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Emotional Intelligence, University Engagement, and Academic Achievement among Bahir Dar University Undergraduates: A Cross - Sectional Study

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Abstract

This study examines the relationship between university students' emotional intelligence, university engagement and academic achievement by using a cross-sectional correlational design. Data were gathered from 328 Bahir Dar University first-year undergraduate students using a cross-sectional correlational design. To measure EI (self-awareness, motivation, self-regulation, empathy, and social skills) and university engagement (belongingness, persistence, course value, and peer/social engagement), the study used Goleman's Emotional Intelligence Scale and the University Engagement Scale. Descriptive statistics, Pearson correlations, t-tests, ANOVA, and regression analyses were all conducted. In all EI dimensions, students' scores were significantly higher than the expected mean ($p < .001$), with self-awareness having the highest score ($M = 3.80$). Additionally, greater levels of university engagement were reported, especially in terms of the value of university and belongingness ($M = 4.05$). There were no gender differences in overall EI, but women performed better than men in social skills (EI) and several engagement domains ($p < .05$). Self-awareness was higher among law students than engineering students ($p = .005$). Among EI components, Social skills, self-awareness, and empathy all had positive correlations with GPA ($p < .01$). The regression revealed that, although only perceived course value emerged as a significant positive predictor of academic achievement ($p = .001$), the combined model with all predictors accounted for 8.9% of the variance in GPA. Participants reported moderately high scores in overall emotional intelligence and university engagement; however, despite these high levels, emotional intelligence and university engagement showed limited predictive power for academic achievement. One possible justification might be due to contextual factors and a lack of integration of EI and university engagements in teaching, learning, and assessment practices. Disparities across academic streams and gender in EI and engagement scores underscore the need for targeted interventions. The study recommends that universities and educators foster students' emotional intelligence and guide their engagement toward academic activities to enhance academic achievement.

Keywords: Emotional intelligence, university engagement, academic achievement, gender differences, disciplinary differences, Ethiopia

Introduction

Academic success has long been seen as the main objective of education, influenced

by social pressure to find elements that improve learning outcomes and future success (MacCann et al., 2020). Achievement has long been known to be significantly influenced by traditional cognitive factors, such as IQ and past academic achievement (Richardson et al., 2012). However, growing amounts of literature highlight the importance of non-cognitive factors primarily emotional intelligence in the development of students' adaptability, resilience, and social abilities (Mayer et al., 2016; MacCann et al., 2020). This emerging perspective is an outgrowth of a wider movement in educational psychology, where social-emotional learning (SEL) is universally recognized as essential for the well-rounded development of students (Durlak et al., 2011).

According to Mayer et al. (2016), emotional intelligence is the capacity to identify, comprehend, control, and make effective use of emotions. It has become a crucial psychological concept in psychology, organizational behaviour, and education. At first, logical reasoning and emotions were seen as two different fields, but more recent viewpoints acknowledge emotional intelligence (EI) as a separate type of intelligence (Fiori & Maillefer, 2018). Goleman's (1995) model, which was built upon Salovey and Mayer's (1990) ability-based framework, gave the idea widespread recognition. Goleman (1995) which is an influential model in emotional intelligence understood emotional intelligence via five core competencies: self-awareness, self-regulation, motivation, empathy, and social skills. These are linked with improved stress management, interpersonal relationships, and academic

adjustment (Bradberry & Greaves, 2009; Zeidner et al., 2008).

The claim that emotional intelligence (EI) affects academic performance by encouraging motivation, self-control, and engagement is supported by empirical research (Pekrun et al., 2007). According to Reyes et al. (2012), students with high EI are more resilient, seek academic help more frequently, and engage fully in class activities. On the other hand, disengagement and higher dropout intentions are linked to low EI (Parker et al., 2006). However, not all studies have found a consistent relationship between EI and academic achievement; some have found weak or non-significant correlations (Chew et al., 2015; Humphrey-Murto et al., 2014). These disparities imply that the influence of EI may be mitigated by contextual elements, including discipline, educational attainment, and evaluation (Chew et al., 2015; Connor et al., 2017).

As an explanation for these discrepancies, academic engagement has been proposed as a mediating variable in the EI and academic achievement relationship. Participation in its behavioral, emotional, and cognitive forms is observed to promote self-regulated learning and healthy peer relationships (Fredricks et al., 2004; Parker et al., 2004; Zhoc et al., 2018). Though there are different models of student engagement; university student engagement is a multi-dimensional construct that measures students' involvement in their academic and institutional affairs; it encompasses students' value of the university, their intention to continue studying, and the extent to which they attribute relevance to coursework, the quality of peer

relationships, and their engagement (Kahu, 2013).

Empirical findings supported that emotionally intelligent students are more engaged, which is a predictor of better academic results (Parker et al., 2004). Zhoc et al. (2018) discovered, for example, that self-directed learning among college students was positively connected with emotional intelligence (EI) components like emotional self-regulation and appraisal. Likewise, Suleman et al. (2019) found that emotional intelligence (EI) traits like relationship management and emotional stability were important indicators of academic success. These results are in line with Pekrun's (2006) control-value theory, which holds that motivation is maintained through efficient emotion regulation that reduces negative achievement emotions (like boredom and anxiety) and increases positive ones (like pride and enthusiasm).

Findings demonstrated that there are emotional differences across fields of study; Students in the humanities and social sciences perform better on EI tests, particularly empathy and interpersonal skills, than students in STEM. This is due to curricular priorities in interdisciplinary work and reflection in the humanities as opposed to the analytical and technical focus of the STEM fields (Smith & Lee, 2020; Sánchez-Ruiz et al., 2010; Jaeger & Eagan, 2007). For instance, business majors have higher interpersonal EI than science majors (Parker et al., 2005), whereas engineering students score lower on emotional and collaborative measures (Matthews et al., 2002).

Despite global findings indicating that female students generally possess higher emotional intelligence (EI), research conducted in Ethiopia presents inconsistent and often contradictory results regarding both gender differences in EI and its relationship with academic achievement. While some studies have found that male students demonstrate higher EI levels and that EI positively correlates with academic performance (Tekle, Sado, & Damota, 2019; Astatke, 2018), others have found no significant gender-based differences or predictive relationships between EI and academic success (Geathun, 2023; Ahmad, Ali, & Tariq, 2019). Furthermore, although several Ethiopian studies affirm the positive role of EI particularly components such as emotional regulation, empathy, and stress management in enhancing academic outcomes (Asres Abebe, 2017; Kebede, 2018; Alemu & Tadesse, 2019; Desta, 2020), these findings are not consistent across different dimensions of EI or student populations. This inconsistency highlights the need for further investigation into how emotional intelligence is associated with gender and academic achievement, particularly within the sociocultural and institutional context of Ethiopian universities.

Therefore, this study aims to fill these gaps by examining the specific associations between different dimensions of Emotional Intelligence (EI), University engagement, and academic achievement. Specifically, it investigates the status and correlation of university students' emotional intelligence and academic engagement with their academic achievement.

Research Questions

1. What is the status of university students' levels of emotional intelligence and university engagements?
2. Are there any significant mean differences in the scores of emotional intelligence and university engagement across gender and field of studies?
3. How do the components of students' emotional intelligence correlate with university engagement?
4. Do students' emotional intelligence and university engagement significantly predict academic achievements?

Research Design

To examine the relationships among variables, the study employed a cross-sectional correlational design to analyze data collected from university students (Creswell & Creswell, 2018). Focusing on academic achievement, student engagement, and emotional intelligence (EI), the study explored the direction and strength of the correlations between these predictors (Field, 2018). It further assessed participants' levels of university engagement and emotional intelligence and evaluated their predictive power in relation to academic achievement. The cross-sectional design allowed the collection of data at a single point in time from a reasonably large and diverse sample, encompassing students with varying academic achievement histories, fields of study, genders, and cultural backgrounds.

Population and Sample Size

The study population was all first-year students in regular undergraduate

programs at Bahir Dar University during the 2023/24 academic year. The selection of an appropriate sample size is a controversial issue among researchers, with various methodological recommendations in different scientific disciplines (Krejcie & Morgan, 1970; Taherdoost, 2017). In an attempt to be statistically representative, the study employed Cochran's (1977) formula for sample size using an online calculator, a widely accepted method of establishing representative samples when the population is large. In Cochran's sample size formula, a $\pm 5\%$ margin of error and a 95% confidence level are commonly used, meaning the sample estimate is expected to fall within 5 percentage points of the true population value in 95% of repeated studies (Cochran, 1977). Hence, Cochran's sampling formula is applied using a 95% confidence level with a 0.05 margin of error.

According to official records in Bahir Dar University's registrar office, there were 3,902 freshmen pursuing regular undergraduate courses during the second semester of the 2023–2024 academic year. Employing Cochran's formula, the researchers administered survey questionnaires to 350 participants. Of these, 328 responses were obtained, providing a 93.7% response rate. The sample distribution according to academic discipline was as follows: Social Science (35.4%, $n = 116$), Natural Science (15.5%, $n = 51$), Pre-Medicine and Health Science (13.1%, $n = 43$), Engineering and Technology (25.6%, $n = 84$), and Law (9.1%, $n = 30$). Non-response was obtained from 22 participants (6.3%).

The Study variables

The research examines how the gender of students, and their chosen academic field (stream/department), was related to emotional intelligence and university engagement. Secondly, the research measures whether university students' emotional intelligence (self-awareness, motivation, self-regulation, empathy, and interpersonal skills) and university engagement (value of university and belongingness, persistence at university, sense of the value of university courses, social and peer engagement) can predict academic achievement as measured by GPA, measured by 0-4 scale.

Instrument

Emotional intelligence (EI) measures used in this study were adapted from three highly validated scales, each having established reliability and well-defined theoretical roots. Boyatzis, Goleman, and Rhee (2000)'s Emotional Competence Inventory (ECI) is composed of items assessing EI competencies; including self-awareness, self-regulation, motivation, empathy, and social skills. The Schutte Emotional Intelligence Scale (SEIS) of Schutte et al. (1998) contained items measuring emotional perception, self-regulation, interpersonal emotion management, and use of emotions. Finally, the Mayer-Salovey-Caruso (2002) Emotional Intelligence Test (MSCEIT), was referred to for its performance-based assessment of EI abilities, particularly emotional regulation and interpersonal skills. Together, these steps create a multi-measure, integrated evaluation of EI using both self-report (ECI, SEIS) and ability-based (MSCEIT) measures to ensure rigorous measurement. By utilizing these scales together, the study both assessed self-reported EI (ECI, SEIS) and ability-

based EI (MSCEIT constructs) to create a comprehensive evaluation. Reliability tests from prior research confirm each measure's reliability. Moreover, the Cronbach alpha reliability test indicated that the adopted measures of EI dimensions were reliable to a great extent, (Self-awareness= 0.854, motivation= 0.855, self-regulation= 0.855, empathy= 0.856, and social skill= 0.864).

The study used the students' University engagement Scale (Cattellino et al., 2015), which evaluated six aspects of university engagement: relationships with peers (e.g., feeling like a member of a group), professor engagement (e.g., clear expectations), course relevance (e.g., alignment with goals), persistence (e.g., commitment despite alternatives), university relationships (e.g., discussing career plans), and sense of belonging (e.g., valuing university). Nevertheless, neither exploratory nor confirmatory factor analysis approaches significantly loaded items of engagement with professors.

Furthermore, the study employed exploratory factor analysis (EFA) to evaluate the cultural and contextual suitability of the emotional intelligence and university engagement measurement scales. Following confirmation of the factorability of the instruments, confirmatory factor analysis (CFA) was conducted to assess the model fit indices for each scale. Although the adopted university engagement scale initially consisted of six factors, neither the EFA nor the CFA produced significant loadings for the items related to students' engagement with their teachers. Therefore, the study utilized five dimensions, each demonstrating acceptable internal

consistency, as indicated by the following Cronbach's alpha reliability coefficients: peer engagement ($\alpha = 0.861$), perception of capability and persistence ($\alpha = 0.891$), social engagement ($\alpha = 0.866$), value of courses ($\alpha = 0.853$), and value of university and belongingness ($\alpha = 0.860$). A five-point Likert scale was employed to measure both emotional intelligence and university engagement, with the midpoint ("slightly agree") serving as the neutral reference. This midpoint was also used as the expected mean in the analysis.

Data analysis

The study primarily employed quantitative data analysis methodologies, as the stated objectives and planned data collection instruments predominantly utilized quantitative approaches. Subsequent statistical analyses were conducted by using SPSS AMOS software. Descriptive statistics, including range, mean, median, and standard deviation, were utilized to manage missing data, ascertain the nature of the dataset, and verify statistical model assumptions. After confirming that the missing data did not follow a systematic pattern, the study addressed the issue using a multiple imputation method to ensure the robustness of the analysis. In addition, the study tested multicollinearity among the independent variables according to the regression coefficients output, all Tolerance values ranged from 0.359 to 0.743, and all VIF values ranged from 1.346 to 2.786. These values are within acceptable thresholds (Tolerance > 0.2 and VIF < 10). A one-sample t-test was employed to determine the significance of mean differences between sample and population means in emotional intelligence, university academic

engagement, and academic achievement. Independent-sample t-tests were used to analyze gender-based differences in emotional intelligence and university engagement. A one-way analysis of variance (ANOVA) was conducted to test mean differences in emotional intelligence and university engagement across faculties, streams, or disciplines. Pearson correlation coefficients were computed to examine the relationships among the subcomponents of emotional intelligence (EI), university engagement, and GPA. This analysis also helped to check for multicollinearity among the variables. Finally, multiple regression analysis was conducted to assess the extent to which emotional intelligence and university engagement predict academic achievement.

Descriptive Statistics of Emotional Intelligence, University Student Engagement, and Academic Achievement

Table 1 shows the descriptive statistics for the participants' emotional intelligence and its components self-awareness, motivation, empathy, self-regulation, and social skills. The mean score for self-awareness ($M = 3.799$, $SD = 0.660$, $SE = 0.036$) was slightly higher than those for total emotional intelligence ($M = 3.611$, $SD = 0.593$, $SE = 0.033$) and empathy ($M = 3.673$, $SD = 0.726$, $SE = 0.040$). In comparison, self-regulation ($M = 3.234$, $SD = 0.973$, $SE = 0.054$) and social skills ($M = 3.48$, $SD = 0.98$) had somewhat lower mean scores. Additionally, the total emotional intelligence (TOEM) showed the smallest standard error ($SE = 0.033$) and moderate variability ($SD = 0.59$).

Table 1. Descriptive Statistics for Dimensions of Emotional Intelligence

Dimension	M	SD	SE
SA	3.80	0.66	0.04
MO	3.57	0.78	0.04
EM	3.67	0.73	0.04
SR	3.23	0.97	0.05
SO	3.48	0.98	0.05
TOEM	3.61	0.59	0.03

Note. SA = Self-awareness; MO = Motivational emotional intelligence; EM = Empathy; SR = self-regulation; SO = Social skill; TOEM = Total emotional intelligence. M = Mean; SD = Standard Deviation; SE = Standard Error.

The descriptive statistical result also showed the participants score in the dimensions of university engagement as follows; peer engagement (M = 3.54, SD = 0.78), perception of the capability to persist in university (M = 3.79, SD = 1.09), value of university courses (Voc; M = 3.44, SD = 0.75), social engagement (M = 3.46, SD = 0.93), and value of university engagement and belongingness (M = 4.05,

SD = 0.78). In addition, the participants' mean score for overall university engagement was (M=3.71, SD = 0.61); they scored highest on the value of university engagement and belongingness dimensions of engagement, followed by the perception of capability and persistence to university dimensions; however, they scored lowest on the value of university course dimensions.

Table 2. Descriptive Statistics for University Engagement and Its Dimensions

Variable	N	Minimum	Maximum	M	SD
VU	328	1.00	5.00	4.05	0.78
PU	328	1.00	5.00	3.79	1.09
Soc	328	1.00	5.00	3.46	0.93
Voc	328	1.00	5.00	3.44	0.75
PeE	328	1.00	5.00	3.54	0.78
ToUnEng	328	1.57	5.00	3.71	0.61

Note. VUA = value of university engagement and Belongingness; Pou = Perception of the Capability to Persist in the University; Soc = Social Engagement; Voc = Value of University Courses; PeE = Peer Engagement; ToUni.eng = Total University Engagement

The Status of University Students' Emotional Intelligence and Academic Engagement

The mean scores of the five emotional intelligence dimensions and the total emotional intelligence were compared to a test value of 3 (interpreted as "slightly agree") using one-sample t-tests. As shown in Table 3, all emotional intelligence domains had significantly higher mean scores than the test value, $p < .001$. The corresponding effect sizes were moderate to large, with Cohen's d ranging from 0.25 to 1.36, indicating that the differences were not only statistically significant but also practically meaningful.

Among the emotional intelligence components, Self-Awareness Emotional Intelligence (SA) showed the highest mean difference from the test value ($M = 3.92$, $SD = 0.68$), $t(327) = 24.68$, $p < .001$, 95% CI [0.85, 1.00], $d = 1.36$. Similarly, students' Total Emotional Intelligence (TOEI) was significantly higher than the test value ($M = 3.59$, $SD = 0.59$), $t(327) = 18.29$, $p < .001$, 95% CI [0.53, 0.66], $d = 1.01$.

The other subscales Motivation (Mo), Empathy (Em), Self-Regulation (SR), and Social Skills (SO) also showed statistically significant mean differences from the test value ($p < .001$). Their mean scores ranged from 3.21 to 3.70, and Cohen's d values ranged from 0.25 to 0.93, suggesting varying but notable levels of emotional intelligence across different domains.

Hence, the results of the one-sample t-test suggest that participants possess emotional intelligence competencies that are significantly higher than the average.

The mean scores of students on the University Engagement Scales were compared to a test value of 3, representing amid point of response level, using a series of one-sample t-tests. The results showed that students' university engagement levels were significantly higher than the scale mid-punts across all subscales ($Ps < .001$). Among the comments, the highest mean was observed in the Value of University (VU) subscale ($M = 4.05$, $SD = 0.78$), with a t-value of 24.42 ($df = 327$), $p < .001$, and a large effect size (Cohen's $d = 1.35$, 95% CI [1.20, 1.50]). Similarly, the Total University Engagement score (ToUE) was significantly greater than the neutral point ($M = 3.71$, $SD = 0.61$), $t(327) = 21.06$, $p < .001$, also with a large effect size ($d = 1.16$, 95% CI [1.02, 1.30]).

Other components of university engagement also showed significantly higher than the test value, with moderate to large effect sizes. These included perceptions of capability and to persist in University ($M = 3.79$, $SD = 1.09$), $t(327) = 13.03$, $p < .001$, $d = 0.72$, 95% CI [0.60, 0.84]; Social Engagement ($M = 3.46$, $SD = 0.93$), $t(327) = 8.88$, $p < .001$, $d = 0.49$, 95% CI [0.38, 0.60]; value of university courses ($M = 3.44$, $SD = 0.75$), $t(327) = 10.66$, $p < .001$, $d = 0.59$, 95% CI [0.47, 0.71]; and peer engagement ($M = 3.54$,

SD = 0.78), $t(327) = 12.64$, $p < .001$, $d = 0.70$, 95% CI [0.58, 0.82].

Based on the above results, the participants' mean scores in overall university engagement and across

subscales were significantly higher than the instrument's neutral mean. This suggests that the participants demonstrated strong university engagement, which was demonstrated across components.

Table 3. One-Sample t-Test Results Comparing Mean Scores to the Test Value

Variable	M	SD	t	df	p	Mean Diff	95% CI for Mean Diff	Cohen's d
SA	3.92	0.68	24.68	327	< .001	0.92	[0.85, 1.00]	1.36
MO	3.57	0.78	13.32	327	< .001	0.57	[0.49, 0.66]	0.74
EM	3.53	0.67	14.24	327	< .001	0.53	[0.46, 0.60]	0.79
SR	3.21	0.83	4.55	327	< .001	0.21	[0.12, 0.30]	0.25
SO	3.70	0.75	16.91	327	< .001	0.70	[0.62, 0.78]	0.93
TO	3.59	0.59	18.29	327	< .001	0.59	[0.53, 0.66]	1.01

Notes: M = sample mean, SD = standard deviation, t = t-value, df = degrees of freedom, p = significance level, CI = confidence interval, Cohen's d = effect size using sample SD. Significance is two-tailed, and p-values are reported in APA style (e.g., $p < .001$ instead of .000); SA = Self-Awareness Emotional Intelligence; MO = Motivation Emotional Intelligence; EM = Empathy Emotional Intelligence; SR = Self-Regulation Emotional Intelligence; SO = Social Emotional Intelligence; TOEI = Total Emotional Intelligence.

Table 4. Results of One-Sample t-tests Comparing university engagement Constructs to the Test Value

Variable	M	SD	t	df	p	Mean Diff	95% CI of Mean Diff	Cohen's d
VU	4.05	0.78	24.42	327	< .001	1.05	[0.97, 1.14]	1.35
Pou	3.79	1.09	13.03	327	< .001	0.79	[0.67, 0.91]	0.72
Soc	3.46	0.93	8.88	327	< .001	0.46	[0.35, 0.56]	0.49
Voc	3.44	0.75	10.66	327	< .001	0.44	[0.36, 0.52]	0.59
PeEn	3.54	0.78	12.64	327	< .001	0.54	[0.46, 0.63]	0.70
ToUnEn	3.71	0.61	21.06	327	< .001	0.71	[0.65, 0.78]	1.16

Note. M = Mean; SD = Standard Deviation; t = t statistic; df = degrees of freedom; p = significance value; d = Cohen's d; CI = Confidence Interval. All tests used a test value of 3. Cohen's d values are based on sample SD. VU = Value of University belongingness; Pou = perceptions of capability and to persist in University; Soc = Social Engagement; Voc = Value of University courses; PeE = Peer Emotional Engagement; ToUnEng = Total university Engagement;

Gender Differences in Emotional Intelligence and University Engagement among Students

Gender differences in emotional intelligence (EI) across several domains were investigated using an independent samples t-test. The findings showed no significant differences between males ($n =$

211) and females ($n = 117$) in terms of total emotional intelligence, $t(326) = 0.84$, $p = .400$, $d = 0.10$, 95% CI $[-0.13, 0.33]$; empathy, $t(326) = 0.59$, $p = .559$, $d = 0.07$, 95% CI $[-0.16, 0.30]$; self-regulation, $t(326) = -0.37$, $p = .711$, $d = -0.04$, 95% CI $[-0.27, 0.19]$; or self-awareness, $t(326) = 0.68$, $p = .500$, $d = 0.08$, 95% CI $[-0.15, 0.31]$. On the other hand, a statistically

significant difference was observed in the Social Skill (SOEI), with females ($M = 3.87$, $SD = 0.71$) scoring higher than males ($M = 3.62$, $SD = 0.74$); $t(326) = 2.95$, $p = .003$, $d = 0.35$, 95% CI $[0.11, 0.58]$. A small to medium effect size was indicated by the mean difference of 0.25, 95% CI $[0.08, 0.42]$.

Table 5: Independent Samples t-Test Comparing Emotional Intelligence Dimensions by Gender

Variable	Gender	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Mean Diff	95% CI	Cohen's <i>d</i> [95% CI]
SA	Female	117	3.96	0.69	0.68	326	.500	0.05	[-0.10, 0.20]	0.08 [-0.15, 0.31]
	Male	211	3.91	0.64						
MO	Female	117	3.59	0.81	0.24	326	.814	0.02	[-0.16, 0.20]	0.03 [-0.20, 0.26]
	Male	211	3.56	0.76						
EM	Female	117	3.57	0.62	0.59	326	.559	0.05	[-0.11, 0.20]	0.07 [-0.16, 0.30]
	Male	211	3.52	0.69						
SR	Female	117	3.19	0.83	-0.37	326	.711	-0.04	[-0.23, 0.15]	-0.04 [-0.27, 0.19]
	Male	211	3.23	0.83						
SO	Female	117	3.87	0.71	2.95*	326	.003	0.25	[0.08, 0.42]	0.35 [0.11, 0.58]
	Male	211	3.62	0.74						
TOEI	Female	117	3.64	0.55	0.84	326	.400	0.06	[-0.08, 0.19]	0.10 [-0.13, 0.33]
	Male	211	3.58	0.61						

Note. SAEI = Self-Awareness Emotional Intelligence; MOEI = Motivation Emotional Intelligence; EMEI = Empathy Emotional Intelligence; SREI = self-regulation Emotional Intelligence; SOEI = Self-Regulation Emotional Intelligence; TOEI = Total Emotional Intelligence. $P < .05$.

Significant gender differences were found by independent samples t-tests in a number of university engagement domains among students ($N = 328$). Compared to male students ($M = 3.98$, $SD = 0.78$), female students reported significantly higher levels of value of university engagement and belongingness ($M = 4.17$, $SD = 0.79$), with a small effect size ($d = 0.24$), $t(326) = 2.07$, $p = .040$. Likewise, women scored

considerably higher than men on the Perception of the capability to persist in the university scale ($M = 4.08$, $SD = 1.09$) compared to men ($M = 3.63$, $SD = 1.07$); $t(326) = 3.58$, $p < .001$, with a moderate effect size ($d = 0.42$). Additionally, $t(326) = 2.13$, $p = .034$, $d = 0.25$ showed that female students had higher levels of social engagement ($M = 3.60$, $SD = 0.86$) than male students ($M = 3.37$, $SD = 0.96$).

Furthermore, the Total University Engagement score was significantly higher for females ($M = 3.85$, $SD = 0.66$) than for males ($M = 3.63$, $SD = 0.58$); $t(317) = 3.02$, $p = .003$, $d = 0.35$. However, neither

the Value of University Courses ($t(326) = 1.13$, $p = .261$, $d = 0.13$) nor Peer Engagement ($t(326) = 0.07$, $p = .943$, $d = 0.01$) showed any discernible gender differences.

Table 6. Independent Samples t-tests for Engagement Dimensions by Gender

Variable	Gender	n	M	SD	t	df	p	Mean Diff	95% CI	Cohen's d [95% CI]
VUAEng	Female	113	4.17	0.79	2.06	317	.040	0.19	[0.01, 0.37]	0.24 [0.01, 0.47]
	Male	206	3.98	0.78						
PouEng	Female	113	4.08	1.09	3.58	317	<.001	0.45	[0.20, 0.70]	0.42 [0.19, 0.65]
	Male	206	3.63	1.07						
SocEng	Female	113	3.60	0.86	2.13	317	.034	0.23	[0.02, 0.44]	0.25 [0.02, 0.48]
	Male	206	3.37	0.96						
VocEng	Female	113	3.50	0.76	1.13	317	.261	0.10	[-0.07, 0.27]	0.13 [-0.10, 0.36]
	Male	206	3.40	0.74						
PeEn	Female	113	3.54	0.82	0.07	317	.943	0.01	[-0.17, 0.18]	0.01 [-0.22, 0.24]
	Male	206	3.54	0.74						
ToUniEng	Female	113	3.85	0.66	3.02	317	.003	0.21	[0.07, 0.35]	0.35 [0.12, 0.58]
	Male	206	3.63	0.58						

Note. Value of University Engagement and Belongingness; Pou = Perception of the Capability to Persist in the University; Soc = Social Engagement; Voc = Value of University Courses; PeE = Peer Engagement; ToUni.eng = Total University Engagement; Equal variances assumed for all tests (Levene's $p > .05$ for all variables except ToUniEng, $p = .094$). Effect sizes (Cohen's d) use pooled standard deviations.

Mean Differences in Emotional Intelligence and University Engagement across Academic Streams

The ANOVA result verified that there were no statistically significant mean differences across colleges in the emotional intelligence dimensions. Thus, no significant differences were observed for total emotional intelligence (ToEI),

$F(5, 318) = 1.52$, $p = .184$; self-regulation (SR), $F(5, 318) = 0.93$, $p = .464$; motivation (MO), $F(5, 318) = 1.38$, $p = .230$; empathy (Em), $F(5, 318) = 2.04$, $p = .072$; or social skills (SO), $F(5, 318) = 1.43$, $p = .212$). However, the ANOVA showed that the self-awareness aspects of emotional intelligence varied significantly on average across study colleges. $F(5, 318) = 3.784$, $p = .005$ $F(5, 318) = 3.784$, $p = .005$ $F(5, 318) = 3.784$, $p = .005$.

Nevertheless, the post hoc analysis has only revealed statistically significant differences between engineering and

technology college students and law college students on the self-awareness component of emotional intelligence.

Table 7. One-Way Analysis of Variance Results for the EI and its dimension across the field of study

Dependent Variable	Source	SS	df	MS	F	p
SA	Between	6.424	5	1.285	3.024	.011
	Within	135.092	318	0.425		
	Total	141.516	323			
Mo	Between	4.136	5	0.827	1.383	.230
	Within	190.182	318	0.598		
	Total	194.318	323			
EM	Between	4.459	5	0.892	2.043	.072
	Within	138.822	318	0.437		
	Total	143.281	323			
SR	Between	3.151	5	0.630	0.926	.464
	Within	216.428	318	0.681		
	Total	219.579	323			
SO	Between	3.888	5	0.778	1.433	.212
	Within	172.497	318	0.542		
	Total	176.385	323			
TOEI	Between	2.509	5	0.502	1.518	.184
	Within	105.116	318	0.331		
	Total	107.625	323			

Note. SS = Sum of Squares; df = degrees of freedom; MS = Mean Square. SAEI = Self-awareness, MO = motivation, Em = Empathy, SR = Self-Regulation, SO = Social Skills, ToEI = Total Emotional Intelligence

A one-way ANOVA in Table 8 indicated that there were differences between streams for the value of university and belongingness ($F(5, 318) = 4.854$, $p < .001$). Post-hoc Scheffé tests indicated that Engineering and Technology students scored higher than Other Social ($p = .032$) and Law ($p = .005$) students. Likewise, perceived capability and persistence also varied significantly ($F(5, 318) = 7.906$, $p < .001$), with Pre-medicine and health students having scored lower than Other Social ($p = .041$), and Engineering and Technology students having scored higher than "Law" and "Other Natural" ($p = .003$, $p = .006$).

University course values also differed ($F(5, 318) = 5.580$, $p < .001$), with Other Natural students scoring lower than Pre-medicine and health ($p = .025$) and "Law" ($p = .001$) students, and Engineering and Technology students scoring lower than "Law" students. No differences were significant for social ($F(5, 318) = 0.382$, $p = .861$) and peer involvement ($F(5, 318) = 0.406$, $p = .845$). However, overall university engagement differed ($F(5, 318) = 5.726$, $p < .001$), with students in Engineering and Technology scoring higher than Pre-medicine ($p = .026$) and Law ($p = .001$) students.

The Relationship Between University Students' Emotional Intelligence, Engagement, and Academic Achievement

The findings showed that a number of factors, such as self-awareness ($r = .15$, $p < .01$), empathy ($r = .15$, $p < .01$), social skills (SO; $r = .12$, $p < .05$), total emotional intelligence ($r = .15$, $p < .01$), the value of university engagement & belongingness ($r = .12$, $p < .05$), the value of university courses ($r = .23$, $p < .01$), and total

university engagement ($r = .19$, $p < .01$) were all significantly positive correlations with GPA ($p < .05$ or $p < .01$). GPA did not, however, significantly correlate with motivation ($r = .01$, $p > .05$), self-regulation (SR; $r = .09$, $p > .05$), perception of persistence ability ($r = .09$, $p > .05$), social engagement ($r = .04$, $p > .05$), or peer engagement ($r = .04$, $p > .05$). Self-awareness, empathy, and total emotional intelligence were explained GPA, next to the value of university courses and total university engagement.

Table 8. Analysis of Variance (ANOVA) Results for Engagement Measures

Measure	Source	SS	df	MS	F	p
VUA	Between Groups	14.021	5	2.804	4.854	< .001
	Within Groups	183.722	318	0.578		
	Total	197.743	323			
Pou	Between Groups	42.679	5	8.536	7.906	< .001
	Within Groups	343.348	318	1.080		
	Total	386.027	323			
Soc	Between Groups	1.669	5	0.334	0.382	.861
	Within Groups	277.734	318	0.873		
	Total	279.403	323			
Voc	Between Groups	14.692	5	2.938	5.580	< .001
	Within Groups	167.450	318	0.527		
	Total	182.142	323			
PeE	Between Groups	1.470	5	0.294	0.406	.845
	Within Groups	230.399	318	0.725		
	Total	231.869	323			
ToUniEng	Between Groups	10.067	5	2.013	5.726	< .001
	Within Groups	111.808	318	0.352		
	Total	121.875	323			

Note. VUA = Value of University Engagement and Belongingness; Pou = Perception of the Capability to Persist in the University; Soc = Social Engagement; Voc = Value of University Courses; PeE = Peer Engagement; ToUniEng = Total University Engagement.

Strong positive correlations were found between students' total university engagement and dimensions of value of university and belongingness ($r = .84$, $p < .01$), value of university courses ($r = .78$, $p < .01$), and perception of capability to persist ($r = .63$, $p < .01$). This implies that students' perceptions of their own

persistence and the value they give for university education play a significant role in determining their overall level of engagement. Similarly, peer engagement and social engagement also showed a moderate correlation with total university engagement scores ($r = .49$, $p < .01$).

The relationship between total university engagement ($r = .39$, $p < .01$) and total EI was moderate. Participants' university engagement scores were also significantly correlated with EI components particularly with self-awareness ($r = .41$, $p < .01$) and motivation ($r = .42$, $p < .01$). However, there was no significant correlation between participants' university engagement scores and self-regulation (e.g., value of university and

belongingness; $r = .10$, $p > .05$). Interestingly, a number of the relationships were not significant. GPA ($r = .09$, $p > .05$) and Value of University Engagement (VUA; $r = .10$, $p > .05$) had no relationship with self-regulation (SR). Likewise, there were weak or non-significant relationships between Pou and Social Engagement (Soc) and Peer Engagement (PeEn) ($r = .02$ and $r = .11$, respectively).

Table 9. Bivariate Pearson Correlations among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. GPA	—												
2. SA	.15**	—											
3. MO	.01	.52**	—										
4. EM	.15**	.72**	.50**	—									
5. SR	.09	.52**	.42**	.54**	—								
6. SO	.12*	.58**	.55**	.62**	.47**	—							
7. ToEI	.15**	.82**	.71**	.84**	.72**	.76**	—						
8. VUA	.12*	.33**	.34**	.24**	.10	.23**	.28**	—					
9. Pou	.09	.11*	.13*	.03	-.07	.02	.01	.48**	—				
10. Soc	.04	.32**	.33**	.24**	.32**	.32**	.36**	.26**	.02	—			
11. Voc	.23**	.40**	.40**	.46**	.34**	.38**	.47**	.47**	.21**	.46**	—		
12. PeEn	.04	.30**	.36**	.35**	.26**	.32**	.42**	.41**	.11*	.49**	.49**	—	
13. ToEng	.19**	.41**	.42**	.35**	.22**	.33**	.39**	.84**	.63**	.52**	.78**	.52**	—

Note. * $p < .05$. ** $p < .01$ (two-tailed). Variable abbreviations: GPA = Grade Point Average; SA = Self-awareness; MO = Motivation; EM = Empathic; SR = self-regulated; SO = social skill; ToEI = total emotional intelligence; VUA = Value of university engagement and belongingness Pou = Perception of the capability to persist; Voc = Value of university courses; Epe = Peer engagement; Soc = Social engagement. Rotation converged in 6 iterations. ToUnEng = total university engagement; SA = Self-awareness, Mo = Motivation, SR = Self-regulation, EM = Empathy, SO = Social skills

The Association between Students' Emotional Intelligence and University Engagement and Their Academic Achievement

As displayed in Table 10 the multiple regression analysis's findings demonstrated that the overall model explained roughly 8.9% of the variance in GPA ($R^2 = .089$) and significantly predicted GPA, $F(10,317) = 3.088$, $p = .001$. However, after

controlling for the number of predictors, the adjusted R^2 value (.060) showed that only 6.0% of the variance was explained. Only two of the predictors—the value of university courses component of university engagement and the motivation component of EI—were statistically significant predictors of GPA. On the other hand, there was a significant positive correlation between the value of university courses and GPA ($\beta = .258$, $t(317) = 3.539$, $p < .001$). Higher GPAs were typically attained by students who thought their classes were more valuable.

Surprisingly, though, motivation and GPA had a significant negative relationship ($\beta = -.168$, $t(317) = -2.384$, $p = .018$), suggesting that lower GPA scores were linked to higher motivation levels. Furthermore, there was no significant correlation between GPA and the remaining predictors of emotional intelligence (self-awareness, empathy, self-regulation, and social skills) or university engagement (value of University Engagement and Belongingness; Pou = Perception of the Capability to Persist in the university and belongings; Social Engagement; Peer engagement) ($ps > .05$).

Table 10: Multiple Regression Analysis Predicting GPA from Emotional intelligence and University engagement components

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Constant	2.995	0.150		19.910	.000
SA	0.055	0.047	.100	1.178	.240
MO	-0.080	0.034	-.168	-2.384	.018
EM	0.009	0.049	.017	0.187	.852
SR	0.007	0.031	.016	0.230	.818
SO	0.039	0.037	.079	1.052	.294
VUA	0.015	0.034	.032	0.439	.661
Pou	0.015	0.021	.043	0.689	.492
Soc	-0.024	0.027	-.061	-0.909	.364
Voc	0.129	0.036	.258	3.539	.000
PeEn	-0.040	0.033	-.083	-1.211	.227

Note. SA= self-awareness; MO= motivation; SR= self-regulated; EM=emphatic; So= social Vua = Value of University Engagement and Belongingness; Pou = Perception of the Capability to Persist in the University; Soc = Social Engagement; Voc = Value of University Courses; PeEn = Peer Engagement Dependent variable: GPA. $R^2 = .089$, Adjusted $R^2 = .060$, $F(10, 317) = 3.088$, $p = .001$.

Discussion

University students scored significantly above average on all emotional intelligence dimensions self-awareness, motivation, empathy, self-regulation, and social skills—with mean scores ranging from 3.21 to 3.92. The results, supported by significant t-tests and moderate to large

effect sizes, indicate a moderately high level of emotional intelligence overall. These findings are consistent with prior research showing that university students' academic and social experiences enhance their emotional intelligence (MacCann et al., 2020; Sánchez-Ruiz et al., 2010). This is further corroborated by Asres Abebe

(2017) and Kebede (2018), who found that university students in Ethiopia generally possess moderate to high EI levels.

Furthermore, the results show that the participants' self-awareness score was comparatively higher than the other emotional intelligence dimensions, which is consistent with Schutte et al. (2002). Research has found that self-awareness is predictive of self-reflective behavior and better decision-making in academic settings (Goleman, 1995). University students also develop a greater degree of self-awareness during their academic careers, which is crucial for managing their academic and interpersonal relationships.

Similarly, the results showed that the participants' empathy and social skill scores were higher than the expected mean. This is because university students are required to collaborate and work in groups more often for their coursework, which helps them develop their social skills and empathy (Extremiera et al., 2018). This collaborative experience fosters peer learning, which is associated with improved cognitive outcomes (Johnson & Johnson, 2009). This pattern aligns with findings by Alemu and Tadesse (2019), who emphasized that empathy and self-awareness are critical predictors of academic success among Ethiopian secondary school students.

According to the current findings, participants demonstrated a high level of university engagement, particularly in the subscales measuring the value of university engagement ($d = 1.35$) and belongingness ($d = 0.72$). These large and moderate-to-large effect sizes indicate that

students place significant importance on attending university and pursuing their academic goals. These results align with the expectancy-value theory (Eccles & Wigfield, 2002), which posits that students are more engaged when they perceive higher education as valuable. Kebede (2018) similarly observed that EI enhanced university students' academic engagement in Ethiopia, especially in motivation and perceived course value.

Regarding gender differences, there are no significant gender differences in total emotional intelligence and its dimensions of self-awareness, motivation, self-regulation, empathy, and social skills. This is consistent with Joseph and Newman (2010), a meta-analysis which found that performance-based assessments of emotional intelligence show negligible differences between men and women. It is also further supported by Martins et al. (2010), who in their thorough meta-analysis disclosed only minor gender effects across EI domains. Ethiopian studies echo these findings: Geathun (2023) found no significant gender-based differences in EI or its predictive value for academic performance.

However, the finding demonstrated that female students significantly scored higher on the social skills dimension of the EI scale than men. This result aligns with earlier studies that showed women perform better in interpersonal emotional competencies (Brackett et al., 2004), perhaps as a result of socialization processes that promote women's increased emotional expressiveness and interpersonal sensitivity. Furthermore, Cabello et al. (2016) demonstrated that women typically perform better than men

on social-emotional tasks, especially those that call for empathy and social interaction. Similarly, Astatke (2018) reported that Ethiopian female students had stronger interpersonal and emotional skills compared to their male counterparts, specifically in empathy and social sensitivity.

When it came to university engagement, the gender gap was more noticeable, with women reporting higher levels of total university engagement, social engagement, perception of persistence, and value of university and belongingness. These results support research that indicates female students frequently exhibit higher levels of social and academic engagement (Tinto, 1993; Pascarella & Terenzini, 2005). However, there is no gender difference in the value of university courses, because as Astin (1993) asserted, course values are linked to their particular fields of study rather than gender factors.

According to one-way ANOVA results, the majority of EI facets did not differ significantly across disciplines, indicating that EI traits are stable across academic fields (Mayer et al., 2008; Brackett et al., 2011). On the other hand, law students scored higher on self-awareness compared to engineering students ($F(5,318) = 3.784$, $p = .005$). This difference arises from the fact that students studying law tend to be more introspective than those in technical fields like engineering and technology that prioritize mechanical and technical issues (Schutte et al., 2013). Similar disciplinary variation in EI was observed by Tekle et al. (2019), who found that students in social science and law disciplines exhibited higher EI levels than those in STEM programs.

On the other hand, participants' levels of university engagement varied by discipline. Due to the structured and applied nature of their field, engineering, and technology students reported higher levels of engagement in terms of course value, perceived capability for persistence, and perceived value of university. This finding aligns with Lizzio et al. (2002), who argued that students in engineering and technology fields exhibit greater engagement because of the structured nature of their curricula.

Similarly, Kuh et al. (2008) found that engineering and technology students were more engaged in collaborative learning compared to those in the humanities and social sciences. However, premedical, health, and law students demonstrated lower overall university engagement scores, consistent with previous research indicating that medical students are less engaged in university activities due to high academic workloads and stress (Dyrbye et al., 2010). Likewise, Lizzio et al. (2002) found that students in high-pressure disciplines reported lower engagement in non-academic activities. The findings confirmed that there were no significant differences in the social and peer engagement domains of university engagement across disciplines. This result is inconsistent with previous research by Umbach and Wawrzynski (2005), Braxton et al. (2013), and Holland et al. (2019), who found that students in social sciences and humanities reported higher peer engagement than those in STEM fields. Regarding differences in university engagement components across fields of study, factors beyond the nature of the fields themselves such as students' prior

preparation for their chosen disciplines may also contribute to these differences.

In accordance with regression analysis, a small but significant amount of the variance in GPA was explained by the combined model ($R^2 = .089$, $p = .001$). Among those variables, participants' scores on the perceived value of courses significantly positively predicted their GPA ($\beta = .258$, $p < .001$), which is consistent with studies linking students' appraisal of a course's value to academic performance (Pekrun et al., 2011). Similar associations between EI, perceived course value, and GPA were reported by Desta (2020), who emphasized stress management and motivation as key mediators in the EI-academic performance relationship.

Interestingly, the findings showed a significant negative relationship between the motivation component of emotional intelligence (EI) and participants' GPA ($\beta = -.168$, $p = .018$). This outcome contrasts with the work of Pintrich (2003) and Abdullah et al. (2004), who found that motivation positively influences academic performance. However, there are theoretical and empirical findings that support the negative assertion between motivation and academic achievements; one factor is that excessive motivation can lead to over-commitment and elevated stress levels, which may adversely affect academic performance (Schunk & DiBenedetto, 2020). According to the value-expectancy model, this inverse relationship is further explained by students' misperceptions of their own competencies. Students who overestimate their abilities may demonstrate high motivation to excel but underestimate the

academic challenges they face, resulting in inadequate preparation for exams and other academic responsibilities (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). This discrepancy between perceived competence and actual readiness often leads to poorer academic outcomes despite strong motivational drives.

Additionally, students who place a high value on academic success and are highly motivated may experience increased exam and academic anxiety. This heightened anxiety, often driven by fear of failure or performance pressure, can interfere with concentration and test-taking, ultimately hindering academic achievement (Putwain & Symes, 2011; Zeidner, 1998). Furthermore, motivation may be diverted toward non-academic pursuits such as sports, business, or social media. When students prioritize these alternative activities, their academic engagement and achievement can suffer (Wigfield & Eccles, 2000).

Finally, even students with high motivation may lack the necessary academic skills and strategies to effectively translate their motivation into academic achievement. Without effective study habits and self-regulation, motivated students may misallocate their energy and time, engaging in unproductive efforts that do not contribute to academic goals (Eccles & Wigfield, 2002; Pintrich, 2004). Thus, the findings of this study and the above theoretical explanations give clues about why motivation does not always correlate positively with academic achievement and highlight the complex interplay between motivation and academic achievement.

The results of the multiple regression analysis revealed that, except for the motivation factor of emotional intelligence (EI), none of the other EI factors showed a statistically significant correlation with academic achievement they explained 8.9% of the variance in GPA ($R^2 = .089$) and significantly predicted GPA, $F(10,317) = 3.088$, $p = .001$. However, among the components of EI and university engagement only two components; motivation from EI and value of university from university engagement significantly associated with academic achievements. Besides to MR, the Pearson correlation analysis confirmed that self-awareness, empathy, social skills, and total emotional intelligence significantly and positively predicted students' academic achievement. This finding aligns with Schutte et al. (1998), who reported that empathy and social skills positively predicted academic performance. Likewise, Ethiopian studies by Alemu and Tadesse (2019), as well as Asres Abebe (2017), support the significant positive role of EI components especially empathy, self-awareness, and regulation in academic achievement.

Similarly, the multiple regression analysis revealed that all constructs of university engagement value of university and belongingness, peer and social engagement, perception of capability, and persistence were not significantly associated with academic achievement, except for the perception of value of university courses. The Pearson correlation analysis revealed that the value of university and belongingness was significantly and weakly correlated with academic success, which accords with

Walton and Cohen (2011), who found that a sense of belonging enhances success.

However, in contrast to earlier studies, peer and social engagements, perceived ability, and persistence in university were insignificantly correlated with academic achievement. For instance, Tinto and Astin (1993) uncovered how peer interactions are a crucial element in student success, while Dweck et al. (2014) determined that academic success is predicted by students' perceived ability and persistence. A potential explanation for the lack of association between university engagement and academic achievement could be that students do not utilize this asset for their academia. This discrepancy may also reflect patterns observed by Geathun (2023), who found that while EI predicted GPA, engagement factors did not have a strong direct relationship with academic achievement among Ethiopian university students.

Conclusions

The findings reveal that university students score moderately high in emotional intelligence (EI), with mean scores well above the average on all assessed dimensions, and self-awareness being the most prevalent. The findings align with earlier research that reveals that university life is influence in the development of EI through academic and social engagement. High empathy and social skills scores likely reflect the interpersonal gains facilitated by collaborative learning environments. For university engagement, students reported a high perceived value of university and belongingness which signals a strong institutional connection,

suggesting close relationships with their institutions.

While there were no significant gender differences in overall emotional intelligence (EI), female students did score considerably in social skill components. Regarding university activities, women reported considerably higher levels of social engagement, persistence in university, and the value of university and belongingness. Naturally, there were no gender disparities in perceived value, indicating that this aspect of involvement is gender-neutral.

Self-awareness was the only emotional intelligence (EI) dimension that showed significant variation across disciplines; law students outperformed their engineering counterparts in this regard, possibly as a result of the greater emphasis placed on reflective practices in legal education. Students in engineering and technology, on the other hand, reported higher levels of academic engagement, which may be related to the discipline-specific and application-focused nature of their courses. On the other hand, students studying law, medicine, and health sciences showed lower levels of involvement, which could be related to increased academic stress. Peer and social interaction did not significantly differ between disciplines.

It was shown that there was little correlation between academic achievement and emotional intelligence (EI). Only two significant predictors of academic achievement (GPA) were found using regression analysis: perceived course value, which was positively correlated, and motivation, which was negatively correlated. Academic demands may have a

negative impact on intrinsic drive, as seen by the inverse link between motivation and GPA. A correlation study showed positive relationships between GPA and self-awareness, empathy, social skills, and overall EI, even though most EI components did not show up as significant predictors of GPA in the regression models.

As the multiple regression result revealed students' emotional intelligence and university engagement significantly predict academic achievement. Among the university engagement variables, only perceived course value emerged as a significant predictor of academic achievement. Other dimensions university belongingness, social engagement, perceived capability, and persistence did not demonstrate significant correlations with GPA. These results imply that university engagement may not directly influence academic achievement in this particular context. Students and teachers may not have used university engagement in a way that improved academic achievement, which could be one reason for the non-significant relationship between university engagement and academic achievement.

Furthermore, contrary to the findings of previous studies, the minimal predictive power of university engagement and emotional intelligence for students' academic achievement may be attributed to contextual factors. This suggests that education systems, universities, and student support services may not have adequately integrated emotional intelligence and university engagement into curricula, extracurricular activities, and assessment practices in ways that

effectively enhance students' academic achievement.

Finally, this study acknowledges that it relied on self-report and quantitative methods. Due to the inherent limitations of these approaches, the study was unable to fully explain the unexpected negative associations between the motivational dimensions of emotional intelligence and academic achievement.

Recommendation

Based on the above findings, this study offers the following recommendations for researchers, psychologists, and education professionals.

The findings confirmed that, although the effect was minimal, most domains of students' emotional intelligence and university engagement were positively associated with their academic achievements. Therefore, universities, academic units, and instructors should pay due attention to—and actively foster—students' emotional intelligence and engagement.

Although previous studies have shown that university engagement positively predicts students' academic achievement, this study reveals that its role is minimal. This may be because students channel their engagement into non-academic activities. Therefore, universities, teachers, and university guidance and counsellors should help students to direct their engagement toward academic goals as well.

The findings confirmed that male students reported lower engagement than females in most areas of university engagement. This highlights the need for university administrations, guidance counselors, and

teachers to develop tailored intervention programs that encourage fair participation among both male and female students.

Although among the five identified aspects of university engagement, the perceived value of courses emerged as the strongest predictor of academic achievement, the descriptive findings reveal that students score relatively low on this dimension of engagement. Thus, universities should review and revise the content and structure of freshman programs to ensure they are relevant, engaging, and aligned with students' interests and career aspirations. Furthermore, the Ministry of Education and universities should actively involve students in curriculum development and provide flexible academic pathways that allow for personalized course selection. Such strategies can significantly boost students' motivation, engagement, and academic achievement.

Despite extensive literature suggesting that emotional intelligence (EI) positively influences academic achievement, the present findings indicate that the overall direct effect of EI on academic performance is insignificant. This discrepancy raises important questions for education experts and policymakers. It is essential to critically examine whether our educational systems including curricula, teaching methods, and assessment practices are designed to cultivate and evaluate emotional intelligence competencies. Given that EI is recognized as one of the key 21st-century skills, it is crucial to ensure that educational environments not only support its development but also reflect its relevance in academic evaluation and student success.

Finally, the study recommends that future research investigate the extent to which educational systems foster students' emotional intelligence and university engagement in a manner that supports academic achievement. Such investigations should consider a comprehensive evaluation of curricular content, pedagogical practices, assessment strategies, and other relevant institutional structures.

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