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AKADÉMIAI KIADÓ

# Levels of emotional intelligence and student engagement in Eritrean college students

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## RESEARCH ARTICLE

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**ABSTRACT**

The study sought to explore the levels of emotional intelligence and academic engagement among college students, which has not been extensively represented in the existing literature within the Eritrean higher educational context. The study comprised a sample of 119 senior Asmara College of Education students selected through the convenience sampling strategy. The Self-Report Emotional Intelligence Test and Student Engagement Scale were employed to assess the levels of emotional intelligence and student engagement of the participants. Frequency distribution, Pearson-moment correlation, and independent sample *t*-tests were conducted for data analysis. A significance level of 0.05 was selected to determine statistical significance when testing the relationships of emotional intelligence and engagement with demographic variables. The findings of the study revealed that most students exhibited moderate to high levels of emotional intelligence and academic engagement. The independent sample *t*-tests indicated that female students tended to have higher levels of emotional intelligence and also reported higher behavioral engagement compared to male students. Regarding the program of study, students from the Department of Psychology and Educational Administration showed higher levels of emotional intelligence than Science education students. Conversely, Science Education students displayed greater cognitive engagement compared to those in Psychology and Educational Administration. Age was found to have a significant association with academic engagement, with older students demonstrating higher levels compared to

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younger students. However, the Pearson product-moment results demonstrated that significant emotional intelligence scores did not significantly differ across different age groups. The findings are expected to offer significant insights into student engagement and emotional intelligence within the context of higher education. Moreover, this study can offer practical guidance for college communities on fostering students' levels of engagement in learning and emotional skills.

**KEYWORDS**

emotional intelligence, academic engagement, demographics, college students

## INTRODUCTION

Higher education students have long been acknowledged as vital drivers of the global knowledge-based economy in the 21st century. They are often regarded as a potent tool wielded by educational policymakers to address diverse social and economic development (Aramaki, Sedghgooyan, Lashgari, & Nejad Rasoul, 2023) goals. The significance of skilled graduates from higher education holds particular importance in developing countries, as these nations predominantly rely on their human capital to achieve their national developmental objectives through the provision of quality education (Lanre & Abosede, 2018). Numerous global researchers assert that quality education cannot be achieved without considering the emotional wellbeing of learners, alongside their deep engagement in the teaching and learning process (Fredricks, Blumenfeld, & Paris, 2004). Consequently, higher education institutions bear the formal responsibility of nurturing and fostering emotional intelligence and fostering a sense of academic engagement among their students. Hence it can be said that emotional intelligence and student engagement are critical features quality education and positively learning outcomes (Karkada, D'Souza, & Mustapha, 2020; Tannoubi et al., 2023). According to Salovey and Mayer (1990), emotional intelligence refers to a person's capability to recognize and understand one's emotions and the emotions of others and apply the knowledge in guiding one's behaviors and thoughts. Emotional intelligence is thought to have a facilitating and guiding impact on the individual's thoughts and actions by signaling changes in the environment and making necessary changes in the mood which enables the individual to have a holistic understanding and reasoning towards any situation (Mayer & Salovey, 1997).

Drawing on the general concept of intelligence, Mayer and Salovey (1997) have proposed an emotional intelligence model that is a separate cognitive ability but associated with general intelligence. The model comprises four branches of emotional abilities: perception of emotions, reasoning with emotions, understanding emotions, and managing emotions (Mayer, Caruso, & Salovey, 2016). Perceiving emotions refers to an individual's capacity to recognize emotions of the self and that of others displayed in facial expressions, body language, tone of voice, body posture, physical states, and thoughts. Facilitating thoughts using emotions is described as a person's ability to make the best use of emotional knowledge to back up cognitive processes such as thinking, problem-solving, memory, judgment, and decision making which are healthy and vital to the self and others. Understanding emotions represents the individual's capability to comprehend meanings or definitions attached to emotions, coupled with the capacity to explain

the reasons for these meanings or definitions (Mayer & Salovey, 1997). Managing emotions refers to the individual's ability to regulate the emotions of the self and others effectively. Emotional intelligence is believed to significantly influence the emotional, social, and intellectual growth of college students. Individuals with high emotional intelligence are often more motivated and enthusiastic about learning (Chang & Tsai, 2022; Tang & He, 2023).

Student engagement is another crucial factor for boosting student motivation, fostering active participation, and improving overall performance in school activities. Understanding the causes behind student dropouts is imperative, as engagement plays a pivotal role in this phenomenon. The primary objective is to ensure students remain committed to completing their education, ultimately becoming valuable and contributing members of society (Appleton, Christenson, & Furlong, 2008; Fredricks et al., 2004). The concept of student engagement is described in different ways. Christenson et al. (2008), defined student engagement as students' devotion to learning and a sense of belongingness, identification at the learning institution, active involvement in the schooling environment, and initiating certain activities toward achieving positive learning outcomes. Fredricks et al. (2004) also described academic engagement as a malleable, developing, and multidimensional construct that consists of three broad dimensions; behavioral, cognitive, and emotional. According to Fredricks et al. (2004), student engagement is theorized as a three-dimensional construct that includes behavioral, emotional, and cognitive components. Behavioral engagement involves positive conduct such as adhering to the norms of the classroom, following the rules, and refraining from engaging in disruptive behaviors like being troublesome or skipping school (Fredricks et al., 2004). Besides, it reflects students' participation in learning and academic-related tasks, such as discussion contribution, asking questions, paying attention, concentrating, exhibiting persistence, and putting forth effort (Fredricks et al., 2004). Emotional engagement reflects students' positive and negative emotional reactions toward teachers, classmates, academic work, and school in general (Fredricks et al., 2004). Cognitive engagement refers to students' investment in learning and involves aspects such as willingness and thoughtfulness to expend the effort required to understand and master difficult tasks, the use of appropriate learning strategies (e.g., students' use of elaboration rather than memorization), challenge preference, and self-regulation (Fredricks et al., 2004).

In Eritrea, a country located on the East African side of the Red Sea, human resource development is a top priority, and since gaining independence in 1991, the country has been committed to this objective. One key strategy for advancing human resource development is the provision of quality education, particularly at the higher education level. Presently, Eritrea hosts several colleges that primarily focus on training undergraduate students. Eritrean colleges serve as arenas for both social and intellectual development, where students from diverse backgrounds converge to pursue their academic aspirations. Within this dynamic environment, understanding the emotional competencies of students and engagement in academic and extracurricular activities is paramount. Eritrean students navigate not only the academic rigors of higher education but also the sociocultural nuances inherent in their educational journey. Hence, understanding the levels of emotional intelligence and academic engagement among college students is pivotal, as it enhances their learning experience and prepares them for future career challenges. Despite such significance, there is a lack of comprehensive assessment and understanding of the levels of emotional intelligence and student engagement, including their sub-components among college students in the Eritrean higher education context. Moreover, the relationship between the levels of emotional intelligence and students' demographic variables such as gender, age, and program of study are

mixed and not well-established. The aim of this study is thus to investigate the levels of emotional intelligence and student engagement and their relationships with demographics among Eritrean college students. Examining the levels of emotional intelligence and student engagement might offer valuable insights for educational institutions, counselors, and policymakers to design more effective support systems and interventions to promote students' emotional intelligence and engagement in the Eritrean context and beyond.

## LITERATURE REVIEW

### Levels of emotional intelligence

Although there is a dearth of evidence-based literature, specifically relating to the levels of emotional intelligence in college or university students. However, there are a few studies that have made an effort to understand to level of emotional intelligence of college students. For instance, in a cross-sectional study conducted among 171 undergraduate faculty of education students in Malaysia, Mohzan, Hassan, and Halil (2013) tried to quantify the levels of emotional intelligence and its four dimensions (i.e., self-emotion appraisal, others' emotions appraisal, understanding emotions and regulation of emotions). The results of their study highlighted that the student participants appeared to have a higher level of emotional intelligence and its four sub-components (Mohzan et al., 2013). In the same line of research, Kant (2019) examined the levels of emotional intelligence with a sample of 200 university students in India and confirmed that almost all of the student participants were found to be highly emotionally intelligent. On the other hand, Fida, Ghaffar, Zaman, and Satti (2018) suggested that Business and Economics students reported a higher level of emotional intelligence whereas students of Arts and Humanities were found to have a lower level of emotional intelligence.

Recently, a study conducted among 114 university students in Oman reported that most of the students demonstrated higher levels in several aspects of emotional intelligence such as self-awareness, self-motivation, and social skills (Hussainy, Al-Balushi, & Al-Daoudi, 2022). Although the study contributes to the scientific body of knowledge on emotional intelligence, its small sample size and highly dominated by female participants (89.5%) might limit the generalization of the study (Hussainy et al., 2022). Furthermore, based on Goleman's Mixed Model of Emotional Intelligence, Khurshid, Majoka, and Khan (2018) assessed the levels of emotional intelligence with a large sample ($N = 1{,}775$) over the semester (entrance, mid and final semester). Their results revealed that the majority of the students reported moderate to high levels of emotional intelligence. Besides, the study pointed out that the students' level of emotional intelligence was greater at the entrance than in the final semester. Taken together, the majority of the reviewed literature presented here seems to suggest that the levels of emotional intelligence in higher education students range between moderate to high. However, it is also equally important to note that some studies suggest that college students' levels of emotional intelligence can vary across various sociodemographic groups such as field of study, age, and gender (Fida et al., 2018; Kant, 2019).

### Demographic variables and emotional intelligence

Several studies have made an effort to understand the nature of the relationship of students' levels of emotional intelligence with their demographic variables such as gender, age,

and program of studies. The relationship is not, however, clearly established and remains controversial. Concerning gender, some studies suggest that male and female students significantly differ in their levels of emotional intelligence. For instance, Bibi and Saqlain (2016) conducted a study on 205 university student and their findings indicate that female students demonstrated higher emotional intelligence than their male counterparts. Similarly, Mandell and Pherwani (2003) reported a significant difference in the emotional intelligence scores of males and females. More importantly, Fida et al. (2018) have recently explored whether there was a statistically significant difference in the levels of ability emotional intelligence and its components between male and female university students. Their results discovered that the mean score of overall emotional intelligence and one of its components (i.e., self-emotional appraisal) for female students significantly differed from their male counterparts (Fida et al., 2018). However, several studies rejected the idea that women are emotionally smarter than men (e.g., Bitar, Amnelius, Kristoffersson, & Boman, 2023; Goleman, 1995; Jenaabadi, 2014; Sathya & Velmurugan, 2022; Singh, 2013). Therefore, the challenge to determine whether emotional intelligence and gender are correlated had mixed results in previous studies (Izaguirre, 2008; Jaeger & Eagan, 2007; Parker, Duffy, Wood, Bond, & Hogan, 2005). These inconsistencies suggest further studies are needed.

Age is also one of the demographic variables that several researchers have tried to examine with emotional intelligence. In a study conducted by Abdollahpour, Nedjat, Besharat, Hosseini, and Salimi (2016), age was found positively associated with one dimension dimensions of emotional intelligence which is an appraisal of emotions but not with the other dimensions of emotional intelligence (regulation of emotions and utilization of emotions). Findings from another study outlined that age moderated the relationship between emotional intelligence and academic achievement, suggesting that the association was stronger for older students than younger students (Adeyemo, 2010). Similarly, other studies reported a positive relationship between students' level of emotional intelligence and their age (Devi & Devi, 2017; Thangavel, Sahu, & Shambharkar, 2023). In a recent study conducted among university students, students aged 25–29 exhibited higher emotional intelligence scores than those within the 21–24 age. However, there were no notable differences in emotional intelligence scores among older students (≥30 years) compared to other age groups (Bitar et al., 2023). As this study was conducted among medical students, its results might not be applied to non-medical students. However, numerous studies also documented that there is no statistically significant association between emotional intelligence and age (Shipley, Jackson, & Segrest, 2010; Talman, Hupli, Rankin, Engblom, & Eriksson Haavisto, 2019). Therefore, like gender, the relationship between emotional intelligence and age is not well settled as well, which needs further attention.

Although there is a paucity of literature on the relationship between the level of emotional intelligence and their field of study, a few studies endeavored to determine the linkage between the variables. For instance, Kant (2019) has recently studied the relationship between the level of emotional intelligence and the program of study with a sample of 200 university students in India, and the results revealed that emotional intelligence scores for School of Education students significantly differed from emotional intelligence scores for students of Law and Governance. This result suggests that the school of education students are more emotionally intelligent than their counterpart groups. Likewise, Fida et al. (2018) have analyzed the level of emotional intelligence and its constituents among students of different faculties such as Arts and Humanities, Business and Economics, Chemical and Life Sciences, Physical and Numerical Sciences,

and Social Sciences. Their results pointed out that students of Business and economics were found to report a higher level in self-emotion appraisal and others' emotion appraisal components of emotional intelligence. On the other hand, the Arts and Humanities students scored the lowest of all groups on overall emotional intelligence and its four dimensions. On the component of using emotions, Chemical, and Life sciences female students were found to report the highest score. Students of Social Sciences have also outsmarted the rest of the groups on the emotional assessment of others. Such results suggest that the levels of emotional intelligence vary across students of different faculties. On the contrary, Sathya and Velmurugan (2022) recently reported that students' levels of emotional intelligence did not significantly vary between arts and science students. In addition to their inconsistent results, these studies attempted to compare the level of emotional intelligence between schools or faculties but failed to consider the levels of emotional intelligence with specific departments that the present study has tried to address.

## Levels of student engagement

Previous studies in the field of engagement have only focused on the relationship of student engagement with learning outcomes such as academic performance. The studies that have examined the levels of student engagement and its dimensions are significantly limited. However, some studies suggest that college students have a higher level of student engagement. For instance, Delfino (2019) surveyed a total of 305 college students in the Philippines to determine their levels of academic engagement and the students reported a higher score on overall student engagement and its three dimensions (i.e., behavioral, cognitive, and emotional). Mehdinezhad (2011) also analyzed the levels of student engagement and its five components with a sample of 551 first-year university students in Iran. The result of the study showed that university students scored more than average in all five components. The highest scores of the participants were also shown in intellectual engagement and class engagement. Sengsouliya, Soukhavong, Silavong, Sengsouliya, and Littlepage (2020) quantified the levels of student engagement and its three dimensions among 71 senior high school students and found that most of the students had a higher level of behavioral, cognitive, and emotional engagement. However, as the sample size of this study was not large enough, the obtained findings might not be generalized to a large population. Besides, the participants of their study were high school students and the results extracted from such participants might not be generalized to the college or university population as the high school and college contexts are quite different. Taken it together, despite the evidence reviewed here seems to suggest a higher level of student engagement among college students, the findings might not characterize other contexts because engagement is more tend to be influenced by a spectrum of educational contextual factors such as quality of learning environment and individual need and interest (Fredricks et al., 2004; Taylor & Parsons, 2011). It is thus of great importance to analyze how well college students academically engage in their respective national academic context.

## Demographic variables and student engagement

Previous research studies have shown positive associations between engagement and gender of the students at all grade levels in elementary, middle, and high school and girls consistently report higher academic engagement than boys (Bowen & Richman, 2010; Fernández-Zabala,

Goñi, Camino, & Zulaika, 2016). In another study, Harper, Carini, Bridges, and Hayek (2004) examined the level of engagement between male and female undergraduate students on eight dimensions: academic challenge, active and collaborative learning, student-faculty interaction, supportive learning environment, general education gains, personal and social gains, practical competence gains and satisfaction with the institution and they have found a statistically significant difference between men and women on two aspects of student engagement (i.e., academic challenge and student-faculty interaction). More specifically, women reported more academic diligence than men did, whereas men reported more contracts with faculty than women did (Harper et al., 2004). However, no statistically significant difference was detected for active and collaborative learning, supportive campus environment, self-reported gains, or satisfaction (Harper et al., 2004). In their part, Hartono, Umamah, and Sumarno (2019) have recently surveyed 354 senior high school students and provided additional evidence for the assumption that female students are more tend to get more academically engaged than their male counterparts because female students are less engaged in disruptive behaviors and female student make the best use of their academic time and resources. According to Kinzie et al. (2007), gender was found to be a determinant factor in student engagement, suggesting that female students show greater academic involvement in academically interesting and purposeful schooling activities than male students. Few other studies, on the other hand, suggested that there is no statistically significant association between gender and levels of student engagement (e.g., King, 2016; Olson, Oberhoffer-Fritz, Reiner, & Schulz, 2023).

Age was also another demographic factor found to contribute to the level of student engagement. Several studies suggested that younger students have a greater level of academic engagement than older ones. For instance, in a study carried out among 836 Malaysian students of different age groups, students with lower ages appeared to have a higher level of student engagement (Amir, Saleha, Jelas, Ahmad, & Z, 2014). The result of their study suggests that when students get older and older, they feel that schooling activities are less fascinating and motivating. Similarly, Fernández-Zabala et al. (2016) investigated the level of student engagement with a large sample of 1,543 secondary school students in relation to their age in Spain. Their results reveal a significant difference in the levels of student engagement between age groups, suggesting that younger respondents reported higher scores for perceived support from parents and teachers, as well as for school engagement. However, the sample of the studies of Amir et al. (2014), Fernández-Zabala et al. (2016) were limited to adolescent students with an age range between 12 and 18, and thus, the findings might not be generalized to higher education students.

Studies related to the relationship between student engagement and their program of study are significantly limited. However, we found one study conducted on student engagement differences across various academic majors within different colleges (College of Arts and Humanities, College of Business, College of Education, and College of Social Sciences). The research analyzed differences in high-impact community-based learning, student-faculty interaction, and diversity experiences (Ebede, 2018). The findings revealed that students enrolled in the College of Education exhibit higher participation rates in high-impact community-based learning compared to students in other majors. Additionally, those majoring in the College of Arts and Humanities tend to engage more frequently with faculty members in comparison to their counterparts. Moreover, students pursuing majors within the College of Social Sciences tend to report more diverse experiences than students in other colleges (Ebede, 2018).

### Research questions

The present study has developed the following guiding research questions.

1. What is the extent of emotional intelligence in Asmara College of Education students?
2. What is the degree of student engagement in Asmara College of Education students?
3. How do demographics (i.e., gender, age, and program of study) associate with emotional intelligence scores in Eritrean college students?
4. How do demographic variables (e.g., gender, age, and program of study) correlate with engagement scores in Eritrean college students?

## METHODOLOGY

### Participants

The present research included a total of 119 undergraduate students who were in the final semester of their studies during the 2019/2020 academic year at Asmara College of Education, Eritrea. Although there are numerous colleges in Eritrea, our study focused solely on senior students from one college, constrained by limitations of time and finances. However, it is crucial to highlight that all senior students from the chosen college participated in the study. Likewise, given the time and financial constraints, we employed a convenience sampling approach to select participants from the specified population. The distribution of participants is detailed in Table 1, showcasing that 58 were male (49%) and 61 were female (51%). On average, the participants' age was 23.22 ($SD$ = 3.89). The majority of student participants were single ($n$ = 109; 91.6%). The study included students from six distinct programs of study (departments) in the college: Psychology ($n$ = 34; 28.6%), Educational Administration ($n$ = 24; 20.20%), Chemistry ($n$ = 26; 21.8%), Biology Education ($n$ = 15; 12.6%), Physics Education ($n$ = 8; 6.7%), and Math Education ($n$ = 12; 10.1%).

### Measures

***Demographic data.*** To gather data on sociodemographic variables, the participating students were asked to respond to a series of specifically self-developed questions. These questions were

*Table 1.* Demographic characteristics of the participants (N-119)

| Variable | Sub-groups | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 58 | 49.0 |
| | Female | 61 | 51.0 |
| Marital status | Married | 10 | 8.4 |
| | Single | 109 | 91.6 |
| Program of study | Psychology | 34 | 28.6 |
| | Educational Administration | 24 | 20.2 |
| | Chemistry Education | 26 | 21.8 |
| | Biology Education | 15 | 12.6 |
| | Math Education | 12 | 10.1 |
| | Physics Education | 8 | 6.7 |

designed to inquire about various aspects, including their age, gender identity, and the specific academic program or department in which they were enrolled. With these self-developed inquiries, we aimed to obtain a nuanced understanding of the sociodemographic composition within the participant group within the context of students' levels of emotional intelligence and student engagement.

***Emotional intelligence.*** The Self-Report Emotional Intelligence Test (SEIT), initially developed by Schutte et al. (1998), assessed the participants' emotional intelligence level. The test was based on the original four-branch model of emotional intelligence of Salovey and Mayer (1990): perceiving emotions, reasoning with emotions, understanding emotions, and managing emotions. Comprising 33 items, SEIT implemented a five-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Scores on the total emotional intelligence scale ranged between 33 and 165, with higher scores denoting higher levels of emotional intelligence. The internal consistency of SEIT, gauged by Cronbach's alphas, demonstrated a high reliability coefficient of 0.90 (Schutte et al., 1998). Furthermore, this measure was validated and exhibited strong construct validity, convergent validity, and predictive validity concerning grade point average. Additionally, when compared with the big five personality dimensions, it demonstrated discriminant validity, although it correlated less with greater openness to experience (Schutte et al., 1998). Although Schutte et al. (1998) initially conceived SEIT as a single solution factor, subsequent factor analytic studies suggested a more refined four-factor solution for the 33 items (Ciarrochi, Chan, & Bajgar, 2001; Petrides & Furnham, 2000; Saklofske, Austin, & Minski, 2003). These studies delineated the four subscales of emotional intelligence as follows: Perception of Emotions (10 items), Management of One's Emotions (9 items), Management of Others' Emotions (8 items), and Utilization of Emotions (6 items). The overall reliability of this measurement was reported as 0.84 (Ciarrochi et al., 2001). In this present study, the data analysis adopted the four-factor solution. The multidimensional measure remained highly reliable, demonstrating an overall reliability coefficient of 0.83.

***Student engagement.*** The assessment of student learning engagement in this study utilized the Student Engagement Scale (SES) developed by Doğan (2014). This comprehensive scale aims to evaluate three primary components of student engagement: emotional, cognitive, and behavioral. Comprising 31 self-report items, the scale implements a five-point rating system, ranging from 1 (strongly disagree) to 5 (strongly agree). SES encompasses three sub-scales: emotional engagement (10 items), cognitive engagement (12 items), and behavioral engagement (9 items). The cumulative scores vary from 31 to 155, with higher scores indicating elevated levels of student engagement. Reliability analyses yielded coefficients of 0.88 for emotional engagement, 0.88 for cognitive engagement, and 0.81 for behavioral engagement (Doğan, 2014). Furthermore, the overall internal consistency of the SES was determined to be 0.91. Doğan (2014) concluded that the Student Engagement Scale serves as a valid and reliable instrument for gauging student engagement levels. In the present study, the Student Engagement Scale and its subscales demonstrated robust internal consistency, as depicted in Table 2.

***Data collection procedure.*** The research was approved by the Research Committee of the Department of Psychology and Educational Administration at Asmara College of Education. Subsequently, printed questionnaires were distributed to student participants in their respective classrooms, utilizing a paper-based method for data collection. Given the participants' advanced

*Table 2.* Summary of M, SD and Cronbach's Alpha of the study variables (N = 119)

| Variables | *N* | *Min* | *Max* | *M* | *SD* | *α* | *Items* | *Sk* | *Ku* |
|---|---|---|---|---|---|---|---|---|---|
| Perception of Emotions | 119 | 23.00 | 50.00 | 36.53 | 5.138 | 0.69 | 10 | −0.30 | 0.28 |
| Managing Own Emotions | 119 | 21.00 | 45.00 | 35.34 | 4.58 | 0.64 | 9 | −0.58 | 0.76 |
| Managing Others Emotions | 119 | 17.00 | 39.00 | 30.14 | 4.12 | 0.56 | 8 | −0.32 | 0.10 |
| Utilization of Emotions | 119 | 12.00 | 30.00 | 24.15 | 3.07 | 0.57 | 6 | −0.71 | 1.30 |
| Emotional Intelligence | 119 | 86.00 | 164.00 | 126.23 | 12.70 | 0.83 | 33 | −0.11 | 0.69 |
| Emotional Engagement | 119 | 16.00 | 46.00 | 32.81 | 6.06 | 0.82 | 10 | −0.34 | −0.05 |
| Cognitive Engagement | 119 | 19.00 | 58.00 | 42.46 | 7.73 | 0.87 | 12 | −0.70 | 0.79 |
| Behavioral Engagement | 119 | 18.00 | 45.00 | 37.08 | 5.27 | 0.70 | 9 | −0.99 | 1.08 |
| Student Engagement | 119 | 67.00 | 144.00 | 112.34 | 14.35 | 0.87 | 31 | −0.46 | 0.40 |

*Note. Min* = Minimum; *Max* = Maximum; *Sk* = skewness; *Ku* = kurtosis.

English language skills as senior students, the English version of the questionnaire was utilized. Initially, 160 questionnaires were disseminated, and 119 appropriately completed questionnaires were utilized for the final analysis.

***Data analytical procedures.*** The first step was inputting the data into SPSS version 25. Then, various statistical analytical procedures including frequency distribution, Pearson-moment correlation, and independent sample *t*-tests were conducted for data analysis.

***Ethical considerations.*** Before data collection, explicit explanations about the study's purpose were provided to participants, who in turn were given informed consent and participation in the study was entirely voluntary. Participants were explicitly assured that their data would solely be used for research purposes and not for any other intent. The study upheld ethical principles, encompassing individual safety, respect, autonomy, anonymity, and confidentiality.

## RESULTS

### Descriptive statistics of study variables

Table 2 displays a summary of key statistical measures, including mean values, standard deviations, Cronbach's alpha coefficients, skewness, and kurtosis values for the study variables. The reliability coefficients for all scales indicated good internal consistency, surpassing the sufficient value of 0.50 (Taber, 2018). Additionally, to assess the normality assumption of the study variables, skewness and kurtosis values, which indicate the shape of the distribution, were calculated. Skewness and kurtosis values falling within the range of −2 to +2 are generally considered acceptable for demonstrating a normal univariate distribution (Gravetter & Wallnau, 2014). As indicated in Table 2, all study variables exhibited skewness and kurtosis values within this acceptable range, indicating a normal distribution of the data. Moreover, descriptive analyses revealed that the emotional intelligence scores of student participants ranged between 86 and 164, while the overall student engagement scores ranged from 67 to 144. A comparison of mean values across the three dimensions of student engagement indicated that respondents demonstrated higher engagement in the cognitive domain, with a mean value of 42.46. This was

followed by the behavioral domain ($M = 37.08$, SD = 5.27) and the emotional domain ($M = 32$, SD = 6.06).

## Levels of emotional intelligence

To determine the levels of emotional intelligence, the total emotional intelligence score was divided into three data points. The first one-third of the total scores were labeled at a lower level. Middle scores indicated a moderate level. The upper one-third of the total scores indicated a higher level of emotional intelligence. As indicated in Fig. 1, the majority of the participants were found to have a higher level of emotional intelligence (106; 89%) and only 13 respondents (11%) reported having a moderate level of emotional intelligence.

## Levels of components of emotional intelligence

Figures 2–5 depicts the frequency distribution of the levels of the four components of emotional intelligence (i.e., perception of emotions, managing own emotions, managing others' emotions, and utilization of emotions). The results indicated that 87 (73.1%) of the participants reported a higher level of perception of emotions. Thirty-two (26.9%) of the participants were found to have a moderate level of perception of emotions. As indicated in Fig. 3, the results for managing

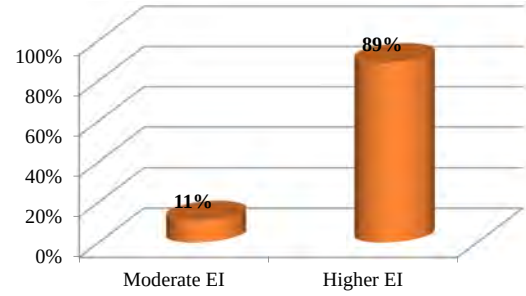


*Fig. 1.* Emotional intelligence

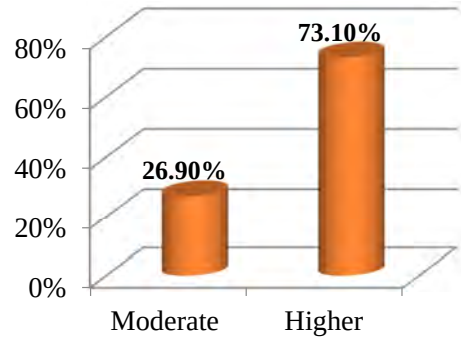


*Fig. 2.* Perception of emotion

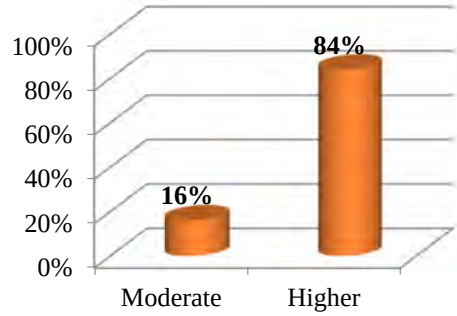


*Fig. 3.* Managing own emotions

own emotions showed that 100 (84%) of the participants voiced higher levels and some of them (16%) were found to have a moderate level of managing own emotions. The frequency distribution of the levels of managing others' emotions among the participants is displayed in Fig. 4. The results presented that the majority of the participants (86; 72.3%) reported a higher level of managing others' emotions. The level of managing others' emotions for some participants (33; 22.7%) was found to be moderate. It is apparent from Fig. 5 that the majority of the participants (103; 86.6%) reported a higher level of utilization of emotions. A minority of participants (16; 13.4%) were also found to have a moderate level of utilization of emotions.

## Levels of student engagement

Figures 6–9 presents the frequency distribution of the levels of student engagement and its subscales. It can be seen from Fig. 6 that many participants (92; 77.3%) reported a higher level of student engagement. Almost one-fourth of the participants (27; 22.7%) were also found to have a moderate level of emotional engagement. Figure 7 illustrates a summary of statistics for the levels of emotional engagement of the participants. The results indicated that more than half of the participants (64; 54%) reported a higher level of emotional engagement. Fifty-three

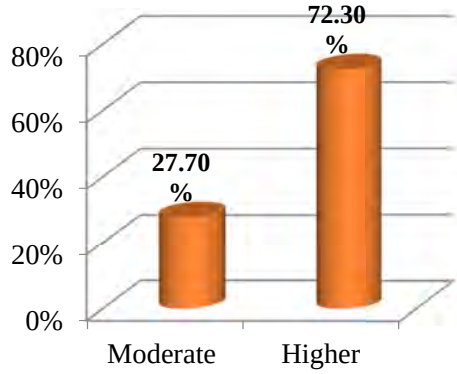


*Fig. 4.* Managing others emotions

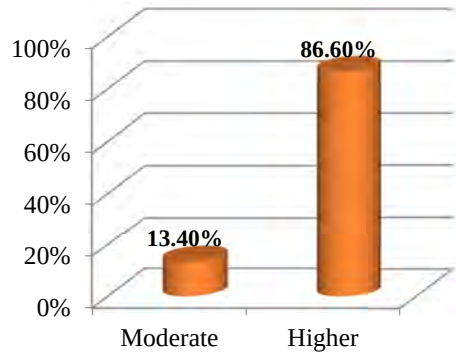


*Fig. 5.* Utilization of emotions

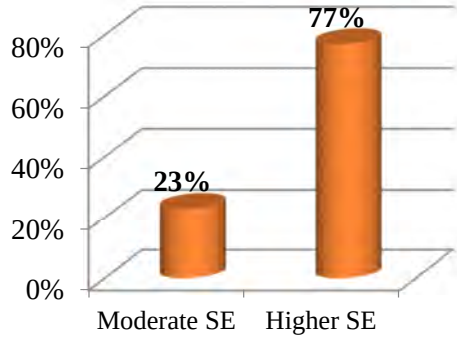


*Fig. 6.* Student engagement (SE)

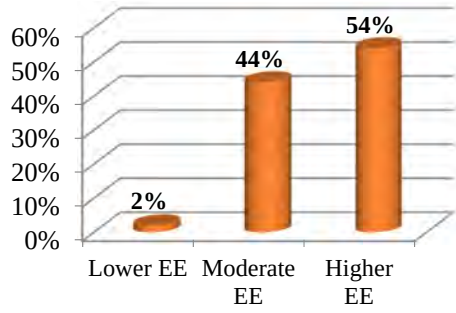


*Fig. 7.* Emotional engagement (EE)

respondents (44%) were found to have a moderate level of emotional engagement. Nevertheless, only two students (2%) have reported a lower level of emotional engagement. Figure 8 provides a summary of the frequency distribution of the levels of cognitive engagement of the participants.

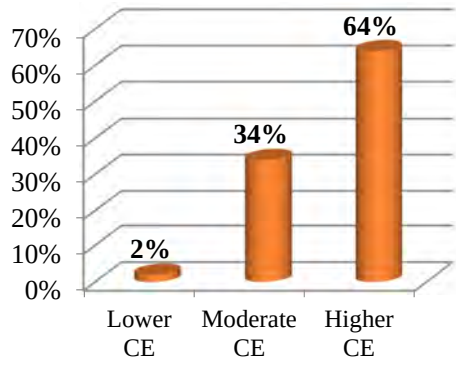


*Fig. 8.* Cognitive engagement (CE)

The results revealed that more than half of the participants (76; 64%) reported a higher level of cognitive engagement. Forty-one student participants (34%) were observed to have a moderate level of cognitive engagement. However, only two students (2%) have indicated a lower level of cognitive engagement. Finally, from the data presented in Fig. 9, it is apparent that the level of behavioral engagement for the majority of the participants (104; 87%) appeared to be high. A few participants (15; 13%) were found to have a moderate level of behavioral engagement.

## Gender, emotional intelligence, and student engagement

An independent sample test was conducted to determine whether there was a statistically significant difference in the levels of independent variables of emotional intelligence and student engagement and their components between male and female participants. As indicated in Table 3, the computed *t*-test result provided statistical evidence for the relationship between emotional intelligence and one of its components (i.e., managing own emotions) and also one component of student engagement (i.e., behavioral engagement) with gender. The mean score of the emotional intelligence for female participants was found to be higher than the mean score of the male participants and the mean difference was statistically significant. Similarly, female

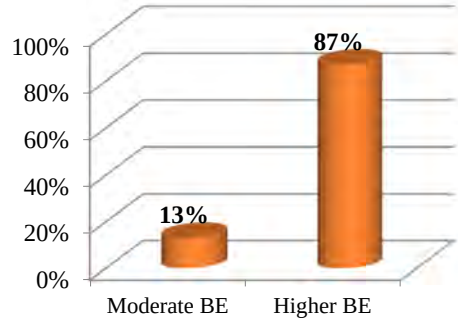


*Fig. 9.* Behavioral engagement (BE)

*Table 3.* An independent sample test for the levels of emotional intelligence and student engagement and their constituents between female and male participants

| Variables | Gender | *n* | *M* | *SD* | *t* | *p* |
|---|---|---|---|---|---|---|
| Emotional intelligence | Male | 58 | 123.86 | 11.66 | 2.006 | 0.047 |
| | Female | 61 | 128.48 | 13.32 | | |
| Perception of emotions | Male | 58 | 36.26 | 4.45 | 0.559 | 0.577 |
| | Female | 61 | 36.79 | 5.74 | | |
| Managing own emotions | Male | 58 | 34.09 | 5.09 | 2.999 | 0.003 |
| | Female | 61 | 36.52 | 3.71 | | |
| Managing others emotions | Male | 58 | 29.53 | 3.72 | 1.582 | 0.116 |
| | Female | 61 | 30.72 | 4.41 | | |
| Utilization of emotions | Male | 58 | 23.72 | 3.33 | 1.487 | 0.140 |
| | Female | 61 | 24.56 | 2.77 | | |
| Emotional engagement | Male | 58 | 32.67 | 6.57 | 0.235 | 0.815 |
| | Female | 61 | 32.93 | 5.59 | | |
| Cognitive engagement | Male | 58 | 41.43 | 7.52 | 1.425 | 0.157 |
| | Female | 61 | 43.44 | 7.86 | | |
| Behavioral Engagement | Male | 58 | 36.10 | 5.40 | 1.988 | 0.049 |
| | Female | 61 | 38.00 | 5.00 | | |
| Student engagement | Male | 58 | 110.21 | 13.67 | 1.594 | 0.114 |
| | Female | 61 | 114.38 | 14.80 | | |

participants outsmarted their male counterparts in managing their own emotions. No statistical evidence, was, however, found for the other constituents of emotional intelligence between male and female respondents. For behavioral engagement, female participants were again found to have a higher level of behavioral engagement than their male counterparts and the mean difference was statistically significant as well. Nevertheless, no statistically significant difference was detected for the rest of the levels of emotional intelligence (i.e., perception of emotions, managing others' emotions, and utilization of emotions) and student engagement (i.e., emotional and cognitive), and the overall level of student engagement between gender groups.

## Program of study, emotional intelligence and student engagement

Similarly, an independent sample test was performed to examine whether there was a statistically significant difference in the levels of independent variables of emotional intelligence and student engagement and their constituents between students of different departments or programs of study. The independent sample test results (see Table 4) indicated that the mean score of the overall emotional intelligence for Psychology and Educational Administration department students significantly differed from Science Education department students. Further, Psychology and Educational Administration students reported a greater mean score on perception of emotions than Science Education students, and the mean difference was statistically significant. Regarding the overall student engagement score, the students of the two departments did not show any statistically significant difference. However, the mean score of cognitive engagement for Science Education department students was found to be greater than the mean score of Psychology and Educational Administration students and the mean difference was statistically different from zero.

*Table 4.* An independent sample test for levels of emotional intelligence and student engagement between departmental groups

| Variables | Program of study | *n* | *M* | *SD* | *t* | *p* |
|---|---|---|---|---|---|---|
| Emotional intelligence | Psychology and Edad | 58 | 128.98 | 11.51 | 2.352 | 0.020 |
| | Science Education | 61 | 123.61 | 13.31 | | |
| Perception of emotions | Psychology and Edad | 58 | 37.66 | 5.07 | 2.376 | 0.019 |
| | Science Education | 61 | 35.46 | 5.01 | | |
| Managing Own emotions | Psychology and Edad | 58 | 35.95 | 4.02 | 1.428 | 0.156 |
| | Science Education | 61 | 34.75 | 5.02 | | |
| Managing Others emotions | Psychology and Edad | 58 | 30.41 | 4.31 | 0.699 | 0.486 |
| | Science Education | 61 | 29.89 | 3.94 | | |
| Utilization of emotions | Psychology and Edad | 58 | 24.66 | 2.59 | 1.761 | 0.081 |
| | Science Education | 61 | 23.67 | 3.42 | | |
| Emotional engagement | Psychology and Edad | 58 | 32.40 | 5.27 | 0.718 | 0.474 |
| | Science Education | 61 | 33.20 | 6.75 | | |
| Cognitive engagement | Psychology and Edad | 58 | 41.03 | 8.54 | 1.989 | 0.049 |
| | Science Education | 61 | 43.82 | 6.66 | | |
| Behavioral Engagement | Psychology and Edad | 58 | 37.43 | 4.92 | 0.716 | 0.475 |
| | Science Education | 61 | 36.74 | 5.59 | | |
| Student engagement | Psychology and Edad | 58 | 110.86 | 15.00 | 1.100 | 0.274 |
| | Science Education | 61 | 113.75 | 13.69 | | |

*Note*. Edad = Educational Administration.

### Age, emotional intelligence, and student engagement

Pearson product-moment correlation coefficient was used to understand the association of the age of participants with their emotional intelligence and student engagement scores. The correlation results revealed that there was a positive weak association between age and overall student engagement, indicating that older students were found to show a higher level of student engagement ($r = 0.20$, $p < 0.05$). However, there was no statistically significant relationship between emotional intelligence and the age of the students ($p > 0.05$).

## DISCUSSION

The present study was designed to analyze the levels of emotional intelligence and student engagement and their relationships with demographic variables of college students in Eritrean higher education institutions. The present study developed four guiding research questions. In its first research question, the study explored the levels of emotional intelligence and its four constituents. Findings derived from frequency distribution revealed that the levels of emotional intelligence and its four constituents (perception of emotions, managing own emotions, and managing others' emotions) for all the participants ranged between moderate and high, suggesting the students are emotionally intelligent. These results seem to be consistent with other published studies that found that college students have a higher level of emotional intelligence (Kant, 2019; Mohzan et al., 2013). The explanation for this finding might be associated with the

cultural orientation of the Eritrean society. Eritrean cultural orientation is more of a collective cultural orientation in which people have a culture of collaboration and a strong feeling of belongingness to their social group. In the Eritrean culture, great importance is given to social harmony and loyalty to one's social group. So students who grew up and live in such a cultural context are more tend to get social and emotional support and thereby appear to be emotionally intelligent. Further, teaching is a profession where student teachers are trained and expected to better understand their emotions and those of others and are also believed to show effective emotion-management skills when interacting with their students and colleagues. Therefore, as the student participants of the study were College of Education students, the different educational science courses taken at the college might have contributed to their higher levels of emotional intelligence. It has also been researched that cultural dimensions of collectivism, uncertainty avoidance, and long-term orientation have a positive contribution to different dimensions of emotional intelligence (Gunkel, Schlaegel, & Engle, 2014) and such cultural dimensions are common in the Eritrean culture.

The second research inquiry was about the levels of student engagement and its three dimensions (i.e., emotional, cognitive, and behavioral) indicating that the majority of the participants reported a moderate and higher level of the different dimensions and overall student engagement. These results are not surprising as they are in accord with several cross-sectional study results which have suggested that there is a higher level of student engagement among high school and college students (Delfino, 2019; Mehdinezhad, 2011; Sengsouliya et al., 2020). One possible reason for this might be the educational instructional policy of the Eritrean education system. The Ministry of Education in Eritrea has long endeavored to implement learner-centered and interactive pedagogy as an effective pedagogical strategy at all education levels. As a result, teachers of all educational levels of the country are believed to practice a learner-centered and interactive pedagogical approach by creating a learning environment where students are actively engaged in different curricular and extra-curricular activities. Such a pedagogical approach might have then contributed to the moderate and higher levels of student engagement of the student participants of the study.

Third, the present study examined whether there were statistically significant associations between the levels of emotional intelligence and demographic variables of gender, age, and department. As per gender, the results indicated that female students were found to achieve higher scores on overall emotional intelligence and its one constituent (i.e., managing own emotions) than their male counterparts. Female students' superiority in emotional intelligence might be explained by the fact that females are superb in sensing, appraising, and coping with emotions (Fida et al., 2018). Females' emotional intelligence supremacy has also been recognized by several previous research works (e.g., Bibi & Saqlain, 2016; Fida et al., 2018). However, several studies have rejected the idea that women are emotionally keener than men (e.g., Goleman, 1995; Jenaabadi, 2014; Singh, 2013). Hence, the nature of the relationship between emotional intelligence and gender is still vague and not well-documented (Izaguirre, 2008; Jaeger & Eagan, 2007; Parker et al., 2005).

As per to program of study, students of Psychology and Educational Administration Programs were found to be generally more emotionally intelligent than their Science Education counterparts. The statistically significant mean difference between the departmental groups might be attributed to the idea that students of Psychology and Educational Administration are familiar with various Psychology courses that play a great role in fostering their emotional

knowledge and emotional regulation skills. Albeit inadequate literature on this issue, some studies support the assumption that emotional intelligence of college students varies across different programs of study. The result of Kant (2019) suggests that the school of education students are more emotionally intelligent than their counterparts groups. As per age and emotional intelligence, in line with our expectation, no statistically significant difference was observed in emotional intelligence between different age groups. This finding of our study corroborated the idea of Shipley et al. (2010), who have suggested that emotional intelligence has nothing to do with age. Yet, some researchers have found that older students have a higher level of emotional intelligence than their younger counterparts (e.g., Abdollahpour et al., 2016; Devi & Devi, 2017). The inconsistent results might be potentially associated with methodological limitations and theoretical variation of emotional intelligence.

Finally, the study examined students' demographic variables of gender, age, and program of study in relation to student engagement scores. The findings indicated that the levels of student engagement did not significantly vary between male and female students. Previous literature has also acknowledged the fact that male and female students have more or less equal academic engagement (King, 2016). Nevertheless, some previous studies also suggest that girls invest more time and effort in their academic studies than boys (Hartono et al., 2019; Kinzie et al., 2007). The sample data provided evidence that age affects student engagement. The finding of the present study suggests that older students have greater overall academic engagement than younger students. Further, older college students appeared to have greater emotional engagement. However, no statistically significant relationship was observed between age and the rest two dimensions of student engagement (i.e., cognitive and behavioral). Such findings of the present study are contrary to previous studies which have suggested that younger students are more academically engaged than older ones (Amir et al., 2014; Fernández-Zabala et al., 2016). One possible justification for this contradiction might be variation in sample and context. The current findings support the notion that student's program of study does not significantly impact their overall level of engagement. This lack of significance in the results could be attributed to the consistent use of similar pedagogical approaches adopted throughout the various departments within the College of Education. Given that the participants in this study were exclusively senior students, it's noteworthy that lecturers of the college typically employ interactive and engaging teaching styles tailored for this stage of education.

## Implications

The findings of this research have significant implications for college communities, policymakers, and educators. Higher education institutions and playmakers could make the best use of the insights gained from this study for tailoring educational programs to enhance emotional intelligence and engagement. This could involve incorporating modules or workshops and extracurricular activities focused on the specific dimensions of both emotional intelligence (perception of emotions, managing own emotions, managing emotions of others, and utilization of emotion) and student engagement (behavioral, emotional, and cognitive). Further, the targeted interventions or support systems should be developed based on sociodemographic profiles of the students to improve the levels of emotional intelligence and academic engagement of all student groups. Furthermore, college teachers could receive training on integrating these elements into their teaching methods across different academic disciplines. College teachers are

recommended to enhance students' emotional intelligence and academic engagement by fostering a positive and inclusive classroom environment where open communication and respect thrive. They should build meaningful relationships with students, promote emotional awareness, and emotional regulation, and cultivate empathy through active listening and understanding. They should apply diverse teaching methods, encouraging collaboration, and providing constructive feedback, benefiting students across various demographic groups. College students themselves and their parents are also recommended to develop a sense of comprehensive understanding of the significance of emotional intelligence and engagement in enhancing positive learning outcomes. Students ought to demonstrate a proactive interest in engaging with diverse college training programs and activities. These initiatives have the potential to significantly enhance their emotional intelligence and foster greater engagement in their learning pursuits.

### Limitations and future directions

While this study significantly contributes to our scientific comprehension of the relationship between emotional intelligence, student engagement, and their correlation with demographics, there exist several limitations worth noting. Firstly, the study employed a cross-sectional design, assessing all variables at a single point in time. Given the malleable nature of emotional intelligence and student engagement, future research could benefit from longitudinal studies to track changes in these constructs over time. Secondly, the study's scope was confined to a single college, presenting limitations in generalizing the findings due to the relatively small sample size. Thirdly, the evaluation of emotional intelligence and student engagement relied on self-report assessment tools, potentially influenced by participants' social desirability bias, which might have impacted the accuracy of the results. Furthermore, it's important to note that two subscales of emotional intelligence demonstrated relatively low internal consistency, although their values remained above the threshold of 0.50 established by some researchers (Taber, 2018). Lastly, this study primarily focused on descriptive analyses of emotional intelligence and student engagement levels, as well as their connections with student demographics within the college context. It would be beneficial for future studies to explore these constructs across diverse educational levels, such as elementary, junior, and secondary schools.

## CONCLUSION

Emotional intelligence and student engagement play pivotal roles in the academic pursuits of college students. Those with higher emotional intelligence and greater academic engagement tend to graduate more successfully from their studies. Recognizing the significance of these aspects in the academic environment, this study aimed to assess the levels of emotional intelligence and student engagement among college students. The findings revealed that a majority of students in the college of education exhibit moderate to high levels of emotional intelligence and student engagement. Additionally, the study explored potential variations in emotional intelligence and student engagement across different demographic groups such as gender, age, and program of study. Regarding emotional intelligence scores and gender, female students demonstrated higher overall levels of emotional intelligence compared to their male counterparts. In terms of program of study, students enrolled in psychology and educational administration

showcased higher overall emotional intelligence levels in comparison to students in science education. However, no significant relationship was observed between age and emotional intelligence. When analyzing student engagement and demographics, the results indicated no significant differences in the level of student engagement between genders and departments, except in cognitive engagement. Science education students displayed higher levels of cognitive engagement compared to students in psychology and educational administration. Notably, the age analysis showed a statistically significant positive relationship between age and overall student engagement, favoring older students. These results could assist higher education institutions and educators in developing effective strategies to enhance both emotional intelligence and academic engagement among students, considering a range of demographic factors.

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