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PREDICTIVE FACTORS AFFECTING THE MATHEMATICS PERFORMANCE OF K-12 GRADUATES

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ABSTRACT: This study determined the predictive factors affecting the performance of the K-12 graduates in Mathematics. It identified the profile, mathematics performance and attitude of the respondents. Furthermore, it determined the difference on the academic performance of the respondents in mathematics when grouped according to profile and it studied which among the independent variables best predict the performance of the respondents. The study used the descriptive design. The survey-questionnaire was used to gather data and the data were analyzed using the frequency counts, mean, percentage, multiple Regression, T-test and ANOVA. The study found out that majority of the respondents are early adults, females and General Academic Strand (GAS) graduates. The respondents' fathers are high school graduates; while, their mothers are college graduates with family income that range from 2,100-5,000. The mathematics performance of the respondents is "good". The study found out that there is no significant difference on the Mathematics performance of the respondents when grouped according to age, sex, highest educational attainment and monthly income of the respondents' parents. In contrast, the study found out that the Senior High school track was significantly related to the academic performance of the respondents. And the findings revealed that among the variables, Mathematics attitude best predict Mathematics performance.

Keywords: *Attitude towards Mathematics, Mathematics Performance, Predictive Factors, Profile and K-12 Graduates*

I. INTRODUCTION

Academic success of students towards Mathematics depends greatly on some predictive factors such as profile of the learners, attitude and perception of the students towards mathematics, educational attainment of the parents, academic preparation of the students, quality instruction received by the students from their Senior High School and the teacher's role as the academic source of knowledge and information. Given this premise, attitude, academic preparation and profile of the respondents play vital roles in the improved Mathematics performance of the students in the university and in the outside world at large.

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This is supported by the studies of Nicolaidou and Philippou (2003) who revealed that there is a significant correlation between attitudes and Mathematics performance. They stated further that students having positive attitudes achieved better in Mathematics.

Corollary, there are also other contributory factors affecting the Mathematics performance of the students. These are the parents' highest educational attainment and their capacity to provide the educational needs of their schooling children. The rich-print home environment and parents' full support are likewise deemed necessary in the intellectual development of the students. Henceforth, highest educational attainment of parents and socio-economic status of the respondent's family can be a contributory factor of students' success in their academic undertaking. Henderson et al (2002) as cited by Navaro (2018) found out that students with involved parents, no matter what their income and background, were more likely to have higher grades and test scores.

On the other hand, the findings of Reyes (2008) in his study found out that affluent students can learn more and can achieve higher mathematical level compared to those who belonged to the poor families. This is attributed that richer students can purchase books and other related materials that may help them increase their achievement in mathematics.

Many researches around the world (Brown-Jeffy, 2008, Hofferth & Sandberg, 2001, Marilys Hernandez (2014), etc.) were being conducted due to the existing trends that the mathematics performance is being affected by the socio-economic status of the parents. Most researches were conducted correlating mathematics performance and socio-economic status of the students wherein, it is found out that learners who got higher grades in mathematics belonged to the upper class of the family in the society.

On the other hand, most researchers had reported that boys have more positive self-concept than girls in Mathematics (Kamoru & Ramon, 2017). It was also observed that boys outperform girls in standardized test in Math, but girls perform better when specific tests are given to measure their knowledge and understanding on the topics discussed (Ganley et al., 2013; Spencer et al., 1999). Several established results which proved that boys perform better in Math exist, but still, this area should be explored further to affirm or contradict the previous findings presented in this literature.

In addition, Cvencek et al. (2015) studied the gender identity, Math -gender stereotypes, Math self-concepts, and Math achievement of Singaporean elementary students. Students were asked to answer the Child Implicit Association Tests (Child IAT) and the standardized Math achievement test. Results showed that Math self-concepts were positively related to Math achievement. There was a significant correlation between stronger Math self-concept and stronger Math-gender stereotypes for boys but a weaker Math self-concept for girls. Lastly, Math-gender stereotypes were significantly related to Math achievement.

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In the Philippines, limited kinds of literature discuss gender differences in the self-concept and performance of the students in mathematics. It is interesting to explore whether the findings of the previous studies are consistent or reflective with the students in this country. According to Capuno et al. (2019) as mentioned by Peteros (2020), Filipino students' performance in Math needs to be improved as reflected in the 2016-2017 Global Competitiveness Report; in this, the Philippines ranked 79th out of the 138 participating countries in terms of the quality of Science and Math education. This report is consistent with the Department of Education's (DepEd) National Achievement Test (NAT) results, in which the Mean Percentage Score in Mathematics was 48.63% a score below the 50 percent requirement of DepEd. It is essential that factors affecting the performance of the students in Math are explored in order to address these concerns, neglecting to address these problems will worsen the situation of the country's educational development. To address these problems, an assessment of the status of the problem must start from the school level.

At Cagayan State University, majority of the students enrolled in board courses were Academic Track graduates where mathematics is one of the major subjects that needs full attention. However, most students of the College of Hospitality Management were graduates of non-academic track. Most of them were graduates of TVL or Technical-Vocational-Livelihood track. During the informal interview with the students, they took TVL because amenably they were not that intellectually competent in loaded subjects like Math, Science and in basic Engineering; but they were gifted with entrepreneurial skills and talents that perfectly matched with their present course.

Observably, most students have not fully mastered the basics of Mathematics their foundation in Math is not fully strengthened. Some problem-solving skills were not fully taught to them when they were in the elementary and high school. Consequently, some of them have negative perception and attitude towards Mathematics.

The study is anchored on Integration Theory and Attitude change of Norman H. Anderson. This theory of information integration is applied to attitude. For analysis, a simple attitudinal model of judgment is used, qualitative comparisons are made to relate whether attitude has a bearing to one's achievement in Math.

In this study, the research questions such as "What is the profile of the respondents in terms of age, sex, Senior High School track, father's highest educational attainment, mother's highest educational attainment and monthly income of parents?"; "What is the mathematics performance of the respondents?"; "Is there a significant difference on the mathematics performance of the respondents when grouped according to profile?"; "What is the attitude of the respondents towards Mathematics?", and "Which of the independent variables best predict the mathematics performance of the respondents?" were answered.

Objectives of the Study

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This study determined the attitudes of the respondents and their mathematics performance in Mathematics in the Modern World. Moreover, this study correlated the identified predictive variables and their academic performance in mathematics.

II.METHODOLOGY

Research Design

The study used the descriptive design to describe the profile of the respondents, attitude of the respondents and Mathematics performance of the respondents.

Participants

The respondents of the study were the second-year students of College of Teacher Education, College of Business Entrepreneurship and Accountancy, College of Allied Health Sciences and College of Hospitality Management, who were officially enrolled for the first semester, School Year 2019-2020. Stratified Random Sampling procedure for equal proportional allocation of respondents was employed. The total second year population is 1,596 but only 75% of the total population was taken as the respondents. After determining the needed number of respondents per college. The researcher used the fishbowl technique in identifying the actual number of respondents.

Data Collection tools

Survey questionnaire was used to gather the needed data and the mathematics performance of the respondents was based on the respondents' grades in Mathematics in the Modern World which were taken from the University Registrar's Office.

Data Analysis

Frequency counts, mean and percentage were used to treat the profile variables of the respondents. And the weighted mean was used to describe the mathematics performance of the respondents. On the other hand, to identify the difference on the Mathematics performance of the respondents when grouped according to age, parents' highest educational attainment and monthly income, ANOVA was used. And T-test is also used for independent sample means of sex and Senior High School track. Furthermore, Multiple Regression was used to determine the best predictive factor of the Mathematics performance of the respondents.

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III. RESULTS AND DISCUSSION

A. Respondents' Profile

Table 2 shows the personal profile of the 1,196 respondents according to age, sex, Senior High School track, highest educational attainment of parents and monthly income.

In terms of age, it is revealed in the table that 1085 respondents or 90.7% falls on the age bracket of 19-21 while 0.01% falls on the age bracket of 28-40 years old. This infers that majority of the respondents are early adults.

Considering their personal profile as to sex, the table shows that 899 respondents or 75.2% are females; while, 297 or 24.8% are males. Hence the respondents are female dominated.

As regards the Senior High School track, 1028 or 85.95% are Academic track (GAS) graduates; while, 168 respondents or 14.04 percent are Technical-Vocational-Livelihood track graduates. So far, there were no Sports and Arts Design Tracks graduates enrolled at CSU Andrews. This can be attributed to the kind of courses offered at the said campus where the said tracks are related.

For the monthly income of the respondents' families, it is shown in the table that 409 or 34.2% falls on the income bracket of 2,100-5,000; while 348 or 29.1% falls on the income bracket of 10,000 and above; conversely, 284 or 23.7% falls on the income bracket of 5,100-9,999 and the rest of 155 or 13.0% have below 2,000 monthly income. This means that majority of the respondents belong to families who are not earning that much. Their monthly income is just enough to finance family basic needs.

With regard to the highest educational attainment (HEA) of their father, it is revealed that 284 or 23.7% are high school graduates; while, 277 or 23.2% are college graduates. Conversely, 194 or 16.2% are college undergraduates. On the other hand, 161 or 13.5 are elementary undergraduates; 124 or 10.4% are high school undergraduates; 122 or 10.2% are elementary graduates; 24 or 2.0% are master's degree holders and 10 or 0.8 % are doctorate degree holders.

On the other hand, with regards to highest educational attainment of the respondent' mother, 332 or 27.8% are college graduates; 271 or 22.7 percent are high school graduates; 193 or 16.1% are college undergraduates; 131 or 11.0% are elementary graduates; 123 or 10.3% are High School Undergraduates; while 96 or 8.0 % are elementary undergraduates; on the other hand, 39 or 3.3% are master's degree holders and the rest of 0.9% or 39 are doctorate degree holders. This finding shows that majority of the mothers of the respondents have undergone to higher level of education.

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Table 1. Frequency and percentage distribution of the profile of the respondents

Variables		**Frequency (n= 1196)**	**Percentage**
Age	16- 18 years old	95	7.9
	19- 21 years old	1085	90.7
	22- 24 years old	12	1.0
	25- 27 years old	3	0.3
	28- 30 years old	1	0.1
Sex	Male	297	24.8
	Female	899	75.2
Senior High School Track	Academic Track	1028	85.95
	TVL	168	14.05
	Sports	0	0
	Arts and Design	0	0
Monthly income of parents	Below 2,000	155	13.0
	2,100-5,000	409	34.2
	5,100- 9,999	284	23.7
	10,000 and above	348	29.1

Highest Educational Attainment	**Mother**		**Father**	
	Frequency (n=1196)	**Percentage**	**Frequency (n=1196)**	**Percentage**
Elem Undergrad	96	8.0	161	13.5
Elem Grad	131	11.0	122	10.2
HS Undergrad	123	10.3	124	10.4
HS Grad	271	22.7	284	23.7
College Undergrad	193	16.1	194	16.2
College Grad	332	27.8	277	23.2
Master's Degree	39	3.3	24	2.0
Doctorate Degree	11	0.9	10	0.8

Mathematics Performance of the Respondents

Table 3 shows that 560 or 46.82% of the respondents were at the grade range of 87-92 with a descriptive value of “Good”. While, 421 or 35.21% were at the grade range of 81- 86 with “Satisfactory” as the descriptive value. Whereas, 147 or 12.29% were at the grade range of 93- 98 with a descriptive value of “Very Good”. There were also 64 respondents or 5.35% of the population whose grades fall on the grade range of 75-80 which means passing, 4 respondents or 0.33% have grades that fall on the grade range of 99-100% which has a descriptive value of “Excellent”.

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The computed mean value is 87.26 with descriptive value of "good". This finding intends to convey that the respondents are not weak in Math. They are not that highly intellectual, but they are not poor in numeracy and abstract comprehension.

This finding negates the findings of Subia, et. al (2018) in their study "Attitude and Performance in Mathematics I of Bachelor of Elementary Education Students: A Correlational Analysis". They found out that their respondents whose overall performance in Mathematics 1 is below average 82.10 which showed that their respondents are weak in Math 1. His findings also revealed that entering freshmen students were weak in almost all areas of Mathematics and were not ready for College Mathematics. Furthermore, they also found out that first year college's level of proficiency in Mathematics is poor, and that majority of the students performed poor in their achievement in Mathematics.

Table 2. Mathematics Performance of the Respondents

Intervals	Frequency (n= 1196)	Percentage
99- 100	4	0.33
93-98	147	12.29
87- 92	560	46.82
81-86	421	35.21
75-80	64	5.35
Mean= 87.26;	s. d. = 4.35	

Comparison on the Mathematics Performance of the Respondents when grouped according to Age

Table 3.1 shows the comparison on the Mathematics performance of the respondents when grouped according to age. As shown in the table, there is no significant difference on the Mathematics performance of the respondents when grouped according to age. This is proven by the probability value of 0.707 which is greater than 0.05 level of significance. It implies that regardless of age whether young or old, the respondents have the same or almost the same mathematical performance in the said subject.

Table 3.1 Comparison on the Mathematics performance of the respondents when grouped according to age.

Variable	Categories	Frequency (n= 1196)	Computed Value	P-Value	Decision
Age	16- 18 years old	95	0.817*	0.707	Accept H_0
	19- 21 years old	1085			
	22- 24 years old	12			

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	25- 30 years old	4			

*not significant at α = 0.05

Comparison on the Mathematics Performance of the Respondents when grouped according to Sex

Table 3.2 shows the comparison on the Mathematics performance of the respondents in Mathematics when grouped according to sex. The table revealed that the P-value which is 0.185 is greater than 0.05 level of significance. Thus, the null hypothesis is accepted. This means that there is no significant difference on the performance of the respondents when grouped according to sex. It means that regardless of sex whether male or female, the respondents can do and can solve the mathematical drills.

This finding does not conform to the findings of Asante (2010) where he explored sex differences in mathematics performance of students in the final year of high school in Ghana. He found out that there was a significant difference between mathematics performance between boys and girls. He mentioned that girls and women lack mathematical ability.

Table 3.2. Comparison on the Mathematics performance of the respondents when grouped according to sex.

Variable	Categories	Frequency (n= 1196)	Computed Value	P- Value	Decision
Sex	Male	297	1.326*	0.185	Accept Ho
	Female	899			

*not significant at α = 0.05

Comparison on the Mathematics Performance of the Respondents when grouped according to Senior High School Track

The comparison on the Mathematics performance of the respondents when grouped according to Senior High School track is seen in table 3.3. It is revealed that the P-value which is 0.0003 is lesser than 0.05 level of significance. Hence, the null hypothesis is rejected. This means that there is no significant difference on the performance of the respondents when grouped according to high school track.

Likewise, it can be gleaned in the table the different mean values of the two tracks. The Academic track has a weighted mean of 87.53; while, the TVL has a weighted mean of 84.32. This implies that those Academic track graduates have a satisfactory mathematics performance than those TVL graduates. This can be attributed to the quantity

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and quality of Mathematics subjects the Academic track graduates have compared to the TVL graduates' Math subjects in Senior High school.

This finding conforms to the findings of Mamolo's study (2019). He revealed the results for difference of the competency of senior high school students in General Mathematics between Academic and Technical Vocational Livelihood (TVL) Track. The result indicates that there was a significant difference in the competency of the students in General Mathematics between the two tracks. This means that the academic track students got higher scores and mean in the administered 80-item competency test compared to the TVL track students.

Table 3.3. Comparison on the Mathematics performance of the respondents when grouped according to Senior High School track.

Variable	Categories	Mean	Computed Value	P-Value	Decision
Senior High School track	Academic Track	87.53	1.9731*	0.0003	Reject Ho
	TVL	84.32			

*Significant at $\alpha = 0.05$

Comparison on the Mathematics Performance of the Respondents when grouped according to Fathers' Highest Educational Attainment

Table 3.4 shows the comparison on the Mathematics performance of the respondents when grouped according to fathers' highest educational attainment.

It can be shown in the table that the P-value, 0.153 is greater than 0.05 level of significance. Thus, the null hypothesis is accepted. This means that there is no significant difference on the performance of the respondents when grouped according to fathers' highest educational attainment.

This can be ascribed to the respondent's independence. Since, they are already college students, they do not depend fully to their parents' guidance anymore. Solving Math problems to them is just a part of their collegiate challenges

Table 3.4. Comparison on the Mathematics performance of the respondents when grouped according to fathers' highest educational attainment.

Variable	Categories	Frequency (n= 1196)	Computed Value	P-Value	Decision
Fathers'	Elem Undergrad	161			

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highest educational attainment	Elem Grad	122	1.311*	0.153	Accept Ho
	HS Undregrad	124			
	HS Grad	284			
	College Undergrad	194			
	College Grad	277			
	Master's Degree	24			
	Doctorate Degree	10			

*not significant at α = 0.05

Mathematics Performance of the respondents when grouped according to Mothers' Highest Educational Attainment

The comparison on the Mathematics performance of the respondents in Mathematics when grouped according to mothers' highest educational attainment is seen in Table 3.5.

It is displayed in the table that the P-value which is 0.363 is greater than 0.05 level of significance. Hence, the null hypothesis is accepted. This means that there is no significant difference on the Mathematics performance of the respondents when grouped according to mothers' highest educational attainment. This can be attributed to the level of independence the college students have.

Table 3. 5. Comparison on the academic performance of the respondents in mathematics when grouped according to mothers' highest educational attainment.

Variable	Categories	Frequency (n= 1196)	Computed Value	P- Value	Decision
Mothers' highest educational attainment	Elem Undergrad	96	1.079*	0.363	Accept Ho
	Elem Grad	131			
	HS Undregrad	123			
	HS Grad	271			
	College Undergrad	193			
	College Grad	332			
	Master's Degree	39			
	Doctorate degree	11			

*not significant at α = 0.05

Comparison on the Mathematics Performance of the Respondents when grouped according to Monthly Income of Parents

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The Mathematics performance of the respondents when grouped according to monthly income of their parents is likewise compared in Table 3.6.

It is exhibited in the said table that the P-value which is 0.245 is greater than 0.05 level of significance. Therefore, the null hypothesis is accepted. This means that there is no significant difference on the performance of the respondents when grouped according to monthly income of the respondents' parents.

Table 3. 6. Comparison on the Mathematics performance of the respondents when grouped according to monthly income of parents.

Variable	Categories	Frequency (n= 1196)	Computed Value	P- Value	Decision
Monthly Income of Parents	Below 2,000	155	1.192*	0.245	Accept Ho
	2,100-5,000	409			
	5,100- 9,999	284			
	10,000 and above	348			

*not significant at $\alpha = 0.05$

Attitude of the respondents towards Mathematics

The attitude of the respondents towards Mathematics is seen in table 5. And the positive statements on items 1, 2, 3, 6, 11, 14, 19 and 24 have weighted means which would fall on the attitude bracket of 3.4 - 4.19 with a descriptive value of "agree".

On the other hand, the positive statements in items 13, 17, and 27 have weighted means that fall within the bracket of 2.6-3.39 which have a descriptive value of "**uncertain".** This data mean that the respondents are unsure if Mathematics is their favorite subject and if they are satisfied with just a passing grade or not.

While, the 4^{th}, 5^{th}, 7^{th}, 8^{th}, 9^{th}, 19^{th}, 22^{nd}, 28^{th} and 30^{th} negative statements have means that fall within the bracket of 2.6-3.39 which have a descriptive value of "**uncertain".** This means that the respondents are not comfortable in Math class and they scare solving math problems. Thus, resulting to Math anxiety.

On the other hand, the negative statements found in items 12, 26 and 29 have weighted means that fall within the bracket of 2.6-3.39 which have a descriptive value of "**uncertain".** These negative statements are "I would willingly exchange my Mathematics subject for an easier subject in school.", "I consider Mathematics as my most difficult

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subject." These can be inferred that the respondents are not sure if they find Math easy or hard subject. This conforms to the study of Subia, et al (2017) that the respondents in their study have math anxieties in terms of solving problems. He stated that highly anxious math students will avoid situations in which they have to perform mathematical calculations.

Notwithstanding of these responses, the overall weighted mean is 3.22 which means the respondents have a positive disposition towards Mathematics. It implies that regardless of the difficulty of the Mathematics drills, the respondents have still positive attitude and perception toward Math.

The findings conform to that of Waheed (2011) in his study "Secondary Students' Attitude towards Mathematics in a Selected School of Maldives" where he concluded that, since the students' positive attitude towards mathematics is at medium level, it shows that there is still possible room for improvement. However, it is interesting to know that despite the lower performance of Maldivian students in mathematics, the attitude of the respondents of this study is fairly positive.

Table 4. Attitude of the respondents towards Mathematics.

Statements	Mean	Descriptive Value
1.In school I thoroughly enjoy Mathematics classes.	3.45	**agree**
2.When I work with Mathematics problems, I find that my thinking and reasoning are sharpened.	3.75	**agree**
3. I am interested to acquire further knowledge in Mathematics.	3.85	**agree**
4. I feel uncomfortable with numbers and symbols.	3.13	**uncertain**
5.I am too nervous to think in my Mathematics class.	3.02	**uncertain**
6.I think I have more chances of becoming successful if I am good in Mathematics.	3.65	**agree**
7.I am unable to think clearly when working with Mathematics.	3.21	**certain**
8.Mathematics makes me feel as though I am lost in a jungle of numbers and I cannot find my way out	3.02	**uncertain**
9.Mathematics problems scare me.	3.06	**uncertain**
10. I enjoy going beyond the assigned work in Mathematics and I try solving more than what is expected of me.	3.22	**uncertain**
11. Mathematics makes me more inquisitive about things which are not clear to me.	3.44	**agree**
12. I would willingly exchange my Mathematics subject for an easier subject in school.	2.97	**uncertain**
13. My favorite subject is Mathematics.	2.75	**uncertain**
14. Of all my teachers, it is my Mathematics teacher that I like the least.	3.51	**agree**
15. My parents love and enjoy Mathematics.	3.14	**uncertain**

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16. If I had my way, I would avoid taking Mathematics subjects in College.	3.26	**uncertain**
17. I feel happier in my Mathematics class than in any other class.	2.85	**uncertain**
18. I think my mind works well when doing Mathematics problems.	3.21	**uncertain**
19. I would be happy if Mathematics were to be taken out of the curriculum.	3.54	**agree**
20. I feel I have a good foundation in Mathematics.	3.17	**uncertain**
21.The people I enjoy going with are those who are good in Mathematics.	3.12	**uncertain**
22. I easily give up when I cannot solve a Mathematics problem.	3.20	**uncertain**
23. Mathematics is a subject which I have always enjoyed studying.	3.05	**uncertain**
24. I find Mathematics useful for problems of everyday life.	3.79	**agree**
25. Mathematics gives me such satisfaction.	3.30	**uncertain**
26. I consider Mathematics as my most difficult subject.	2.74	**uncertain**
27. In Mathematics, I am not satisfied with just a passing grade; I want really something high.	2.83	**uncertain**
28. I think I will stand a better chance to succeed in my college course if it does not require Mathematics.	3.28	**uncertain**
29. I always need someone to help me with Mathematics because it confuses me.	2.56	**uncertain**
30. My poorest mark is usually in Mathematics.	3.39	**uncertain**
Over-all weighted mean	3.22	**Positive**

Predictors of the Mathematics Performance of the Respondents

Regression analysis in table 5 reveals that among the variables, only the attitude of students towards Mathematics can predict Mathematics performance of the students. This variable produced an unstandardized B coefficient of 2.789 with associated probability less than the significance level set at 0.05. This forms the regression equation which is Y= 79.402 + 2.789X. The other variable, Senior High School track has associated probability less than the significance level set at 0.05 but with unstandardized B coefficient equal to -1.506. This forms the regression equation which is Y= 79.402 – 1.506X. Hence, not a good predictor of Math performance because the negative coefficient of this variable brings a decrease in the Math performance.

The standardized Beta coefficient indicates that for every unit increase in the Mathematics attitude could generate 0.311 increase in the Mathematics performance of the students. The multiple correlation coefficient (r) of 0.354 indicates a negligible level of prediction. Moreover, the value of coefficient of determination (r^2) equal to 0.125 means that the above- mentioned predictor variables explain 12.5% of the variability of

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Mathematics performance. Specifically, it can be noted that Math attitude is significantly correlated to Math performance with the correlation coefficient of 0.306. The r- squared correlation coefficient (0.0986) indicates that the variability in the Math performance of the students can be explained or is contributed by Math attitude for about 9.86%.

Considerably, positive attitude drives and motivates the respondents to excel in Math. Expectedly, when one has displayed favorable attitude, he or she has better Mathematics performance.

This finding conforms to the study of Mato and De La Torre (2011) in a study with secondary school students. Their findings showed that those with better academic performance have more positive attitudes regarding math than those with poorer academic performance. These results were confirmed in wider research, concerning math study attitudes among the secondary school students of nine countries, developed by Sanchez et al.

Correspondingly, it relates to the findings of Lipnevich et al. (2011). They highlighted the importance of attitudes in predicting academic achievement. They found out that mathematics attitudes explained a variance of 25% to 32% in mathematics achievement, with much of the explained variance independent of ability in math.

Table 5. Regression analysis of the variables associated to the Mathematics performance of the students.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Probability Value	Correlations	
	B	Std. Error	Beta			Coefficient	Squared coefficient
1 (Constant)	79.402	1.284		61.825	.000		
Age	-.484	.371	-.036	-1.304	.192	-.054	0.0014
Sex	.517	.275	.051	1.880	.060	.040	0.0029
SHS	-1.506	.342	-.122	-4.405	.000	-.148	0.0161
FHEA	.088	.086	.036	1.014	.311	.078	0.0008
MHEA	.093	.092	.037	1.014	.311	.058	0.0008
IM	.154	.133	.036	1.158	.247	.073	0.0012
Math Attitude	2.789	.245	.311	11.384	.000	.306	0.0986
r= 0.354			r^2 = 0.125				

IV. CONCLUSIONS AND RECOMMENDATIONS

In the light of aforementioned findings, the study concluded that the respondents' profile are not contributory factors for their mathematics performance. This implies that the respondents are

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independent learners. This is grounded in Educational thrust as embodied in CMO 46, series 2012 that learning should be student-centered.

In addition, the Academic track graduates have better Mathematics performance than those who graduated from TVL track. This can be attributed to the Math foundation and depth of Math preparation of the respondents in Academic track compared to TVL track.

Moreover, the attitude of the respondents best predicts Mathematics performance. This implies that favorable attitudes of the respondents contribute to have a better performance in Mathematics in the Modern World. This implies that students with positive attitude in Mathematics performed better than those students with negative attitude. Similarly, when a respondent has a negative attitude, his performance is not good in Math.

It is recommended that the university admission director and deans must consider Senior High School track in determining the course and major of the incoming College freshmen students. Professors are also tasked to motivate the students to love and appreciate Math and must do their counterparts in building positive perceptions and attitudes toward Math.

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