The Predictive Role of Emotional Intelligence, Achievement Motivation, and Academic Self-Efficacy on Students' Academic Achievement

Alelign Jemberie Kassa, Debre Markos College of Teachers' Education, Debre Markos
Email: alelign68@gmail.com

Abstract

*Numerous types of variables could affect students' academic achievement at different levels of schooling. Among these, the current study aims to trace the effects of emotional intelligence, academic motivation and academic self-efficacy on students' academic achievement in colleges. The study used descriptive survey design with quantitative approach. The study had 248 population and 215 participants. Adapted Questionnaires and document reviews were used to collect information from the participants. Inferential statistical techniques were used to address the research questions. The results of this study showed that there were significant mean differences between male and female students regarding emotional intelligence, academic self-efficacy and academic achievement. However, there was no significant difference in achievement motivation by gender. Also, the correlation coefficient results demonstrated that there was a statistically significant positive correlation between emotional intelligence and achievement motivation, emotional intelligence and academic self-efficacy and emotional intelligence and academic achievement. In addition, academic achievement correlates with achievement motivation, but the significant difference between academic self-efficacy and academic achievement was not that significant. Again, the ANOVA result showed that emotional intelligence, achievement motivation and academic self-efficacy had a significant effect on students' academic achievement. Lastly, in a multiple regression analysis, the coefficient of determination (R^2) indicated that 49.4% of the variation on academic achievement can be expla*ined by emotional intelligence, achievement motivation and academic self-*efficacy. By implementing these findings, colleges could create more inclusive and effective educational environments, helping students maximize their potential beyond traditional academic instruction.*

Keywords: academic achievement, academic self-efficacy, achievement motivation, emotional intelligence

Introduction

Education is a pillar for the development of a nation, and is a catalyst for social, economic, political and other changes to bring about better understanding and communication as well as interaction among people. Hence, education has been given a great value to provide equal opportunity for children, teenage girls and boys, men and women at all age levels. All efforts, however, couldn't achieve what is expected from every segment of the community (Bandura, 1995).

Numerous types of variables could affect students' academic achievement at different levels of schooling. Among these, the current study that is the effects of emotional intelligence, academic motivation and academic self-efficacy on students' academic achievement in colleges may be one. Mayer and Salovey (2010) indicated that emotional intelligence (EI) is a collection of individuals' mental abilities which can be used for different purposes. Moreover, as cited in Hogan et al., (2003) defined EI as the ability that consists of several related abilities: intrapersonal (composed of abilities like recognizing and understanding one's feelings); interpersonal (comprised of several related abilities like empathy, social responsibility, and interpersonal relationship), adaptability (consisting of abilities related to flexibility, reality testing and problem solving), stress management (consists of abilities like resisting or delaying an impulse and stress tolerance); general mood (consists of abilities related to looking at the brighter side of one's own life and developing positive attitude even in the face of negative feelings and adversity-optimism and the ability to feel satisfied with one's life, to enjoy one self and others to have fun and express positive feelings-happiness).

Regarding the importance of emotional intelligence to students' academic success, extensive international studies reported that it can play a potent role in determining and predicting students' academic achievement to a greater extent. A study by Tafa and Tefera (2024) in Ethiopia revealed a significant positive relationship between emotional intelligence and academic performance among university students. The combined effects of emotional intelligence and achievement motivation accounted for approximately 33.8% of the variation in academic performance, underscoring the importance of these factors in academic success. Furthermore, research by Alam et al., (2023) indicated that emotional intelligence indirectly influences academic achievement through its impact on self-efficacy, highlighting the mediating role of self-efficacy in this relationship. Moreover, recently, a systematic review by MacCann et al. (2020) analyzed the relationship between EI and academic performance. The meta-analysis concluded that EI is a significant predictor of

academic achievement, even when controlling for intelligence and personality factors. A study by Perera and DiGiacomo (2013) found that EI significantly predicts academic performance, with higher EI associated with better academic outcome. In addition, another study by Mulugeta (2010), cited in Tadesse (2011), in his study indicated that there is a close link between EI and students' academic achievement.

Marsh (2006) found no correlation between EI and academic achievement. Regarding the arguments among previous studies ore research is needed in this area, for example, researchers such as Abisamra (2000) recommended that there is a relationship between EI and academic achievement. Similarly, Marsh (2006) in hisstudy clearly concluded that the issue related to academic achievement and EI is complex, and more research in this area is needed. In addition, Low and Nelson, (2009) and Parker and Dufy (2005) suggested that more research is needed to determine its effect on academic achievement. They also strengthened their idea noticing that future research could explore the impact of EI on students' academic achievement and the relationship between the two.

Regarding sex differences in EI Goleman (1998), as cited in Brown (2004), asserted that differences in EI exist, admitting that men and women may have different profiles of strengths and weaknesses in different areas of emotional intelligence, through their overall level of EI and equivalent. In contrast, Brackett and Mayer (2003) found that females scored higher than males on EI. Concerning academic achievement, studies conducted by Singh and Singh (2009) and SunbulAslan (2007) revealed significant differences in academic achievement of boys and girls due to the effect of EI on secondary school students.

When considering academic achievement, particularly in the college level, another significant factor is achievement motivation. The need and desire to achieve is basic and natural in human beings as the other biological or socio-psychological needs and desires. The need and desire to achieve is a springboard of achievement motivation. However, in a competitive society or set up, the desire to excel over others or to achieve a higher level than one's peers is more intensified which in turn may lead to a stronger drive or motive to achieve something or everything essential to beat others in the race and consequently experience a sense of pride and pleasure in the achievement (Ajayi et al., 2012).The National Association of School and Psychologists (2014) stated that positive academic motivation shows these characteristics; willing to learn, liking related learning activities and believing that education is important. Students who have high motivation will positively influence

or affect academic self-efficacy of the student, meaning that the higher the intrinsic motivation in an individual, the higher the tendency for self-efficacy behavior (Onah, 2023). In contrast, Bandura (1995) stated that gender does not have any effect on the achievement motivation.

Still another study carried out by Mohammed et al. (2007) reveals that there were statistically positive correlations between self-efficacy and performance (r=.289), self-efficacy and intrinsic motivation (r=.490), self-efficacy and extrinsic motivation (.297), intrinsic motivation and performance (.327), and extrinsic motivation and performance (.251). This shows that students high in self-efficacy and motivation performed better than those low in self-efficacy and motivation. The above evidence is relatively consistent in showing that efficacy beliefs contribute significantly to the level of motivation and performance. They predict not only the behavioral changes accompanying different environmental influences but also differences in behavior between individuals receiving the same environmental influence, and even variation within the same individual in the tasks performed and those shunned or attempted but failed.

Belief in the self appears to influence goals for which one strives. Academic self-efficacy is one's belief and ability to organize and execute the course of action that is required to produce a desired goal. Students' belief about their thinking in relation to academics is the key to what he/she can achieve. Academic self-efficacy is the student's conviction that she/he can successfully perform a given task assigned to them for the purpose of achieving a goal. According to Putwain et al. (2013), self-efficacy is the belief in one's ability to perform desired actions. Individuals' actions are influenced by their views of their abilities and the results of their efforts. Bandura (1997) describes three dimensions of self-efficacy; as thus: magnitude, generality, and strength. The magnitude dimension relates to the difficulties in the task being done so that the students choose tasks based on the difficulty level of the task. The general dimension is more related to the field of work or individual beliefs in carrying out their duties, and the expectations of success in certain situations can be generalized to other situations. The strength dimension relates to the strength or weakness of the student's beliefs or refers to a certain assessment of how someone can be successful at a particular task. Previous research by Ugwuanyi et al. (2020) found a significant positive association between self-efficacy and learner performance, while Odiri (2020) discovered a significant relationship between students' self-efficacy and mathematics achievement. The difference in results found in research conducted by Sari (2016), revealed that academic self-efficacy is not a good predictor of academic

procrastination. Apart from self-efficacy, academic motivation is a significant and positive predictor of academic achievement (Mamah et al., 2021). Almost all research findings show that self-efficacy belief and achievement motivation have consistently significant and positive relationships with academic achievement of students. Similarly, self-efficacy belief influences academic achievement through achievement motivation indirectly and directly as well. Gender difference findings are more likely to contradict each other.

To the researcher's knowledge, there were no studies in this area on this particular title using these three variables in a combination manner (EI and achievement motivation). So, the researcher was motivated to research Finote Selam College of Teachers Education of second-year trainees. Different Supportive theories for each variable provide a strong theoretical foundation. Theory by Daniel Goleman's (1995) model includes five components: self-awareness, self-regulation, motivation, empathy, and social skills. His theory suggests that students with high emotional intelligence are better at managing stress, interacting with peers, and staying motivated factors that directly or indirectly boost academic performance

Again Theory by David McClelland (1961) posits that individuals have a need to achieve, and those with a high need for achievement are more likely to succeed academically. They set challenging goals, take responsibility, and seek feedback. Also the Theory by Albert Bandura (1986) introduced the concept of self-efficacy as a central component of his theory. He argued that students' belief in their ability to succeed academically affects their learning behaviors, effort, persistence, and performance. This study is also supported by Constructivist learning theory (Piaget & Vygotsky). Academic achievement is the outcome variable influenced by how students construct knowledge. Emotional intelligence, motivation, and self-efficacy all affect how actively and meaningfully students engage in the learning process.

Conceptual framework of variables

Previous research depicted the relationship of emotional intelligence, academic self-efficacy belief, achievement motivation, and academic achievement of students (Howell, 2007). In this study, achievement motivation, emotional intelligence, and academic self-efficacy are considered as independent variables and academic achievement is considered as the dependent variable.

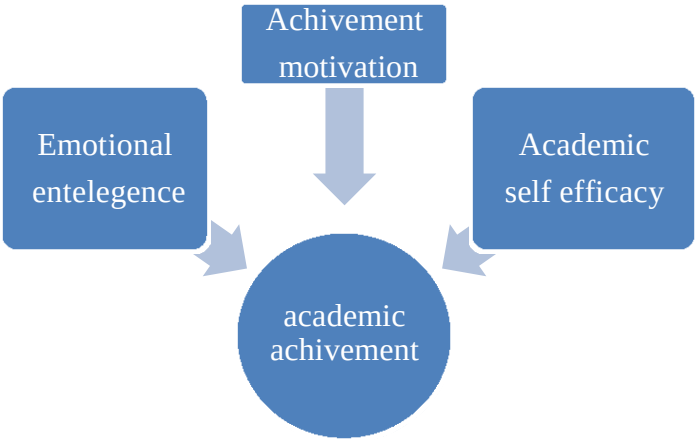

Figure1.Conceptual framework of variables

Research Questions

The purpose of this study was, therefore, to look into the predictive role of emotional intelligence, achievement motivation and academic self-efficacy on the academic achievement of students in Finote Selam College of Teachers Education. In line with this, the following basic research questions were formulated.

1) Is there a statistically significant mean difference between male and female college students with regard to emotional intelligence, achievement motivation, academic self-efficacy, and academic achievement?
2) Is there a statistically significant relationship between emotional intelligence, achievement motivation, academic self-efficacy, and academic achievement?
3) Is there a statistically significant mean difference across departments of college students on emotional intelligence, achievement motivation, academic self-efficacy, and academic achievement?
4) To what extent do emotional intelligence, academic self-efficacy, and achievement motivation predict students' academic achievement?

Method

Design of the Study

The purpose of this study was to examine the effects of emotional intelligence and achievement motivation and academic self-efficacy on students' academic achievement in Finote Selam College of Teachers Education. The research design to fulfill this purpose mainly was descriptive survey design because this design was to examine the effects and relationships between variables of the study (emotional

intelligence and achievement motivation, and academic self-efficacy) on academic achievement. (Gay & Airasian, 2000; Smoekh & Lewin, 2005). Again quantitative research approach was used to see the effects of emotional intelligence, achievement motivation and academic self-efficacy on students' academic achievement by gathering quantitative data through quantitative data collecting instruments (Dessalegn, 2000).

Population, Sample, and Sampling Techniques

The study was conducted in Finote Selam Town, in 2019/2020 G.C. academic year on purposefully selected second-year regular college students. The population of the study was 215 (91 male, 124 female) second-year regular students. The reason behind the selection of Finote Selam College was mainly because the researcher's familiarity with the college and town, which facilitates the researcher's communication with college students and reduces confusion that usually resulted from being new to the area cultures and traditions. Besides, the reason for selecting second-year regular students was due to the experience the researcher has in teaching different courses to those students.

To make it manageable and simple, departments were categorized into five Professional courses, Math & Environmental Sciences, Language, Social studies, and Aesthetics Then all the trainees from these departments were selected by using a comprehensive sampling technique. The reason to include all population was due to manageability in nature.

Data Gathering Instruments

Adapted Questionnaire and document reviews were used to collect data from the participants of the study. Three separate scale questionnaires were administered to the participants to collect data about their emotional intelligence, achievement motivation, and academic self-efficacy.

The questionnaire had three parts: part one was about students' personal profile including their sex and roll number. Sex was included in order to see sex differences on emotional intelligence, achievement motivation and self-efficacy and academic achievement of the students. In addition, roll numbers of students were incorporated to obtain their College Grade Point Average (CGPA) from the college registrar office easily as a measurement of academic achievement.

Procedures of Data Collection and Scoring

At the beginning, the researcher asked permission from research unit, registrar and second year students. After receiving permission, the researcher administered the instruments to the sampled college students in opposite shift with the help of other assistant teachers. Students were well informed about their role before the questionnaire is administered to the participants. Participants were briefly oriented about the purposes of the questionnaire. They were assured of confidentiality and anonymity. Finally, they were kindly requested for consent to take part in the study and to give genuine information. The questionnaires were administered to sampled students in face-to-face situations to control extraneous factors such as coping and writing others opinions by asking others that may negatively affect the validity of the information. Even though there was enough direction in the instrument, orientations were orally clarified during the administration of the questionnaires; trainees were told to write their sex and role number. These were needed to identify their CGPA results.

Regarding the data collection process of trainees' CGPA result to measure their academic achievement, the researcher used the procedure, which was firstly told the purpose of students' CGPA to the registrar office and collected their CGPA by their ID number from the registrar office.

The responses of students were thoroughly checked, and from the total 248 questionnaires distributed, 17 were not totally returned, while 16 questionnaires were ignored because they were incomplete. Thus, a total of 33 questionnaires were discarded, and only 215 questionnaires were used for the analysis. The instrument had a scale ranging from (1=strongly disagree, 2=disagree, 3=don't decide, 4=agree, 5=strongly agree).

Data Analysis Techniques

For the purpose of the study, different inferential statistical techniques were applied, such as independent two-sample test, correlation, one-way ANOVA, and multiple linear regression.

Validity and reliability test

To check the validity of the instrument, it was given to experts at Finote Selam Teachers College. Following the necessary amendments were made by restating, omitting and inserting whatever needed with content clarity and language of the questionnaire. All the instruments were translated into Amharic from English

language to avoid language barriers. This was done by requesting help from language teachers in the college.

A pilot study was conducted before the main study to assess the reliability of the instrument with 30 students in the study area and reliability of the questionnaire was monitored. The pilot study results showed that the questionnaire had an acceptable reliability index across the three variables, academic self-efficacy (.750), emotional intelligence (.734), and achievement motivation (.784)

Results

The main purpose of this study was to investigate effects of emotional intelligence, achievement motivation and academic self-efficacy on students' academic achievement.

Background Information of the Respondents

The background information of the participants is presented under her.

Table 4.1: Summary of the total number of Regular Trainees and samples in the study

Department	Population (N)	Sample (n)	Percentage of total Sample
Professional Courses	66	51	20.56
Math & Engineering	30	25	10.08
Language	72	61	24.59
Social Studies	43	38	15.32
Aesthetics	48	40	16.12
Total	248	215	86.67

Note. *N* = total population per department; *n* = number of samples taken. Percentages are based on the total sample (n= 215)

As indicated in Table 4.1, 91 (42.33 %) of them were male students whereas 124 (57.67 %) of them were female students. Again out of 5 merged departments, 51/248 (20.56 %) were Professional courses, 25/248 (10.08%) were Math & E/S and Math, 61/248 (24.59%) were Language, 38/248(15.32%) were social studies, and 40/248(16.12%) were Aesthetics trainees.

The significant mean difference between male and female college students on emotional intelligence, achievement motivation, academic self-efficacy, and academic achievement. To answer this research question, an independent sample t-test was conducted. And the results are presented in Table 4. 2.

Table 4.2: Descriptive statistics and Summary of independent samples t-test of Sex differences

Variables	Male (n=91)		Female (n=124)		Mean differences	df	t-value	P-value
	Mean	SD	Mean	SD				
EMI	83.60	10.280	78.49	16.918	5.11	213	-2.745	0.007
AM	56.74	6.373	54.34	16.703	2.40		-1.460	0.146
ASC	56.26	9.016	51.70	10.518	4.47		-3.414	0.001
AA	2.7820	0.45876	2.5362	0.44017	0.245		-3.948	0.000

****Significant P< 0.05, df = 213, two tailed***

Note: EMI- emotional intelligence, AM-achievement motivation, ASC-academic self-efficacy, and AA- academic achievement

The results in Table 4.2 indicated that the mean score of male students in emotional intelligence was 83.60, whereas the mean score of female students was 78.49, with a mean difference of 5.11. Again, the mean score of male students in achievement motivation was 56.74, and the mean score of female students was 54.34, with mean difference 2.40. Besides, the mean score of male students in academic self-efficacy was 56.26 and the mean score of females was 51.70, with a mean difference of 4.47. In addition, male students' mean score of academic achievement was also greater than female students, with a mean difference of 0.245.

Besides, the results of the two-sample t-test in Table 4.2 indicated that there was a statistically significant mean difference in emotional intelligence, academic self-efficacy, and academic achievement by the gender of participants. But no significant difference was seen in achievement motivation at $p>0.05$. As the study revealed, male college students scored relatively higher mean scores than their female counterparts in EMI at t-obtained -2.745, ASE at t-obtained -3.414, and AA at t-obtained -3.948 at $p<0.05$. But the difference in achievement motivation at t-obtained -1.460, was not significant ($p>0.05$). From this result, it is seen that female students had lower EMI, ASE, and AA than the male students.

This result is also supported by other research, like a study conducted at the University of Karachi found significant gender differences in emotional intelligence among undergraduate students, with males scoring higher in emotion perception, utilization, and management. These EI components were also significant predictors of academic self-efficacy. Similarly, research by Fayombo (2012) revealed gender differences in emotional intelligence, with males outperforming females in certain EI aspects.

Again a study examining gender differences in achievement motivation found that male students scored higher in dimensions such as confidence in success, competitiveness, eagerness to learn, and preference for difficult tasks. These findings suggest that males may exhibit higher achievement motivation in specific areas. However, other studies have found no significant gender differences in academic self-efficacy, suggesting that results may vary depending on the context and population studied.

The relationship between emotional intelligence, achievement motivation, academic self-efficacy, and academic achievement.

To determine the overall relationship between EMI, AM, ASE, and AA, a Pearson product-moment correlation coefficient was used.

Table 4.4: Summary for Correlation among EMI, AM, ASE, and AA

Groups/ variables	N	Mean	r			
			1	2	3	4
Emotional intelligence (1)	215	80.66	1			
Achievement motivation (2)	215	57.17	0.512**	1		
Academic self-efficacy (3)	215	53.63	0.699**	0.361**	1	
academic achievement (4)	215	2.6402	0.172*	0.339**	0.024	1

Correlation is significant at the 0.01 level (2-tailed)

N= Number of Students, r = correlation coefficient

As indicated in Table 4.4, the correlation coefficient results demonstrated that there were statistically significant positive correlation between emotional intelligence and achievement motivation at (r=.512, N=215, p<.01), emotional intelligence and academic self-efficacy at (r=.699, N=215, p<.01) and emotional intelligence and

academic achievement at (r = .172, N=215, p<.01. In addition, academic achievement correlated with achievement motivation at (r= 0.339** N=215, p<.01), significance difference was observed between academic self-efficacy and academic achievement (r=.24, N=215, p<.01), with a very weak positive relationship between them.

Other study findings also support this result such as a study by Murad (2021) found a significant positive correlation between emotional intelligence and achievement motivation (r = 0.45) among college students. This suggests that higher emotional intelligence is associated with increased motivation to achieve academic goals. Similarly, Shukla et al. (2024) reported a positive correlation between emotional intelligence and achievement motivation among undergraduate students, indicating that students with higher emotional intelligence tend to have greater achievement motivation

Again research conducted by Alam (2023) demonstrated that emotional intelligence is significantly correlated with self-efficacy among postgraduate students. Additionally, a study by Nwokolo and Ahaneku (2021) found a moderate positive relationship (r = 0.451) between emotional intelligence, self-efficacy, and academic achievement among secondary school students in mathematics, emphasizing the interconnectedness of these variables.

The mean difference across departments of college students on emotional intelligence, achievement motivation, and academic self-efficacy

Here, a one-way ANOVA was conducted to assess statistical significance, followed by Tukey's post hoc test to identify specific differences (N = 215).

Table 4.5: Summary of Descriptive Statistics, ANOVA, and Post Hoc Comparisons

Variable	Comparison	Mean Difference	F	p-value
EMI	Professional Study vs Maths & E.S	15.145	14.149	0.000
	Maths & E.S vs Language	16.756		
	Language vs Aesthetics	17.990		
	Aesthetics vs Social Study	19.326		
AM	Professional Study vs Maths & E.S	1.20	30.881	0.000
	Maths & E.S vs Aesthetics	5.57		
	Aesthetics vs Language	6.66		
ASE	Professional Study vs Aesthetics	3.27	11.858	0.000
	Aesthetics vs Social Study	4.26		
	Social Study vs Language	4.56		
	Language vs Maths & E.S	7.14		

*The mean difference is significant at P< .05 alpha level

The ANOVA summary Table 4.5 showed that emotional intelligence, achievement motivation and academic self-efficacy had a significant contribution on students' academic achievement [F (4,210) =14.149, p<.05], [F (4,210) =30.881, p<.05], and [F(4,210) =11.858, p<.05] respectively. The post-hoc analysis reveals the following statistically significant differences across departments:

- From the first group, on Table 4.5, in the case of emotional intelligence (EMI), Professional Study scored significantly lower than Social Study (Mean Difference 19.326, p<.05). Again Maths & E.S., Language, and Aesthetics students scored higher than Professional Study (Mean Difference range =15.145-17.990, p< 0.05). This implies that Professional study students had the least emotional intelligence than other department students.
- In the second group, in the case of Achievement Motivation (AM), Professional Study students exhibited lower AM scores than all other departments. The largest mean difference was between Social Study and Professional Study (Mean Difference = 6.66, p < 0.05). Smaller differences were found among Language, Aesthetics, and Maths & E.S. students (Mean Difference <1.5, p < .05). When

summing up this table, Professional study students had the list achievement motivation than other department students

- In the third group, in case of Academic Self-Efficacy (ASE): The highest ASE was observed in Maths & E.S students (Mean = 58.57), significantly higher than Professional Study (Mean Difference=7.14, p< 0.05). Again Social Study and Language students scored moderately higher than Professional Study (Mean Difference = 4.26-4.56, p < .05). Aesthetics students had a slightly higher ASE than Professional Study (Mean Difference = 3.27, p < 0.05). When summing up this, Professional study students also had a list academic self-efficacy than other department students.

The extent of emotional intelligence, academic self-efficacy, and achievement motivation to predict students' academic achievement

The other purpose of this study was to examine whether emotional intelligence, achievement motivation, and academic self-efficacy significantly predict college students' academic achievement or not. To check this, multiple linear regression analysis was performed, and the output is discussed here.

The Regression equation

Table 4.6: Multiple Linear Regression Analysis of three predictor (X1-X3) Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t – value	P-value.
		B	SE	Beta (β)		
1	(Constant)	5.086	2.861		1.778	0.
	Academic self-efficacy (X1)	0.235	0.089	0.198	2.624	0.010
	Achievement motivation (X2)	0.053	0.054	0.077	0.989	0.324
	Emotional intelligence (X3)	0.617	0.070	0.612	8.876	0.000

Note: *t-values =1.778 significant at p<0.05, df = 213,*
Predictors: (Constant), EMI, AMC, ASE, Dependent Variable: GPA

As shown in Table 4.6, from the total 3 explanatory variables, academic self-efficacy (Beta (β) .198, P=.01) and Emotional intelligence (Beta=.612, P=.000) had statistically significant contributions at P<.05 on academic achievement in FCTE. But

Achievement motivation (Beta=.07, P=.324), where P>.05, had no statistically significant contribution on academic achievement in FCTE at P<.05. This shows that the contribution of independent variables to the dependent variables was different from variable to variable. Emotional intelligence (Beta (β) =.612) made the highest unique contribution to academic achievement when other predictor variables were held constant. The Next one to Emotional intelligence is academic self-efficacy (β = .198).

This indicates that if Emotional intelligence increases by one standard deviation unit, then AA increases by .612 standard deviation units when other predictor variables are held constant. Again, if academic self-efficacy increases by one standard deviation unit, then AA increases by .198 standard deviation units when other variables are held constant.

Depending on the above table 4.6 under unstandardized coefficients B, the following regression model was stated as Y = 5.086+0.235X1 +0.053X2+0.617X3

As the ANOVA summary in Table 4.8 indicated, the model is fit to predict academic achievement from emotional intelligence, achievement motivation and academic self-efficacy because it was found statistically significant ([*df=3, 211; F*=37.803, *p<.05]*). This indicates the model used in the study was significantly good enough in explaining the variation in the dependent variable. The model establishes that (emotional intelligence, achievement motivation and academic self-efficacy) were as a whole contributing (3185.461/ 6443.700) x 100%= 49.43% of the variation in academic achievement.

Table 4.7: One-way Analysis of Variance (ANOVA) of the Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3185.461	3	1061.820	37.803	0.000[a]
Residual	3258.239	211	28.088		
Total	6443.700	214			

a. Predictors: (Constant), ASE, AM, EMI
b. Dependent Variable: GPA

The SPSS output is also labeled on ANOVA for analysis, in Table 4.7 above. It provided results for a test of significance for R, $R^{2,}$ and adjusted R^2 using the F-statistics. In this analysis, the *p*-value is well below .05 (p=.000) at degree of freedom (df = 3,211) and (F=37.803.638). Therefore, it that R, $R^{2,}$ and adjusted R^2 that exist

between the predictor variables and the criterion variable is statistically significant and there is a relationship between the independent variables and the dependent variable.

Table 4.8: Model Summary of Regression

Model	R	R^2	*Ad* R^2	Std. Error of the Estimate
1	0.703[a]	0.494	0.481	5.300

a. Predictors: (Constant), ASE, AM, EMI
b. Dependent Variable: GPA

As shown in Table 4.8 above, the coefficient of determination (R^2) was 0.494. This coefficient of determination (R^2) indicated that 49.4% of the variation on academic achievement can be explained by emotional intelligence, achievement motivation and academic self-efficacy. On the other hand, 50.6 % of the variation on AA cannot be explained by the above 3 independent variables. This indicates that other variables contribute to academic achievement.

Adjusted R^2 is the modification for the limitation of R^2. The value of the adjusted R^2 was considered to measure the fitness of the model. The difference between R^2 and adjusted R^2 was .013, which indicates that if the model were derived from the population, it would account for approximately 1.3% less variation in academic achievement. As indicated in Table 4.8, R indicates a simple relationship between independent and dependent variables, which had a value of .703. The standard error of the estimate is also a measure of how much R is predicted to vary from one sample to the next. In this case, the standard error of the estimate is about 5.300, which means the multiple correlations R between all the predictor variables (X1, X2, and X3) and academic achievement varied by 5.300 if we move from the given sample to the next sample.

Several studies also align and support this result, such as a systematic review by MacCann et al. (2020) analyzed the relationship between EI and academic performance. The meta-analysis concluded that EI is a significant predictor of academic achievement, even when controlling intelligence and personality factors.
Again a study by Perera & DiGiacomo (2013) found that EI significantly predicts academic performance, with higher EI associated with better academic outcomes. A study by Zuffianò et al. (2013) found that self-efficacy beliefs uniquely contribute to

academic achievement, highlighting the importance of students' confidence in their academic abilities.

In relation to achievement motivation and academic achievement, a study by Kusurkar et al. (2013) explored the relationship between motivation and academic performance. While intrinsic motivation was positively related to academic achievement, the overall predictive power was modest, suggesting that other factors may play a more substantial role. Research by Busato et al. (2000) indicated that while achievement motivation correlates with academic success, its predictive value diminishes when other variables like intelligence and personality are considered.

Conclusion

The results from this study confirmed that there were significant differences between male and female students on in emotional intelligence, academic self-efficacy and academic achievement. But no significant difference is seen in achievement motivation. As the study revealed, all male college students scored relatively higher mean scores than their female counterparts in EMI, ASE, and AA. But the difference in achievement motivation was not significant. From this, it is seen that female students have lower EMI, ASE and AA than male students.

- The study demonstrated that there were statistically significant positive correlations between emotional intelligence and achievement motivation, emotional intelligence and academic self-efficacy and emotional intelligence and academic achievement. In addition, academic achievement correlates with achievement motivation but, the significance difference seen between academic self-efficacy and academic achievement had very weak positive relationship between them.
- Again the one-way ANOVA and Post hoc analysis of the study showed that emotional intelligence, achievement motivation and academic self-efficacy had a significant effect on students' academic achievement [$F(4,210) = 14.149$, $p<.05$], [$F(4,210) = 30.881$, $p<.05$] and [$F(4,210) = 11.858$, $p<.05$] respectively. The post hoc compression result showed that professional study trainees had lower emotional intelligence, achievement motivation, and academic self-efficacy than other department trainees.
- Lastly, a multiple regression analysis of this study, the coefficient of determination (R^2) indicated that 49.4% of the variation on academic achievement can be explained by emotional intelligence, achievement motivation, and academic self-efficacy. On the other hand, 50.6% of the variation in AA cannot be explained by the independent variables.

Recommendation

Female students have lower EMI, ASE, and AA as compared with male trainees in the college. Therefore, instructors and college administrators should take considerable measures toward enhancing the academic achievement of these trainees by making interventions, designating special programs related to these variables.

There is a positive correlation between Emotional intelligence and Achievement motivation, Emotional intelligence and academic self-efficacy, and Emotional intelligence and academic achievement. In addition, academic achievement correlates with achievement motivation, so professional study department instructors should enhance students' Emotional intelligence and Achievement motivation, Emotional and academic self-efficacy to be successful in their AA

The ANOVA and Post hoc analysis of the study across departments showed that professional study trainees had lower emotional intelligence, achievement motivation and academic self-efficacy than other department trainees. Therefore, the concerned department, the colleges and counseling officers should design an intervention program on EMI, AM, and ASE (e.g. Panel discussion, workshop, different tutorials) etc. that helps to improve the trainees' EMI, AM and ASE and then improve their academic achievement.

Results showed that EMI, AM, and ASE predicted academic achievement of trainees. Therefore, college instructors, college administrators and counselors should work hard to develop the trainees' EMI, AM, and ASE by counseling and training them.

Further study with a large sample and wider geographical area should be conducted on the effects of EMI, AM, and ASE on trainees' academic achievement to reach a reliable conclusion.

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