

# The Influence of Social-Emotional Intelligence on Attitude Towards Mathematics Instruction

Rey Avila Mangarin<sup>1</sup>, Glenn Ryan L. Montefolka<sup>2</sup>

<sup>1</sup>Faculty, The University of Mindanao, Philippines

<sup>2</sup>Faculty, Carmen National High School, Philippines

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## ABSTRACT

The purpose of this quantitative non-experimental descriptive-correlational study was to determine the significant influence of social-emotional intelligence to attitude towards Mathematics instruction both in individual and aggregate capacity. Researcher-made questionnaires on these two variables which were validated by the experts and were subjected to pilot testing for reliability test, and after, were conducted among Grade 12 students in a certain public school in Davao del Norte considering stratified random sample of 300 students. Data analysis tools used were weighted mean, pearson-r, and regression analysis to test the hypotheses. The results showed that three indicators of social-emotional intelligence, to enumerate, self-management and motivation, social awareness and prosocial behavior, and decision-making, are all in low level while self-awareness in moderate level. Moreover, all the indicators of attitude towards Mathematics instruction which are confidence in Mathematics, importance of Mathematics, and engagement in Mathematics are all in low level. Further, it was found out that there was no significant relationship between social-emotional intelligence and attitude towards Mathematics instruction. With regression analysis, there was no domain in social-emotional intelligence that significantly influence attitude towards Mathematics instruction. Thus, it is recommended that social-emotional intelligence and attitude towards Mathematics instruction must be improved.

**Keywords:** Social-emotional Intelligence, Attitude Towards Mathematics Instruction, Department of Education

## RATIONALE

Attitude towards mathematics plays a crucial role in the teaching and learning process of mathematics. It effects student's achievement in learning mathematics. The teaching method, the support structure of the school, the family, and students' attitude towards school affect the attitudes towards mathematics and thus student's success in mathematics depends upon attitude towards mathematics (Farooq & Shah, 2018). The indispensable role of attitude towards Mathematics instruction has garnered the attention of educational researchers and Mathematics educators. The attitudes of the students towards mathematics teaching-learning have been associated with the negative attitude and anxiety, which have been found to plague students due to various socioeconomic backgrounds. Moreover, it has been found that the public image of this subject labeling it to be difficult, abstract, cold, theoretical, and ultra rational subject contributes towards the negative attitudes of the students (Mensah, Okyere & Kuranchie, 2013).

In the study of Colomeischia (2014), it was emphasized that the success of learning depends on both internal and external factors. The results bring out a picture of the attitude towards learning mathematics and also the way some internal factors describing the emotional life influence this attitude. The results could indicate some predictors for attitude towards learning mathematics and also could be useful to find out new way motivating students in their learning process.

Analysis on the study of Nor, Ismael, and Yosof (2016) shows that emotions and social interactions significantly predict students Math attitude and eventually competence but with low correlational value. This particular research shows that social emotional intelligence is a good predictor of math attitude and competence which contradicts other reports.

Moreover, Salleh and Othman (2014) discussed the findings of a study which examine the effects of integrating emotional intelligence on students' attitudes toward Mathematics. Research results show that the experimental group received teaching instruction which integrates emotional intelligence has statistically significant effects on students' attitudes toward Mathematics. Generally, research results showed that the integration of emotional intelligence in teaching and learning process has significantly increased students' attitudes toward Mathematics.

The study of Espinosa (2016) suggests that trait emotional intelligence (EI) is related to improved attitudes about learning. Within the context of learning mathematics, researchers argue the inclusion of EI in the curriculum can improve student attitudes about mathematics, and consequently performance. However, the mechanism underlying the relationship between trait EI and attitudes about mathematics has not been empirically assessed. The results show self-confidence mediated such relation. Using moderated mediation SEM, the study also generalizes the results over summer versus regular semester students. The results suggest inclusion of trait EI within any mathematics curriculum will result in higher self-confidence among students, and therefore improved attitudes about mathematics.

Moreover, McLeod (1989) explained the role that emotion plays in mathematical problem solving. He indicated that the broad impact of affective factors in mathematics learning and relates beliefs, attitudes, and emotions to attitude towards learning is very important. Further discussion of several broad themes referring to emotional dimension including the central role of affect in problem solving, the need to integrate research on cognition and affect, and the importance of the social context in the study of affective factors in mathematics learning was also discussed.

Lastly, Musonda (2017) examined the relationship between algebraic attitude and competences and emotional intelligence students. This poor academic performance may be due to many factors. However, this study identified and focused on emotional intelligence as one such factor. Results showed that there is a significant positive correlation between emotional intelligence and algebraic attitude and competences.

Although there were studies utilizing social and emotional intelligence in their different dimensions as predictors of the attitude towards Mathematics instruction before and even in the present, this study is a conformation on the relationship between these variables. Most of the researches determining attitude towards Mathematics instruction as affected by other variables utilized students in general and other professions but of few only on the context of students. Thus, this study aims to explore the motivation for achievement of Grade 12 students in a certain public secondary school in Davao del Norte and the extent of the significant influence of achievement motivation and social and emotional intelligence to the attitude towards Mathematics instruction which would be of great help in understanding their current motivation for achievement status in educational arena, specifically in managing their attitude towards Mathematics instruction.

## **RESEARCH OBJECTIVES**

The main purpose of this study was to determine which domain of social-emotional intelligence significantly influence attitude towards Mathematics instruction of Grade 12 students. Specifically, it sought answers to the following objectives:

1. To describe the level of social-emotional intelligence in terms of:
  - self-awareness,
  - self-management and motivation,
  - social-awareness and prosocial behavior, and
  - decision making.
2. To describe the level of attitude towards Learning Mathematics Instruction in terms of:
  - confidence in Mathematics,
  - importance of mathematics, and
  - engagement in Mathematics.
3. To determine the significant relationship between social-emotional intelligence and attitude towards learning Mathematics Instruction.
4. To determine the significant influence of social-emotional intelligence to attitude towards Mathematics instruction.
5. To determine which domain of social-emotional intelligence significantly influence attitude towards Mathematics Instruction of students.

## Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. There was no significant relationship between social-emotional intelligence and attitude towards Mathematics instruction.
2. There was no domain of motivation for achievement and social-emotional intelligence that significantly influence attitude towards Mathematics instruction of students.

## THEORETICAL FRAMEWORK

This study is primarily anchored on the proposition that Mathematics students had on several accounts that had been judged as the main determinant in the success or failure of students in the subject. Because of this, mathematics students are expected to have the required attitudes necessary for teaching as well as the ability to disseminate such knowledge appropriately that will result in learning (Brown, 2020).

Another basis is the Mayer and Salovey's (1997) Four-Branch Model of Emotional Intelligence and Bar-On's (2002) Model of Emotional Intelligence as cited by Arefnasab, Zare, and Babamahmoodi (2012) which states that emotional intelligence is comprised of two areas: experiential (ability to perceive, respond, and manipulate emotional information without necessarily understanding it) and strategic (ability to understand and manage emotions without necessarily perceiving feelings well or fully experiencing them). Each area is further divided into two branches that range from basic psychological processes to more complex processes integrating emotion and cognition. The latter hypothesizes that those individuals with higher than average E.Q.'s are in general more successful in meeting environmental demands and pressures and a deficiency in emotional intelligence can mean a lack of success and the existence of emotional problems. A problem in coping with one's environment is thought to be especially common among those individuals lacking in the subscales of reality testing, problem solving, stress tolerance, and impulse control. It is also considered that emotional intelligence and cognitive intelligence to contribute equally to a person's general intelligence, which then offers an indication of one's potential to succeed in life.

Self-theories deal with how an individual perceives some of her attributes such as intelligence. People endorse basically one of two theories: growth mindset or fixed mindset. In the case of the former, people believe that intelligence can be developed (incremental theory), whereas in regard to the latter, people believe that intelligence is a fixed trait (entity theory). These theories play an important role in motivation and achievement, as shown by Carol Dweck's life-long research (Koebel, Schmitt, & Spaeter, 2016).

Bandura's theory is a social theory of learning, and by accepting the interference of cognitive processes such as the perception of others, the imagination, the self-control, and more, his theory became socio-cognitive. Moreover, in time his theory became ever more far-reaching. Concepts such as self-regulation, self-reflection, beliefs on self-sufficiency, and even moral values made Bandura's theory on learning become full of humanism, too. This theory is applicable since this has something to do with self-regulation, self-reflection, beliefs and values as can be reflected in the emotional and social intelligence and Math anxiety (Soponaru, Dîrtu, Ciuhodaru, & Iorga, 2016).

Erikson's psychosocial development maintained that personality develops in a predetermined order through eight stages of psychosocial development, from infancy to adulthood. During each stage, the person experiences a psychosocial crisis which could have a positive or negative outcome for personality development. This is applicable in this research because the emotional and social intelligence and Math anxiety are parts of the development (McLeod, 2018).

This is also based on the proposition of Prati, Ceasar, Ferris, Ammeter, & Buckley (2003) that emotional intelligence reflects the ability to read and understand others in social contexts, to detect the nuances of emotional reactions, and to utilize such knowledge to influence othersthrough emotional regulation and control.

The above mentioned theories, model, proposition and concepts are bases that support the claim of this study.

## Conceptual Framework

Presented in Figure 1 is the conceptual framework of the study. The independent variable of this study is the social-emotional intelligence with indicators self-awareness, self-management, social awareness, relationship management, and responsible decision-making. Social emotional intelligence refers to the ability to be aware of own and others' feelings and use that information to lead to others. Self-awareness refers to conscious knowledge of one's own character, feelings, motives, and desires. Social awareness is the ability to comprehend and appropriately react to both broad problems of society and interpersonal struggles. Relationship management refers to the supervision and maintenance of relationships between a company and its external partners, especially its clients. Responsible decision-making refers to the action or process of making decisions, especially important ones in a responsible manner (Zych, Ortega-Ruiz, Munoz-Morales, & Llorent, 2018).

While the dependent variable is the attitude for Mathematics instruction. Confidence in Mathematics refers to attitude that shows high self-esteem in doing Mathematics subject. Importance of Mathematics is a dimension that shows the significant roles of the subject towards life. Engagement in Mathematics refers to the extent of how students engaged themselves in Mathematics activities (Sanchal & Sarma, 2017).

Figure 1 shows the flow of the research from social-emotional intelligence that is significantly influencing the attitude towards mathematics instruction and the emotional and social intelligence which is also influencing the attitude towards mathematics instruction of the Grade 12 students.

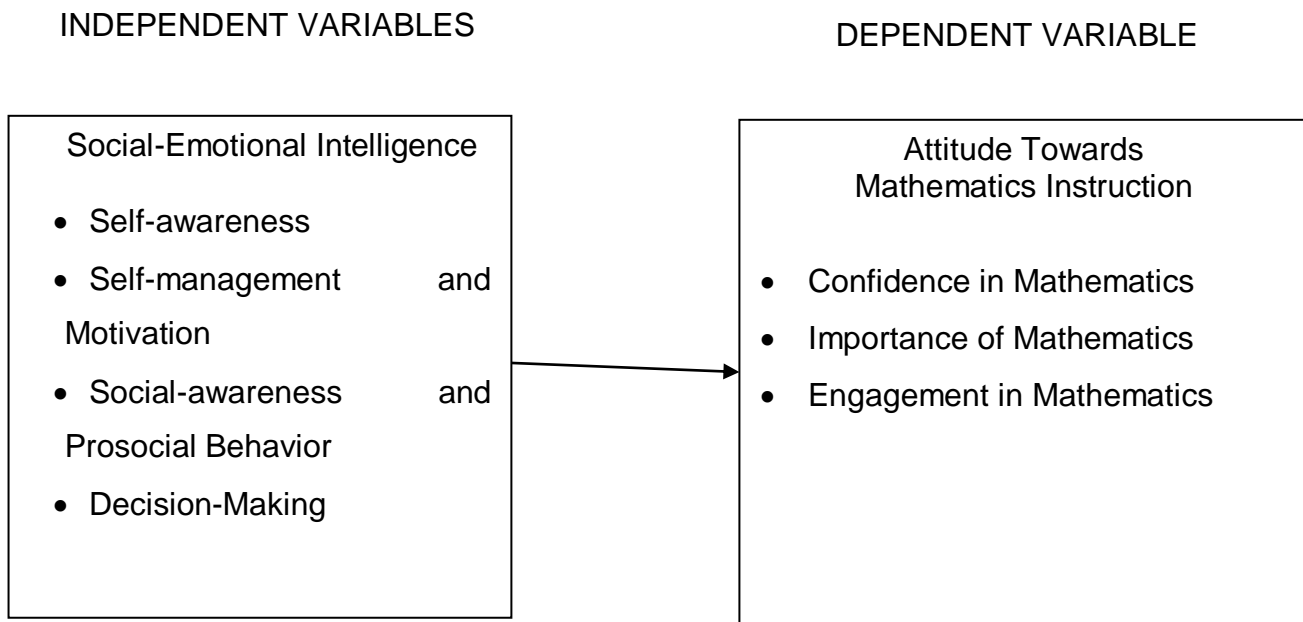


Figure 1. The Schematic Diagram Showing the Variables of the Study

## RESEARCH DESIGN

The research design utilized is quantitative non-experimental descriptive-correlational research as the design of this study. According to Curtis, Comiskey, and Dempsey (2016), the role of correlation research which concerned with establishing relationships between two or more variables in the same population or between the same variables in two populations is very important part of a research study. Understanding the associations and relationships that exist among human phenomena is a remaining incentive for scientific investigation in all of the social science disciplines, and that motivation surpasses even the most differentiated model distinctions between various research methods.

In this research endeavor, the researcher investigated the significant influence of motivation for achievement and attitude towards Mathematics instruction of Grade 12 students in a certain public secondary school in Carmen, Davao del Norte.

## RESEARCH LOCALE

The study was conducted in one of the secondary schools in Davao del Norte, Region XI, Philippines. Davao del Norte is one of the divisions of DepEd Region XI clipped as Dav Nor geographically situated in Northern part of Davao. This division is divided into four clusters namely Cluster 1, 2, 3, and 4 in reference to local municipalities. Cluster is the term given to the group of secondary schools within municipalities of Davao del Norte province.

Specifically, this was conducted in one public secondary school in the municipality of Carmen, Davao del Norte. The municipality has a land area of 166.00 square kilometers or 64.09 square miles which constitutes 4.84% of Davao del Norte’s total area. Its population as determined by the 2015 Census was 74,679. This represented 7.35% of the total population of Davao del Norte province, or 1.53% of the overall population of the Davao Region. Based on these figures, the population density is computed at 450 inhabitants per square kilometer or 1,165 inhabitants per square mile (Phil Atlas, n.d.).



Figure 2. The Map of the Philippines hitting Carmen, Davao del Norte.

### Population and Sample

The respondents of study were the Grade 12 students of a certain public secondary school in Carmen, Davao del Norte for the S.Y. 2020-2021. There were 531 Grade 12 students in the target school but only 300 students were considered as sample since 234 was the sample size computed out from 531. The determination of sample size is with the use of Slovin's Formula. The selection of the respondents is due to the fact that the researcher is a resident student of the target school and that the knowledge to be generated from the research can be utilized in analysis of needs of the students especially in the Mathematics teaching-learning process.

Respondents of the study were Grade 12 students who are officially enrolled this school year 2021 and a regular taker of Grade 12 Mathematics. Specifically, only those who are in regular class were considered, and other special programs though still Grade 12 are not included in the study. Those who withdrew in the middle of the conduct of survey were not included but getting an alternative of the same gender within the same section was taken as replacement with voluntariness.

According to Blay (2007), the use of Slovin's Formula will guarantee good results while substantial number of samples is still achieved when the population is too big to handle. Stratified random sampling technique was used in choosing the respondents of the study since the population is too big to handle. The table below shows the strata of the population according to sections and each section was represented by its percentage size to achieve the substantial sample for data gathering. According Blay (2007), proportional allocation is good to be used in considering a stratified random sampling technique.

**Table 1. Distribution of Respondents.**

Section	N	N
Section A	54	31
Section B	52	30
Section C	55	31
Section D	53	30
Section E	54	31
Section F	51	29
Section G	52	30
Section H	52	30
Section I	54	31
Section J	54	27
Total	531	300

### Research Instrument

This study used two sets of questionnaires to assess the social emotional intelligence and attitude towards Mathematics instruction. Social emotional intelligence has five indicators which are self-awareness, self-management, social awareness, relationship management, and responsible decision-making. While the dependent variable has only three indicators which are confidence in mathematics, importance of mathematics and engagement in mathematics.

In describing the emotional and social intelligence of students, the following five-point Likert scale was used:

Range of Means	Descriptive Level	Interpretation
4.20 – 5.00	Very High	This means that the students are manifesting an excellent emotional and social intelligence.
3.40 – 4.19	High	This means that the students are manifesting a very good emotional and social intelligence.
2.60 – 3.39	Moderate	This means that the students are manifesting a good emotional and social intelligence.
1.80 – 2.59	Low	This means that the students are manifesting a poor emotional and social intelligence.
1.0 -1.79	Very Low	This means that the students are manifesting a very poor emotional and social intelligence.

While in describing the attitude towards Mathematics instruction, the following five-point Likert scale was used:

Range of Means	Descriptive Level	Interpretation
4.20 – 5.00	Very High	This means that the attitude towards Mathematics instruction of students is excellent.
3.40 – 4.19	High	This means that the attitude towards Mathematics instruction of students is very good.
2.60 – 3.39	Moderate	This means that the attitude towards Mathematics instruction of students is good.

1.80 – 2.59	Low	This means that the attitude towards Mathematics instruction of students is poor.
1.0 -1.79	Very Low	This means that the attitude towards Mathematics instruction of students is very poor.

The survey questionnaires have undergone validation process to ensure the content validity. The first draft of the research instrument was submitted to the research adviser for comments, suggestions and recommendations to improve its presentation with the corrections to be included and integrated. The final copies were submitted to panel of experts for refinement. The final revision was made by incorporating the corrections, comments and suggestions given by the expert validators before the gathering of data. The ratings of the validators were computed and consolidated to know the status of the questionnaires. Further, reliability index was observed through pilot testing on the same target respondents in other place. The data underwent Cronbach Alpha test where items below the acceptable index were revised so that the questionnaires address the comprehension of the target respondents according to their level before the final conduct.

### Data Gathering Procedure

A letter asking for permission on the conduct of the study was sent to the Schools Division Superintendent through the school head of the target school. A letter and an informed consent to the parents of the target respondents was then sent. After the approval of Schools Division Superintendent and school principal, the researcher then asked helped from the adviser where assent and consent forms were distributed attached in the module sent by the adviser. After the assent and consent forms were received, the survey questionnaires were attached in the module as part of the activity of the students with the help of the adviser. The researcher then retrieved the questionnaires after the respondents have answered through the adviser. The researcher then checked, tabulated, and consolidated the results and then gave it to Statistician for the analysis.

### Statistical Treatment of Data

The following are the statistical tools used to treat the data gathered:

**Weighted Mean.** This was used to determine the level of motivation for achievement, social emotional intelligence, and attitude towards Mathematics instruction of students.

**Pearson-r.** This was used to determine the significant relationship between motivation for achievement, emotional and social intelligence, and attitude towards Mathematics instruction.

**Regression Analysis.** This was used to determine the significant influence of motivation for achievement and social emotional intelligence towards attitude towards Mathematics instruction and the domain in the achievement for motivation and emotional and social intelligence that significantly influence attitude for Mathematics instruction of students.

## RESULTS AND DISCUSSION

The following are the results based on statistical computation:

### The Level of Social-Emotional Intelligence

The table below shows the moderate level of social-emotional intelligence ( $x=2.58$ ;  $S.D.=0.41$ ) of Grade 12 students in terms of the indicators shown. All the indicators were also low, to wit: self-management and



motivation ( $x=2.48$ ;  $S.D.=0.70$ ), social awareness and prosocial behavior ( $x=2.50$ ;  $S.D.=0.57$ ), and decision-making ( $x=2.55$ ;  $S.D.=0.76$ ) except for self-awareness ( $x=2.81$ ;  $S.D.=0.73$ ) which is moderate.

**Table 2. The Level of Social-Emotional Intelligence**

Indicator	Mean	S.D.	Description
Self-awareness	2.81	0.73	Moderate
Self-management and motivation	2.48	0.70	Low
Social-awareness and prosocial behavior	2.50	0.57	Low
Decision-making	2.55	0.76	Low
Over-all	2.58	0.41	Low

Students have poor social-emotional intelligence. This means that they have poor ability to be aware of own and others' feelings and use that information to lead to others. Moreover, they have poor self-awareness, self-management and motivation, social awareness and prosocial behavior, and decision-making.

In terms of self-awareness, students have poor conscious knowledge of one's own character, feelings, motives, and desires. They sometimes know how to label their emotions. They are sometimes aware of the thoughts that influence their emotions. They sometimes differentiate one emotion from another. They sometimes know how their emotions influence what they do.

Also, students have poor ability to comprehend and appropriately react to both broad problems of society and interpersonal struggles. They seldom know how to motivate themselves, seldom have their goals clear, and seldom pursue their objectives despite the difficulties.

Meanwhile, the students have also poor ability in terms of supervision and maintenance of relationships within the classroom. They seldom know what people expect from others, seldom pay attention to the needs of others, seldom know how to help others who need that, seldom have good relationships with their classmates or workmate, seldom listen in an active way, and seldom offer help to those who need them.

Also, students have poor response through action or process of making decisions, especially important ones in a responsible manner. They seldom make decisions analyzing carefully possible consequences, seldom consider advantages and disadvantages of each option before they make decisions, and sometimes do not make decisions carelessly.

Social and Emotional Intelligence concept is widely discussed and many authors are questioning the exiting relations between emotional intelligence and general intelligence understood as a general factor. Emotional intelligence is an ability that involves the perception and expression of emotion accurately, as well as the ability to adapt emotions and understand emotions while using emotional knowledge in thought processes. In order to be effective in a social situation, one needs emotional skills too, as well as the ability to manage one's own emotions yet someone with high social intelligence may not have high emotional intelligence. For instance, an individual may be able to interact effectively in a social situation by communicating well, but that does not mean that he or she is capable of handling a person crying (Chen 2013).

Moreover, Ferrándiz, Ferrando, Bermejo and Prieto (2015) discussed that social-emotional Intelligence influences one's ability to succeed in coping with environmental demands and pressures.

Additionally, social-emotional intelligence is the ability to understand and manage people. Social intelligence is a super ordinate to emotional intelligence. Social intelligence has an important function that may help in explaining individual differences in personality, motivation and cognition. Social intelligence is

versatile and consists of a number of aspects (Buzdar, 2016).

Social intelligence plays a crucial role in workplace environments, especially for individuals in leadership positions. The ability to anticipate the responses of others while acting wisely and in a predictive manner is a vital component of this type of intelligence (Ledford, 2015).

### The Level of Attitude Towards Learning Mathematics

The table below shows the low level of attitude towards learning Mathematics ( $x=2.40$ ;  $S.D.=0.28$ ) of Grade 12 students in terms of the indicators shown. All the indicators were low, to wit: confidence in Mathematics ( $x=2.40$ ;  $S.D.=0.41$ ), self-management and motivation ( $x=2.40$ ;  $S.D.=0.46$ ), social awareness and prosocial behavior ( $x=2.40$ ;  $S.D.=0.46$ ), and decision-making ( $x=2.58$ ;  $S.D.=0.62$ ).

**Table 3. The Level of Attitude Towards Learning Mathematics**

Indicator	Mean	S.D.	Description
Confidence in Mathematics	2.40	0.41	Low
Importance of Mathematics	2.40	0.46	Low
Engagement in Mathematics	2.40	0.46	Low
Attitude Towards Learning Mathematics	2.40	0.28	Low

Students have poor attitude towards learning Mathematics. This means that they have poor perception on the subject itself and the methods and strategies used in teaching Mathematics and how teachers manifest characteristics in delivering the lessons. Also, they manifest a poor confidence in Mathematics, self-management and motivation, social awareness and prosocial behavior, and decision-making.

Students possess a poor attitude that shows high self-esteem in doing Mathematics subject. They are sometimes interested in improving their skills in mathematics, sometimes find pleasure in solving mathematical problems, sometimes believe that Mathematics aids the mind's development as well as trains a person to think, sometimes say that mathematics can be included in their most feared subjects, sometimes believe their brain cannot function well when dealing with mathematics, sometimes believe that studying math causes them to feel nervousness, are sometimes uncomfortable with mathematics, sometimes believe Math class makes them feel like being in a terrible strain, sometimes thought of doing mathematical problems causes them to feel nervous, sometimes believe that Mathematics does not scare them one bit, sometimes have a great deal of fearlessness with regards to mathematics, sometimes can solve mathematical problems with ease, sometimes expect themselves to do well in any mathematical class that they would take, sometimes feel secure whenever they have to deal with mathematics, sometimes able to learn mathematics without difficulty, sometimes have a sense of confidence in learning advanced mathematical lessons, sometimes choose to evade from using mathematics in college, sometimes have confidence in sharing their own thoughts on ways to solve a challenging problem in math, sometimes confident in answering inquiries regarding math class, sometimes see themselves who are skilled in solving math problems, and sometimes capable in utilizing other formulas to find out the answer or problems.

Also, they have poor attitude that shows the significant roles of the subject towards life. They sometimes believe Mathematics is a subject that is indeed important and needed, sometimes believe Mathematics is a necessity for the daily lives of every person, sometimes believe Mathematics is considered a meaningful subject for every person to explore, sometimes believe that Secondary math courses can become handy in everything that they choose to study on, sometimes consider numerous ways that they can utilize math outside of school, sometimes intend to take as a lot of arithmetic as they can during their whole education, sometimes deem that being active in advanced arithmetic can be handy, sometimes think

examining math causes them with critical thinking in different regions, sometimes believe that solid math foundation could help them in their expert life, and sometimes are familiar with the ways of utilizing the formulas in practical ways.

Lastly, students manifest a poor extent of how students engaged themselves in Mathematics activities. They sometimes tend to feel a sense of comfort if they hear other people mentioning math, sometimes puzzled during math class, sometimes believe studying mathematics tends to bring them joy when they are in school, sometimes find mathematics interesting and exciting, sometimes are very interested in solving new mathematical problems, sometimes would rather do their homework in mathematics than writing an essay, sometimes very interested in mathematics, sometimes compared to their other classes, sometimes believe that math class brings them more joy, sometimes find the subject mathematics to be very fascinating, sometimes eager to take greater than the necessary amount of mathematics, sometimes like it when mathematics gives them a sense of challenge, sometimes believe that the topic about mathematics is very interesting, and sometimes interested in engaging with the matter of mathematics.

Students influenced students’ understanding and attitudes toward mathematics through the way that they taught mathematics, by making certain that their students understood mathematics, and through their personalities. In particular, students claimed that they understood and liked mathematics when their students had fun and interesting lessons, had the students actively engaged in the classroom, showed the students how the mathematics that they were learning was related to their lives, taught at a relatively slow pace, helped students outside of the classroom, cared about their students, and were enthusiastic about mathematics and teaching mathematics. Students claimed that they did not understand and disliked mathematics when their students had boring monotonous lessons, did not have the students actively involved in the classroom, did not show students the relevance and importance of learning mathematics, taught at a rapid pace, did not encourage student questions in the classroom, were not available to help students outside of the classroom, did not seem to care about their students, and showed no enthusiasm about teaching mathematics (Domino, 2009).

The significant increase in both mathematical content knowledge affects positive attitudes toward mathematics. Students were found to have positive attitudes and high self-efficacy and relationships were found between attitudes and self-efficacy. Students generally found that classroom management was the biggest issue in their teaching, and that problem solving and numeracy were the most important topics addressed in their learning. Future studies should address self-efficacy of students and the effects of teacher knowledge, attitudes toward mathematics, and self-efficacy on students in the classroom (Mata, 2012).

In the indicator attitudes to Mathematics, students substantially affected student attitudes and behaviors. The largest of these effects was on students’ happiness in class, for which increase in teacher effectiveness led to increase in that outcome. Further, the magnitude of teacher effects on behavior in class and self-efficacy in math was generally larger than teacher effects on students’ math performance but, again, smaller than students’ effect on student happiness. There’s a small but negative relationship between teacher effects on students’ math performance and teacher effects on happiness in class. Students who are skilled at boosting math achievement may do so in ways that make students less happy or less engaged in class. That’s not terribly surprising considering we’ve all taken a class that taught us a lot but wasn’t the most exciting or enjoyable learning experience in the world (Blazar, 2017).

**Table 4. The Significant Relationship Between Social-emotional Intelligence and Attitude Towards Learning Mathematics**

Variable/s	r-value	p-value
Emotional-Social Intelligence Attitude Towards Learning Mathematics	0.093	0.130

$\alpha = 0.05$

Achievement motivation is one’s determination to succeed in academic studies and it includes academic aspiration and attitude towards school. Achievement oriented behavior is a function of a number of factors including the motive to succeed, the motive to avoid failure, the perceived probability of success and the incentive value of success. All these are influenced by an individual’s emotional state of mind. Students low on emotional intelligence may find failure more difficult to deal with, which undermines their academic motivation leading to a negative attitude towards something else (Sadiq, 2014).

The study of Colomeischia (2014) negates the above result as it emphasized that the success of learning depends on both internal and external factors. The results bring out a picture of the attitude towards learning mathematics and also the way some internal factors describing the emotional life influence this attitude. The results could indicate some predictors for attitude towards learning mathematics and also could be useful to find out new way motivating students in their learning process.

Another opposing result was of that Salleh and Othman (2014) who discussed the findings of a study which examine the effects of integrating emotional intelligence on students’ attitudes toward Mathematics. Research results show that the experimental group received teaching instruction which integrates emotional intelligence has statistically significant effects on students’ attitudes toward Mathematics. Generally, research results showed that the integration of emotional intelligence in teaching and learning process has significantly increased students’ attitudes toward Mathematics.

**The Significant Influence of Social-Emotional Intelligence to Attitude towards Mathematics Instruction**

As shown in the table below, all indicators do not significantly influence (p-value>0.05) attitude towards mathematics instruction. As can be seen goals for reading has significant influence to self-efficacy. The regression model produced  $R^2 = 0.015$ ,  $F= 1.048$ ,  $p>0.05$ . This is in rejection of the hypothesis that social-emotional intelligence does not significantly influence attitude towards Mathematics instruction. Thus, there is no working model that can be generated based on the statistical results.

**Table 4. The Significant Influence of Social-emotional Intelligence to Attitude Towards Mathematics Instruction**

Variable	Multiple Regression Weight		STD	t-value	p-value
	b	?	ERROR		
Constant	2.234		0.106	21.124	0.000
Self-awareness	-0.005	-0.014	0.023	-0.235	0.815
Self-management	0.033	0.082	0.025	1.344	0.180
Social Awareness	0.021	0.043	0.032	0.671	0.503
Decision-making	0.017	0.046	0.023	0.757	0.449
Attitude Towards Mathematics Instruction	0.014	0.020	0.045	0.306	0.759

$\alpha = 0.05$

Sadiq (2014) supports the above findings that achievement motivation is one’s determination to succeed in academic studies and it includes academic aspiration and attitude towards school. Achievement oriented behavior is a function of a number of factors including the motive to succeed, the motive to avoid failure, the perceived probability of success and the incentive value of success. All these are influenced by an

individual's emotional state of mind. Students low on emotional intelligence may find failure more difficult to deal with, which undermines their academic motivation leading to a negative attitude towards something else.

But the study of Nor, Ismael, and Yosof (2016) shows that emotions and social interactions predict significantly students Math attitude and eventually competence but with low correlational value. This particular research shows that social emotional intelligence is a good predictor of math attitude and competence which contradicts other reports. But this review doesn't support the above findings of the study.

## CONCLUSION

The following are conclusions gleaned from the results of this study:

Students have low social-emotional intelligence. This means that they have poor ability to be aware of own and others' feelings and use that information to lead to others. Moreover, they have also low level of self-awareness, self-management and motivation, social awareness and prosocial behavior, and decision-making.

Students have low level of attitude towards learning Mathematics. This means that they have poor perception on the subject itself and the methods and strategies used in teaching Mathematics and how teachers manifest characteristics in delivering the lessons. Also, they manifest a low level of confidence in Mathematics, self-management and motivation, social awareness and prosocial behavior, and decision-making.

It was also found out that all indicators of social-emotional intelligence do not significantly influence attitude towards mathematics instruction. As can be seen goals for reading has significant influence to self-efficacy. Thus, there is no working model that can be generated based on the statistical results.

## RECOMMENDATION

With the above knowledge generated, the following are recommended:

The school administrator and school leaders are recommended to keep track of the programs that will enhance the social-emotional intelligence and attitude towards Mathematics instruction. Also, teachers in Mathematics are recommended to check the strategies in teaching Mathematics so that achievement motivation, social-emotional intelligence, and attitude towards Mathematics instruction will be enhanced.

Teachers in Mathematics are also recommended to improve their abilities in instructional management when teaching the subjects so that the dimensions of social-emotional intelligence and attitude towards Mathematics instruction will be enhanced.

Likewise, further research on the correlation between social-emotional intelligence and attitude towards Mathematics instruction is also recommended to be replicated and also exploration on the influence of other domains is recommended to be tested for further enhancement.

Exploration of these variables is also recommended in qualitative approach so details regarding the best knowledge can be generated. This study is recommended to be replicated in other contexts and other dimensions on social-emotional intelligence, and attitude towards Mathematics instruction for confirmation and further generation of knowledge.

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