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The Interplay of Emotional Intelligence, Mathematics Anxiety, and Mathematics-Related Career Choice Among Senior High School Students

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Abstract— This study utilized a quantitative correlational design with mediation analysis to explore the interplay of emotional intelligence, mathematics anxiety, and mathematics-related career choices among senior high school students. Findings revealed that students possess moderate levels of both mathematics anxiety and emotional intelligence. Regarding career choices, students were moderately influenced by intrinsic and extrinsic factors, whereas interpersonal factors were less influential. Correlation analysis indicated that mathematics anxiety, especially numerical anxiety, is negatively related to intrinsic and extrinsic career choice. While mathematics anxiety showed a significant positive relationship with emotional intelligence in terms of attention, it showed no significant relationship with clarity or repair. Emotional repair was positively associated with intrinsic and extrinsic career choice. Furthermore, mediation analysis showed that emotional attention partially mediates the link between mathematics anxiety and career decisions, suggesting that anxiety heightens emotional awareness, which in turn shapes how students evaluate mathematics-related careers. The study concludes that reducing mathematics anxiety and enhancing emotional regulation are vital strategies for encouraging students to pursue mathematics-related careers.

Keywords— mathematics anxiety, emotional intelligence, mathematics-related career choice, intrinsic motivation, extrinsic motivation, mediation analysis.

I. INTRODUCTION

Science, Technology, Engineering, and Mathematics (STEM) careers are among the high-growth sectors, playing a crucial role in technological innovation, economic growth, and societal development (Rosenzweig & Chen, 2023). Yet many students remain hesitant to pursue STEM careers despite their importance. Persistent low enrolment in STEM programs has been widely reported, including in the Philippines (Lopez et al., 2023).

Mathematics anxiety — defined as feelings of tension, worry, and fear that interfere with mathematical performance (Passolunghi et al., 2019) — is a major barrier to developing interest in STEM.

Research consistently shows that students with high mathematics anxiety are more likely to avoid mathematics-related subjects and careers (Daker et al., 2021; Van Tuijl & Van der Molen, 2016), thereby limiting their professional opportunities (Ahmed, 2018; Eidlin-Levy et al., 2023).

Because mathematics anxiety is emotional in nature, emotional intelligence (EI) — the ability to perceive, understand, and regulate emotions — could play a critical role in how students experience and manage it. Students

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with higher emotional intelligence may better regulate negative emotions and cope with academic stress, helping prevent anxiety from narrowing their career options (Santos et al., 2018; Pirsoul et al., 2023).

Despite established links between mathematics anxiety and career avoidance, and between emotional intelligence and career decision-making, limited research has examined emotional intelligence as a mediator between mathematics anxiety and mathematics-related career choice. This study aimed to address that gap among senior high school students.

II. METHODOLOGY

A. Research Design

A descriptive-correlational research design with mediation analysis was used to examine relationships among emotional intelligence, mathematics anxiety, and mathematics-related career choice.

Descriptive statistics characterized students' perceptions of each variable, and Pearson Product-Moment Correlation assessed the strength and direction of relationships among variables. Mediation analysis, following Baron and Kenny's (1986) framework, examined whether emotional intelligence mediated the relationship between mathematics anxiety and career choice.

B. Respondents

The respondents were senior high school students from the College of Sciences, Technology and Communications, Inc. in Lucena City. A population sampling technique was initially used for all academic strand students (STEM, HUMSS, and ABM). Of the 233 students who received questionnaires, 94 returned complete responses, forming the final sample.

C. Research Instruments

Mathematics anxiety was measured with an adapted Mathematics Anxiety Rating Scale (MARS) developed by Richardson and Suinn (1972), yielding Cronbach's alpha values of 0.84 (test anxiety) and 0.82 (numerical anxiety). Emotional intelligence was assessed with an adapted Trait Meta-Mood Scale (TMMS) by Salovey et al. (1995), yielding Cronbach's alpha values of 0.72 (attention), 0.85 (clarity), and 0.88 (repair).

Mathematics-related career choice was measured with items adapted from Carpenter and Foster (1977), Ryan and Deci (2000), and Gokuladas (2010), yielding Cronbach's alpha values of 0.956 (intrinsic), 0.954 (extrinsic), and 0.89 (interpersonal). All instruments used a four-point Likert scale ranging from Strongly Agree to Strongly Disagree.

D. Statistical Treatment

Weighted means and standard deviations were used to describe the levels of each variable. Pearson r was used to assess correlations among variables, and mediation analysis was conducted to test whether the attention component of emotional intelligence mediates the relationship between mathematics anxiety and mathematics-related career choice.

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III. RESULTS AND DISCUSSION

A. Mathematics Anxiety in Terms of Test Anxiety

Table 1. Perceived Mathematics Anxiety in Terms of Test Anxiety

Statements	Mean	SD	VI
1. I worry about forgetting formulas or procedures during a math test.	3.47	0.68	A
2. I expect poor performance even after preparing for a math test.	2.82	0.78	A
3. I struggle to recall previously learned math concepts under test pressure.	3.04	0.73	A
4. I easily lose concentration when confronted with difficult math questions.	3.18	0.78	A
5. I worry making careless mistakes that lower my math test score.	3.21	0.62	A
6. I feel nervous when beginning a math exam.	2.81	0.88	A
7. I dread the thought of being timed while solving math problems.	2.91	0.67	A
8. I panic when I cannot immediately solve a math problem in the test.	2.97	0.81	A
9. I become overwhelmed by the thought of failing a math test.	3.15	0.75	A
10. I feel discouraged when comparing my math test results to others.	3.00	0.92	A
11. I experience physical tension (e.g., sweaty palms, rapid heartbeat) while preparing for a math test.	2.57	0.89	A
12. I notice my breathing become shallow or irregular during a math test.	2.26	0.82	D
13. I develop headaches or stomach discomfort when anticipating a math test.	2.37	0.90	D
14. I shake or tremble when solving math problems under pressure.	2.47	0.94	D
15. I feel drained or exhausted after completing a math test.	2.69	0.86	A
Overall	2.86	0.48	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 1 shows an overall mean of 2.86 (SD = 0.48), interpreted as 'Agree,' indicating that students generally experience moderate mathematics test anxiety. The highest mean was for item 1 (M = 3.47): worry about forgetting formulas during a test — a cognitive manifestation consistent with Sarason's (1995) Cognitive-Interference Theory, which holds that anxiety consumes working memory needed for problem-solving. In contrast, physiological symptoms (items 12–14) had the lowest means, suggesting that students' anxiety is primarily cognitive and emotional rather than physical. These findings support Yarkwah et al. (2024), who found that higher anxiety correlates with lower mathematics scores.

B. Mathematics Anxiety in Terms of Numerical Anxiety

Table 2. Perceived Mathematics Anxiety in Terms of Numerical Anxiety

Statements	Mean	SD	VI
1. I find it difficult to process numerical calculations quickly in my head.	2.99	0.71	A

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2. I avoid tasks that require a lot of numerical computation.	2.57	0.77	A
3. I often struggle to mentally calculate costs of goods when shopping.	2.55	0.81	A
4. I find it hard to analyze word problems that involve numbers.	3.01	0.78	A
5. I struggle to apply mathematical reasoning when solving word problems.	3.01	0.71	A
6. I feel pressured when others expect me to solve math problems quickly.	3.73	3.22	SA
7. I get nervous when solving math problems without a calculator.	3.21	0.65	A
8. I get anxious when someone asks me to explain how I got a math answer.	2.86	0.84	A
9. I feel uneasy when working on fractions, decimals, or percentages.	2.76	0.77	A
10. I feel unconfident when handling numerical data or computations.	3.09	3.24	A
11. I get tense when checking my math answers for mistakes.	2.91	0.80	A
12. I feel my heart beats faster when I am asked to solve numerical problems.	2.79	0.83	A
13. I feel physically uneasy such as shaking or restlessness when I struggle with numerical problems.	2.56	0.84	A
14. I experience physical tension when I see many numbers in a mathematical problem.	2.40	0.87	D
15. I experience headaches after engaging in a challenging numerical task.	2.60	0.85	A
Overall	2.87	0.55	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 2 shows a moderate overall level of numerical anxiety (M = 2.87, SD = 0.55). The highest mean was for item 6 (M = 3.73): pressure when expected to solve problems quickly — reflecting the performance-pressure component described by Sarason (1995). Students also reported difficulty with mental calculations, word problems, and symbolic number processing, consistent with Szczygiel and Sari (2024), who found that math-anxious individuals struggle particularly with symbolic numerical tasks. The lowest mean (item 14, M = 2.40) again suggests that physical symptoms are less prevalent than cognitive and emotional responses.

C. Mathematics-Related Career Choice: Intrinsic Factors

Table 3. Perceived Mathematics-Related Career Choice in Terms of Intrinsic Factors

Statements	**Mean**	**SD**	**VI**
1. I prefer a career that involves mathematics because it matches my personal interests.	2.60	0.92	A
2. I want a math-related career that allows me to use my problem-solving skills.	2.64	0.80	A
3. I would choose a math-related career even if it is difficult, as long as I enjoy it.	2.80	0.76	A
4. I prefer a career that challenges me intellectually through math-related tasks.	2.65	0.77	A
5. I want to feel fulfilled by working in a career that uses mathematics.	2.56	0.67	A
6. I prefer a math-related career that aligns with my personal values and goals.	2.79	0.76	A
7. I am motivated to pursue a career where I can apply mathematics creatively.	2.74	0.75	A

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8. I prefer a career involving mathematics because I am passionate about learning it.	2.72	0.83	A
9. I prefer a math-related job that makes me feel proud of my abilities.	2.78	0.83	A
10. I want a career involving mathematics that gives me a sense of purpose.	2.85	0.72	A
Overall	2.71	0.63	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 3 shows a moderate overall mean of 2.71 (SD = 0.63) for intrinsic motivation. The highest mean was for item 10 (M = 2.85): wanting a career that gives a sense of purpose. These findings align with the Social Cognitive Career Theory (Lent et al., 1994), which identifies personal goals and self-efficacy as central to career decisions, and with Ngozika et al. (2020) and Goh and Jamaluddin (2021), who found intrinsic factors to be the strongest predictors of career decision-making. However, the moderate level suggests that existing anxiety levels (M = 2.86–2.87) may be dampening students' intrinsic motivation.

D. Mathematics-Related Career Choice: Extrinsic Factors

Table 4. Perceived Mathematics-Related Career Choice in Terms of Extrinsic Factors

Statements	Mean	SD	VI
1. I prefer a math-related career because it offers good salary and financial stability.	2.93	0.74	A
2. Job security in math-related fields is important in my career choice.	2.71	0.68	A
3. I am more motivated to pursue a career involving mathematics because of good benefits.	2.70	0.79	A
4. I prefer math-related careers with opportunities for promotion and advancement.	2.81	0.72	A
5. I am drawn to math-related professions that are respected in society.	2.71	0.71	A
6. I prefer a math-related career that offers stable and comfortable working conditions.	2.90	0.67	A
7. I am likely to choose a math-related job because of long-term career stability.	2.69	0.80	A
8. I want a math-related career that can support a comfortable lifestyle.	2.96	0.77	A
9. I prefer math-related professions that provide recognition and status.	2.70	0.73	A
10. I prefer a math-related career based on job availability and demand.	2.79	0.72	A
Overall	2.79	0.54	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 4 shows a moderate overall mean of 2.79 (SD = 0.54) for extrinsic motivation. Financial stability (item 1, M = 2.93) and a comfortable lifestyle (item 8, M = 2.96) had the highest means, whereas long-term career stability (item 7, M = 2.69) was somewhat lower. These findings confirm that students are motivated by economic outcomes and social recognition in career decisions, consistent with Carpenter and Foster's (1977) classification of extrinsic career factors.

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E. Mathematics-Related Career Choice: Interpersonal Factors

Table 5. Perceived Mathematics-Related Career Choice in Terms of Interpersonal Factors

Statements	Mean	SD	VI
1. My parents influence my decision to pursue math-related careers.	2.30	0.80	D
2. My teachers or guidance counselors encourage me to consider math-related careers.	2.31	0.79	D
3. I consider my friends' opinions when deciding on a math-related career path.	2.40	0.81	D
4. My family's expectations affect my decision to choose a math-related career.	2.45	0.88	D
5. I choose a math-related career that will make my family proud.	2.54	0.84	A
6. My peers influence how I view careers that involve mathematics.	2.45	0.71	D
7. My relatives' professions influence my interest in math-related careers.	2.41	0.80	D
8. I value the advice from important people when choosing a math-related career.	2.87	0.72	A
9. I feel pressured to choose a math-related career because of my family's expectations.	2.56	0.96	A
10. I consider what others expect of me when deciding on a math-related career.	2.56	0.87	A
Overall	2.49	0.54	D

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 5 shows an overall mean of 2.49 (SD = 0.54), interpreted as 'Disagree,' indicating that parental, peer, and teacher influences are not perceived as strong determinants of students' mathematics-related career choices. Most items related to direct social pressure fell below 2.50. However, students agreed that they value advice from important people (item 8, M = 2.87) and feel some family-related pressure (items 9 and 10, M = 2.56 each), suggesting that interpersonal influence operates subtly through emotional motivation rather than explicit coercion. This aligns with Ngozika et al. (2020), who found interpersonal factors to be the weakest driver of career choice.

F. Emotional Intelligence: Attention

Table 6. Perceived Emotional Intelligence in Terms of Attention

Statements	Mean	SD	VI
1. I can maintain a high level of self-awareness regarding my emotional responses during mathematical tasks.	3.01	0.60	A
2. I can usually notice when my mood begins to change while solving math problems.	3.10	0.62	A
3. I can spend time thinking about how I feel when I am working on math exercises.	2.87	0.71	A
4. I am aware of my mood shifting during math lessons.	3.09	0.65	A
5. I can try to understand what causes my feelings when I struggle or succeed in math.	3.03	0.63	A
6. I am aware of my feelings during math class even when I am busy solving problems.	2.90	0.67	A

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7. I can talk to others about how I feel when dealing with math lessons or exams.	2.73	0.84	A
8. I can reflect on my emotions to better understand how I react to math challenges.	3.00	0.62	A
9. I can pay attention to how I feel while tackling math problems or studying.	2.89	0.73	A
10. I can describe my emotions about math to someone else clearly.	2.74	0.84	A
Overall	2.94	0.38	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 6 reports a moderate overall mean of 2.94 (SD = 0.38) for emotional attention. Students are most adept at noticing mood changes while solving problems (item 2, M = 3.10) and at recognizing emotional shifts during math lessons (item 4, M = 3.09). However, difficulty verbalizing emotions to others (items 7 and 10) suggests a gap between internal awareness and external expression. Consistent with Passolunghi et al. (2019), emotional attention is the foundational step in emotional intelligence — awareness must precede management.

G. Emotional Intelligence: Clarity

Table 7. Perceived Emotional Intelligence in Terms of Clarity

Statements	Mean	SD	VI
1. I can tell whether I am feeling sad about not understanding a lesson or just tired from solving many math problems.	3.18	0.73	A
2. I can tell whether my feelings in math come from low quiz scores or confidence in solving problems.	3.15	0.78	A
3. I can find ways to help me feel better when I get upset during math activities.	3.17	0.65	A
4. I can tell when I feel stressed or worried during math quizzes, exams, or problem-solving tasks.	3.29	0.74	A
5. I can explain to my teacher or classmates how I feel about math lessons or activities.	2.54	0.77	A
6. I can identify what situations in math cause me to feel anxious or confident.	2.80	0.67	A
7. I can recognize when I feel both excited and nervous at the same time during math discussions or exams.	3.11	0.66	A
8. I can tell if I am in a good or bad mood when starting a math class or working on problems.	2.91	0.71	A
9. I can identify how my feelings in math affect how I participate, focus, or perform.	3.10	0.64	A
10. I can identify whether I truly feel confident, confused, or anxious when dealing with math lessons.	3.15	0.66	A
Overall	3.04	0.41	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

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Table 7 shows an overall mean of 3.04 (SD = 0.41) for emotional clarity, with the highest mean on item 4 (M = 3.29): identifying stress or worry during exams.

Students demonstrate a moderate to high capacity to distinguish their emotional states in mathematics-related situations, consistent with Goleman's (1995) emphasis on self-awareness as foundational to emotional intelligence. The lowest mean (item 5, M = 2.54) indicates relative difficulty in expressing emotions to teachers or classmates.

H. Emotional Intelligence: Repair

Table 8. Perceived Emotional Intelligence in Terms of Repair

Statements	Mean	SD	VI
1. When I receive a low score in a math quiz, I can focus on what I did right and remind myself that I can still improve.	3.24	0.68	A
2. When I struggle with a difficult math problem, I can encourage myself to keep trying instead of giving up.	3.27	0.67	A
3. When I feel frustrated while solving complex math problems, I can pause, calm myself, and continue solving.	3.06	0.76	A
4. During math exams or recitations, I can manage my nervousness so I can focus on answering correctly.	2.71	0.77	A
5. If I had a bad experience in math class, I can practice more or ask for help to regain my confidence.	2.95	0.65	A
6. When lessons feel difficult or overwhelming, I can remind myself that improvement comes with practice.	3.31	0.57	A
7. Instead of avoiding difficult math tasks, I can work on them to overcome my fear and anxiety.	3.06	0.72	A
8. Before taking a math test, I can use relaxation techniques to reduce my anxiety.	2.89	0.71	A
9. After making mistakes in solving problems, I can quickly refocus and continue working.	2.98	0.67	A
10. Even when math stresses me out, I can keep a positive mindset and stay motivated to learn.	3.20	0.63	A
Overall	3.07	0.45	A

Legend: 3.50–4.00 Strongly Agree (SA) – High Extent; 2.50–3.49 Agree (A) – Moderate Extent; 1.50–2.49 Disagree (D) – Low Extent; 1.00–1.49 Strongly Disagree (SD) – Very Low Extent

Table 8 shows the highest mean across the EI dimensions (M = 3.07, SD = 0.45). The highest item was reminding oneself that improvement comes with practice (item 6, M = 3.31), reflecting a growth mindset consistent with Johnston-Wilder et al.'s (2021) framework of mathematical resilience.

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Lower means for managing nervousness during exams (item 4, M = 2.71) and for using relaxation techniques (item 8, M = 2.89) suggest that although students possess general emotional coping capacity, targeted regulation skills during high-stakes testing still need development, as noted by Daches Cohen et al. (2021).

I. Correlation: Mathematics Anxiety and Career Choice

Table 9. Correlation between Mathematics Anxiety and Mathematics-Related Career Choice

Mathematics Anxiety	**Mathematics-Related Career Choice**		
	Intrinsic	Extrinsic	Interpersonal
Test Anxiety	-.213*	-0.109	0.147
Numerical Anxiety	-.314**	-.204*	0.128

*Legend: * Correlation is significant at 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed)*

Table 9 shows a significant negative correlation between test anxiety and intrinsic career choice (r = -.213*), and a stronger negative correlation between numerical anxiety and intrinsic career choice (r = -.314**).

Numerical anxiety also showed a significant negative relationship with extrinsic career choice (r = -.204*). No significant relationship was found between mathematics anxiety and interpersonal career choice.

These findings align with Levy et al. (2021) and Eidlin-Levy et al. (2023), who emphasized that higher math anxiety reduces students' motivation toward mathematics-intensive careers. The absence of a significant relationship with interpersonal factors suggests that social influence operates independently of anxiety.

J. Correlation: Mathematics Anxiety and Emotional Intelligence

Table 10. Correlation between Mathematics Anxiety and Emotional Intelligence

Mathematics Anxiety	**Emotional Intelligence**		
	Attention	Clarity	Repair
Test Anxiety	.267**	0.171	-0.105
Numerical Anxiety	.321**	0.065	-0.077

Legend: * Correlation is significant at 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed)

Table 10 shows that both test anxiety (r = .267**) and numerical anxiety (r = .321**) are significantly and positively related to emotional attention but not to clarity or repair.

This suggests that students with higher mathematics anxiety become more aware of their emotional states, yet this heightened awareness does not necessarily translate into better emotional understanding or regulation.

These findings align with Passolunghi et al. (2019) and are consistent with Cognitive-Interference Theory (Sarason, 1995) — anxiety heightens self-focused attention at the expense of effective coping.

Simply noticing anxiety (attention) is insufficient; the ability to regulate it (repair) is what ultimately reduces its impact.

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K. Correlation: Emotional Intelligence and Career Choice

Table 11. Correlation between Emotional Intelligence and Mathematics-Related Career Choice

Mathematics Anxiety	**Mathematics-Related Career Choice**		
	Intrinsic	Extrinsic	Interpersonal
Attention	0.129	0.202	0.154
Clarity	0.078	0.129	-0.006
Repair	.361**	.232*	-0.198

Legend: * Correlation is significant at 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed)

Table 11 shows that emotional repair has a significant positive relationship with both intrinsic (r = .361**) and extrinsic (r = .232*) career choice, but not with interpersonal factors (r = -0.198). Emotional attention and clarity were not significantly related to any dimension of career choice. These findings support Pirsoul et al. (2023), who emphasized that emotionally intelligent individuals align career decisions with personal values and strengths. The absence of significant correlations for attention and clarity suggests that awareness and understanding of emotions alone do not directly drive career decision-making — it is the capacity for regulation (repair) that matters most.

L. Mediation Analysis: Emotional Attention as Mediator

Table 12. Mediation Estimates of Attention Component of Emotional Intelligence

Effect	**Estimate**	**SE**	**Z**	**p**
Indirect	0.0889	0.0430	2.07	0.039
Direct	-0.2318	0.1036	-2.24	0.025
Total	-0.1429	0.1015	-1.41	0.159

Note: Indirect effect = mathematics anxiety → attention → career choice; Direct effect = mathematics anxiety → career choice (controlling for attention)

Table 12 shows that emotional attention partially mediates the relationship between mathematics anxiety and mathematics-related career choice. The indirect effect is positive and statistically significant (Estimate = 0.089, p = 0.039), whereas the direct effect remains significant and negative (Estimate = -0.232, p = 0.025). The total effect is non-significant (Estimate = -0.143, p = 0.159). This pattern indicates that while mathematics anxiety discourages career pursuit, it also heightens students' emotional awareness — a heightened awareness that partially counteracts the negative effect on career aspirations. These findings align with Nafukho et al. (2018) and Pirsoul et al. (2023), who argued that emotional intelligence enables students to reflect more deliberately on career decisions.

Table 13. Path Estimates of Attention Component of Emotional Intelligence

From		**To**	**Estimate**	**SE**	**Z**	**p**
Math Anxiety	→	Attention	0.265	0.0790	3.35	< .001

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Attention	→	Career Choice	0.336	0.1280	2.62	0.009
Math Anxiety	→	Career Choice	-0.232	0.1036	-2.24	0.025

Note: All path estimates reported with standard error (SE), Z-statistic, and p-value

Table 13 confirms that mathematics anxiety significantly predicts emotional attention (Estimate = 0.265, $p < .001$), that emotional attention significantly predicts career choice (Estimate = 0.336, $p = 0.009$), and that mathematics anxiety retains a significant negative direct effect on career choice (Estimate = -0.232, $p = 0.025$). Together, these path estimates establish a partial mediation mechanism: anxiety increases self-focused emotional awareness, which in turn positively influences career reflection, yet anxiety still directly suppresses career aspiration. This supports Ran et al. (2022) and Levy et al. (2021), emphasizing that although emotional intelligence provides a buffer, high anxiety remains a primary barrier to pursuing STEM careers.

IV. CONCLUSIONS

Based on the findings, the following conclusions are drawn. First, mathematics anxiety significantly and negatively affects students' motivation toward mathematics-related career choice, particularly through its effects on the intrinsic and extrinsic dimensions. Second, mathematics anxiety is positively associated with emotional attention — anxious students become more aware of their emotional reactions — though this awareness does not translate into clarity or repair. Third, among the three emotional intelligence components, emotional repair plays the most significant role in positively influencing mathematics-related career choice. Fourth, emotional attention partially mediates the relationship between mathematics anxiety and career choice, confirming that emotional processes are integral to how anxiety shapes students' professional aspirations.

V. RECOMMENDATIONS

Students should use heightened emotional awareness during math-related stress as a cue to activate repair strategies — such as relaxation techniques, help-seeking, and positive self-talk — to turn anxiety awareness into productive action rather than career avoidance. Teachers should integrate anxiety-reduction strategies and emotional reflection exercises into the curriculum, helping students move from merely noticing anxiety to actively managing it. Schools and guidance counsellors should offer stress-management workshops and career orientation programs that address emotional barriers to STEM fields and provide academic support through tutoring and peer mentoring. Future researchers should use longitudinal designs and larger, more diverse samples to examine how emotional attention and other variables, such as self-efficacy and gender, influence long-term STEM career trajectories.

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