towards Mathematics | f   | Mean | SD   | Interpretation |
|---------------------------------------|-----|------|------|----------------|
| Very High                             | 12  | 3.07 | 0.82 | Moderate       |
| High                                  | 24  |      |      |                |
| Moderate                              | 46  |      |      |                |
| Low                                   | 27  |      |      |                |
| Very Low                              | 10  |      |      |                |
| Total                                 | 119 |      |      |                |

*Legend: (4.21-5.00)-Very High; (3.41-4.20)-High; (2.61-3.40)-Moderate; (1.81-2.60)-Low; (1.00-1.80)-Very Low*

Table 2 represents the level of attitude towards mathematics of the respondents with an overall mean of 3.07 (SD = 0.82) which was interpreted that the respondents have a moderate attitude towards mathematics. Of the 119 respondents, the majority, or 46 students, demonstrated a moderate attitude toward Mathematics. Meanwhile, the fewest number of respondents, 10 students, demonstrated a very low attitude toward the subject.

The result indicates that when it comes to mathematics, students have a fair disposition about the subject, since the respondents have neither a positive nor a negative attitude towards their level of attitude.

This result was consistent in the study made by Bautista (2025) indicating that students from the private schools often displayed a neutral attitude towards mathematics. Unfortunately, the same study showed that there is really a lag when it comes to the mathematics education of the country, as evident on the latest results of the Program for International Student Assessment (PISA). To add, this also relates to the research conducted by Hebres (2022) that these results in the country's ranking is due to negative to moderate attitude towards mathematics and a shortage of competent teachers to teach the discipline.

### Level of Academic Performance

Table 3 below shows the mean and standard deviation of the level of academic performance of the senior high school students in Statistics and Probability.

Table 3. Level of Academic Performance of Senior High School Students.

| Level of Academic Performance | f   | Mean  | SD   | Interpretation    |
|-------------------------------|-----|-------|------|-------------------|
| Outstanding                   | 61  | 89.60 | 4.00 | Very Satisfactory |
| Very Satisfactory             | 42  |       |      |                   |
| Satisfactory                  | 16  |       |      |                   |
| Fairly Satisfactory           | 0   |       |      |                   |
| Did Not Meet Expectations     | 0   |       |      |                   |
| Total                         | 119 |       |      |                   |

*Legend: (90-100)-Outstanding; (85-89)-Very Satisfactory; (80-84)-Satisfactory; (75-79)-Fairly Satisfactory; (Below 75)-Did Not Meet Expectations*

Table 3 shows the level of academic performance of senior high school in their Statistics and Probability subject. The respondents have a general average of 89.60 (SD = 4.00) which indicates that students taking this subject earns a very satisfactory rating. Most of the respondents (61) received an outstanding academic achievement in their subject, while none (0) of the respondents received a satisfactory rating or did not meet expectations in their Statistics and Probability grades.

Based on the result, it can be identified that the respondents do not attribute weaknesses in their prior knowledge, limited conceptual understanding and insufficient mastery of basic competencies in the subject Statistics and Probability. The result implies that the respondents have met all the expected learning competencies required from the subject matter.

This result was in contrast with the research conducted by Almerino, et.al (2020) in which his respondents was observed to have a low academic performance in mathematics. In another study, the overall performance of senior high school students in their Statistics and Probability test shows a satisfactory level which can be interpreted as moderate mastery of the learning competencies (Aballe, 2025). Lastly, as based on the study of Jade and Oco (2023) students with high levels of mathematics competency are more likely to achieve higher levels of academic access.

### Relationship between RIASEC result and Academic Performance

Table 4 shows the relationship of the career pathway measured using the RIASEC test and academic performance of senior high school students.

Table 4. Relationship between RIASEC Result and Academic Performance.

| Variable             | Test Statistics ( $\chi^2$ ) | p-value | Decision for $H_0$     | Interpretation  |
|----------------------|------------------------------|---------|------------------------|-----------------|
| RIASEC result vs.    | 29.970                       | 0.821   | Failed to Reject $H_0$ | Not Significant |
| Academic Performance |                              |         |                        |                 |

The table shows the relationship between career interest using the RIASEC test and the academic performance of the senior high school students using the Chi Square Test. The findings revealed that there is no significant relationship between the variables ( $\chi^2 = 29.970, p = 0.821$ ), therefore, the null hypothesis is not rejected.

This indicates that the career interest of the students does not affect their academic performance in Statistics and Probability. The high p-value further suggests that regardless of the dominant career interests of students they share the same level of academic performance.

This result is in contrast with the research conducted by Nieva (2022) that states that interests related to administrative and financial operations shows positive relationship with achievements in various subjects including Mathematics. Additionally, in the study of Zhao (2026) student's with clear career interest often translates to stronger participation in academic achievement and greater persistence in pursuing educational success. Furthermore, the result also aligns with the study of Nazareno (2021) personal interests are aligned with the academic strengths.

### Relationship between Attitude Towards Mathematics and Academic Performance

Table 5 below shows the relationship between senior high school student's attitude towards mathematics and academic performance in their Statistics and Probability subject. It presents the statistical test used to determine whether a significant relationship exists between the students' attitudes towards Mathematics and their academic performance.

Table 5. Relationship between Attitude Towards Mathematics and Academic Performance.

| Variable                         | Test Statistics ( $r_s$ ) | p-value | Decision for $H_0$ | Interpretation |
|----------------------------------|---------------------------|---------|--------------------|----------------|
| Attitude Towards Mathematics vs. | 0.255**                   | 0.005   | Reject $H_0$       | Significant    |
| Academic Performance             |                           |         |                    |                |

Table 5 presents the relationship between the attitude towards mathematics and academic performance of the Grade 12 STEM students using the Spearman's Rho. The results revealed that there is a significant relationship between the two variables ( $r_s = 0.255, p = 0.005$ ), therefore the null hypothesis is rejected. This implies that the level of attitude towards mathematics affects the level of academic performance of the senior high school students. The result shows a weak positive correlation ( $r_s = 0.255$ ) that indicates that when variable is increasing the other variable is slightly increasing as well.

This result is like the result of the study conducted by Sanchez and Perez in 2023 that indicates that students who exhibited a positive attitude in Mathematics also demonstrated a positive or high academic performance. A study that was conducted by Idris et (2021) also found out that students who have favorable attitudes performs better in mathematics that those with negative attitudes, according to the author, it is important to nurture a positive attitude towards mathematics so that it will improve students' academic performance. This result was also in line with the result of Cabardo and Dolor (2022) which found out that students who have a positive attitude toward mathematics generally obtained higher mathematics grades.

## CONCLUSION

From the results of the study, the following conclusions were drawn: It showed that majority of the students enrolled in a private institution in Negros Island Region has a diverse career interest, with a considerable number of students with multiple career pathway identified using the RIASEC test. The preferred career pathway of the students enrolled in the STEM strand indicates a wide variety of career interests regardless of the student's strand. The study further showed that there is a moderate level of attitude towards mathematics indicating that the respondents have a neutral disposition about their attitude towards the subject. The respondents also displayed a very satisfactory average in their level of academic performance. This result means that even if STEM students do have different career pathway, they excel in their Statistics and Probability subjects. This is an indication that regardless of their RIASEC result they are still able to perform their academic responsibilities. An indication of no significant results between the academic performance and the RIASEC test that measures the career pathway of the students.

However, an indication of a significant but weak positive correlation was denoted between academic performance and the level of attitude of students towards mathematics. In general, the study concludes that while career interests are diverse and independent of students' academic performance in Statistics and Probability, fostering positive attitudes toward mathematics may contribute to improved academic outcomes. Thus, educators must continue to implement strategies that enhance students' engagement, confidence, and appreciation of mathematics while recognizing the diversity of students' career interests.

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