

## **Emotional intelligence in educational leadership doctoral students: Examining association based on gender and age**

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### **Abstract**

*This study examined differences between females and males in emotional intelligence (EI). The researchers conducted a test of association between EI and sex and on age in a sample of educational leadership doctoral students. Using a survey, the principal investigator collected measures on EI and other demographic information from the participants. The sample was made up of 36 educational leadership students (24 women and 12 men) attending a regional university located in the southern region of the United States. EI was evaluated by the Schutte Self-Report EI Test (Schutte et al., 1998), which evaluates four subscales (Perception of Emotion, Utilization of Emotion, Managing own Emotions, and Managing Others' Emotions). When the researchers examined EI as a trait, they were unable to detect differences in EI based on gender and based on age. Additional research is needed to further understand EI in educational leadership doctoral students.*

**Keywords:** emotional intelligence, educational leadership doctoral students, gender differences

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A person with high Emotional Intelligence (EI) is expected not only to be capable of describing, explaining, and managing their emotions but also, they should be able to read the emotions of others. Parveen et al. (2012) defined EI as the innate potential to feel, use, communicate, recognize, remember, describe, identify, learn from, manage, understand, and explain emotions. Parveen et al. (2012) posited that these innate characteristics can be corrupted and skewed through interactions with others. Goleman (2011) suggested that good counselors, group leaders, and teachers have emotional empathy because of their ability to sense how others are reacting. As such, programs that prepare students to enter educational leadership careers should be aware of the role of EI within the educational milieu. Academic leaders have identified empathy as an important trait (Parrish, 2015), and researchers suggest a strong relationship between EI, resilience, and leadership success (Maulding et al., 2012). University students in leadership training fields should understand EI. In the past decade or two, we have witnessed a growing body of research regarding the importance of EI for successful school leadership (Carmeli, 2003; Jamli & Salim, 2020; MacCann et al., 2020).

### **Phenomenon of interest**

EI can be traced to discussions in social intelligence (Thorndike, 1920; Crowne, 2009) and multiple intelligence (Gardner, 2003). EI is a relatively new and growing area of behavioral research. EI has caught the imagination of the general public, the commercial world, and the scientific community (Zeidner et al., 2004). EI connects with several cutting-edge areas of psychological science, including the neuroscience of emotion, self-regulation theory, studies of metacognition, and the search for human cognitive abilities beyond “traditional” academic intelligence (Zeidner, 2004).

EI has its four generic domains: self-awareness, self-management, social awareness, and relationship management (Goleman, 2011). Self-awareness, which is called Emotional Self-awareness extends to a person’s understanding of his or her values and goals (Goleman, 2011). Self-aware people know and are comfortable talking about their limitations and strengths, and they often demonstrate a thirst for constructive criticism (Goleman, 2011). Self-awareness can help people identify their own strengths and weaknesses. Hence, people should have an awareness of their values, thoughts, and goals. Self-management is to create an environment of trust and fairness via control of the feelings of others,

which can help students to build up relationships to achieve their organizational goals; however, they could not improve themselves well in some aspects (Goleman, 2011). Social awareness involves empathy, organizational awareness, and service (Goleman, 2011). Leaders with empathy can attune to a wide range of emotional signals, letting them sense the felt, but unspoken emotions in a person or group (Goleman, 2011). Leaders with empathy can better understand their employees' real situations in their work and in their lives. Moreover, a leader with a keen social awareness can be politically astute, able to detect crucial social networks, and read key power relationships (Goleman, 2011). However, power has some negative impacts. Powerful people often misjudge, misunderstand, and even derogate their subordinates within organizations (Forsyth, 2018).

As aspiring successful educational leaders, doctoral students should understand the importance of social awareness. Managing relationships among team members is the ability to inspire and influence others (Goleman, 2011), but it may be difficult to master for some educational leaders and students. For Fida et al. (2018), university education is a terminal stage when young people are ready to enter the job arena and they are expected to be emotionally sound. Some researchers have conceptualized EI as a set of mental abilities concerned with emotions and the processing of emotional information (Goleman, 1995; Mayer & Salovey, 1997; Mayer et al., 1999; Palmer et al., 2005). Models have included motivation and social functioning (Bar-On, 1997; Bar-On, 2006). Conceptualizations of EI have led to different measurement scales. EI as a trait rather than an ability differentiates two constructs. Self-reported questionnaires measure EI as a trait, and maximal performance tests measure EI as an ability (Jonker & Vosloo, 2008; MacCann et al., 2020). Researchers distinguish these two different constructs of EI (Petrides et al., 2007). Personality Trait EI concerns emotion-related dispositions and self-perceptions measured via self-report, whilst ability EI concerns emotion-related cognitive abilities that ought to be measured via maximum-performance tests (Petrides et al., 2007).

The more established and well utilized measurement scales relating to EI use different constructs to measure emotion-related dispositions and emotion-related cognitive abilities. For instance, the Schutte Self-Report EI Test (SSEIT), developed by Schutte et al. (1998), measures the ability to have a positive effect, recognize the emotions of others, have happy emotions, manage one's own emotions, recognize non-verbal emotions,

and be effective at emotional management (Schutte et al., 2009; Vadivel & Kate, 2019). The SSEIT sub-scales are *Perception of Emotion*, *Managing Own Emotions*, *Managing Others' Emotions*, and *Utilization of Emotion*.

Law et al. (2004) investigated the validity of their EI construct. These researchers suggested a four-dimensional construct: the ability to understand one's own and others' emotions, the ability to regulate one's emotions, and the ability to use one's emotions. Law et al. (2004) also showed that EI might be a good predictor of job performance and life satisfaction. Sterrett (2000) identified six constructs—self-awareness, self-confidence, self-control, empathy, motivation, and social-competency. Bar-On (1997) identified a 15-self report measure that includes scales such as self-regard, emotional awareness, assertiveness, emotional self-expression, independence, empathy, and social responsibility.

Prior studies have investigated gender and its association with EI. For instance, Joseph and Newman (2010) using a meta-analysis concluded that women obtained higher scores than men on all EI dimensions (Effect Size ranging from .29 to .49).

Age can be another factor that influences EI. Johnson and Christensen (2019) explored the EI of senior student affairs officers by examining their management of emotions. The results indicated that age, gender, education level, and years of experience did not statistically impact the participants ability to manage their emotions (Johnson & Christensen, 2019). However, Chen (2016) found that older adults may use EI to enhance their subjective well-being.

### **Problem statement**

Little to no research exists that relates to measuring EI among doctoral students in educational leadership. Because EI has been theorized to be desirable for school counselors, group leaders, and teachers (Goleman, 2011), studies need to empirically investigate levels of EI in doctoral students that relate to behaviors, attitudes, and performance at school. In order to understand and estimate doctoral students' levels of EI, we need to build a research agenda to examine and test EI as a phenomenon in the population of educational leadership doctoral students. In addition, outcomes can provide researchers and practitioners with a better understanding of EI among educational leaders. Further, based on these research studies, doctoral programs can find ways to help students continuously improve and develop their levels of EI. Therefore, this study fills a gap in the extant literature.

## **Purpose**

The purpose of this study was to investigate EI in educational leadership doctoral students. Specifically, the researchers examined the differences in EI between females and males; the relationship between gender and EI, and the relationship between age and EI. The investigation was exploratory in nature because factors relating the EI among educational leadership doctoral students is not fully understood. The researchers were guided by three research questions.

## **Research Questions**

RQ1: Is there a significant difference in levels of EI between males and females among educational leadership doctoral students?

RQ2: What is the strength of the relationship between gender and EI?

RQ3: What is the extent of the relationship between students' age and their levels of EI?

## **Literature Review**

Studies have found differences in measures of EI between genders. In a sample of Pakistani university students, females were found to be more emotionally intelligent than males (Bibi et al., 2016). However, male medical students in India and in Qatar (Taher et al., 2020) have been found to have higher EI than female medical students. Female University students in the humanities and in sciences being higher on stress than males were not significantly different in EI (Goel & Bardhan, 2016). Among university volleyball players, EI has been found to be higher in females than males, and EI can be an important predictor of sportpersonship orientation (Can, 2016). There has been found a statistical significance difference between male and female Kuwait university students in quality of life and EI in favor of female students (AI-Huwailah, 2017). Among graduate students, Thompson (2011) found no relationship between EI and satisfaction with overall academic experience. Huerta et al. (2017) found that EI is not a significant predictor of writing anxiety, but it has a moderate effect with first language.

Since little to no studies exist that we found relating specifically to EI among educational leadership doctoral students, this literature review highlights the study of the phenomenon of EI among students in

leadership preparation in academic fields such as nursing, business, and in education among teachers and administrators.

## **Nursing**

Nurses are strongly associated with care, compassion, and empathy. Şenyuva et al. (2014) used a Self-Compassion Scale and Emotional Intelligence Assessment Scale with a sample of 571 nursing undergraduates. These researchers found a correlation between self-compassion and EI, which includes the individual perceiving one's emotions and using the knowledge one gained to function while directing thoughts, actions, and professional applications. It is not surprising that EI among nurses has gained the attention of many researchers worldwide. In Sloveni, Štiglic et al. (2018) investigated EI between undergraduate nursing students with and without previous caring experience and engineering students. These researchers found no differences in EI between these groups. These researchers did not examine length of service providing care or age as a factor relating to EI.

One study that included gender and age was conducted among Nigerian nursing students (Uzonwanne, 2016). In this study, there was no difference in EI between genders, but female nurses were found to be significantly higher in the subscale measure of appraisal of others' emotions. Unzonwanne also found that the age ranges of 18-30 and 31-40 expressed the "highest manifestation" of EI (p. 7801).

Zoromski (2017) found a positive correlation between older adults and higher levels of EI. Zoromski's study is informative because among nursing students with self-awareness, they can identify their own strengths in caring for their patients, but sometimes these students have challenges knowing themselves well and may suffer from anxiety (Akerjordet & Severinsson, 2008). Anxiety is a common phenomenon that constitutes a universal cause of poor academic performance among students worldwide. A study among 277 female nurses attending university in the Middle East found that most experienced high levels of test anxiety during final exams even though their marks were good throughout the semester (Dawood et al., 2016). These researchers found that test anxiety scores decreased with participants' age, but there was no significant relationship.

EI is associated with positive empowerment processes as well as positive organizational outcomes (Akerjordet & Severinsson, 2008). Some researchers have found that nurse leaders who exhibit EI enhance organizational, staff, and patient outcomes. Young nursing students

usually spend some time improving their attitudes and behaviors in taking care of their patients in the hospital because they understand that higher EI can help them to achieve organizational goals and outcomes. For instance, Cheng Jiang is a nurse student who works as an intern with infected patients in Wuhan, China (Mo et al., 2020). She knows she must protect her patients. She exhibits self-awareness and can identify her own strengths in caring for her patients. Her self-management is to create an environment of trust and fairness via control of the feelings of others (Goleman, 2011). For many experienced nurses, managing relationships among team members is the ability to inspire and influence others (Goleman, 2011).

In medicine, EI awareness is needed not only among nurses. Thousands of forefront medical interns, volunteers, and workers rushed to fight against the COVID-19 epidemic disease in Wuhan, China (Mo et al., 2020). These medical workers needed to rely on positive thoughts, attitudes, and behaviors to treat all of their patients because people with high levels of EI are better able to show empathy and to communicate their ideas with others, for they can use their own emotional energy to influence others (Forsyth, 2018).

A trait measure of EI among medical students in Karnataka, India found no significant differences between males and females (Vadivel & Kate, 2019). However, among other Indian medical students, females were found to have significantly higher EI than male medical students (Shetty et al., 2013), and Ajmal et al. (2017) found males. With these studies, age was not a factor that was considered in the analysis.

In summary, the extant literature suggests that EI among nurses and medical graduate students is of importance to understand. Some studies have found differences. The literature suggests that researchers have focused on gender differences and few have included age as a variable of interest.

## **Business**

Studies relating to EI among graduate students have included business students. EI has caught the attention of business leaders, scholars, and executive development consultants (Pinos et al., 2013). There was a positive impact on academic achievement among MBA graduates in a program that included the development of EI competencies (Joyner & Mann, 2011). MBA students can develop EI crucial to effectiveness as managers and leaders (Boyatzis et al., 2002). Further, students of business

and economics had higher levels of EI, while students of Arts and Humanities had lower levels of EI (Fida et al., 2018). These researchers found that in business students whose teams had a higher EI average score exhibited better team task performance and higher density friendship networks (Zhang et al., 2020). Among American and Chinese accounting students, it was found that there was little variance in EI scores (Margavio et al., 2016). However, the researchers in many of these studies with business students did not examine age.

Age can be the next key factor to think about in examining business students' levels of EI. It is predicted that in 15 years, there may be as much as a 25% increase in demand for 35-45 years old workers while there will be 15% fewer Americans in the 35-45 years old range (Joyner & Mann, 2011). These fundamental, long-term demographic patterns dictate that the demand for talent will continue to increase, and the amount of available talent will continue to decrease (Joyner & Mann, 2011). Because of this decrease, the development of EI competencies was identified as a key developmental leverage point for MBA students (Joyner & Mann, 2011). Among business students, EI was found to be positively associated with work experience, but it was not significantly associated with age (Shipley et al., 2010). However, Margavio et al. (2016) revealed that students' EI scores significantly differ with age, gender, and grade point average.

The studies that included graduate business suggest that gender and age are important variables when investigated in their context with EI. EI competence is a key trait for business leaders. Cavallo and Brienza (2002) found a strong relationship between superior performing leaders and emotional competence. Understanding EI in graduate students training to become leaders is important, even though business leaders may not be known as pursuing helping careers similar to nurses and educators.

## **Education**

### ***Teachers***

Scholars and applied researchers recognize that EI empowers educational leaders (Tench, 2016). The value of EI for effective teaching, student achievement, and importance of EI to transformative learning has been discussed (Nelson et al., 2005). EI skills are linked to classroom management performance and teacher retention factors for new and novice teachers (Nelson et al., 2005). Teacher EI influences the management of



discipline in a classroom and is related to gender, academic qualification (e.g., doctorate), and service time (Valente et al., 2019).

No significant difference was found between teacher candidates' EI levels and communication skills regarding gender and department (Ozkaral & Ustu, 2019). It was also found that EI did not differ according to gender and grade level, but it had a significant difference according to age and department variables (Akyol & Akdemir, 2019).

One study examined the correlations of EI, academic help-seeking behavior, and psychological help-seeking behavior on students' academic achievement in Woldia College of Teacher Education (WCTE), Woldia, Ethiopia (Astatke, 2018). This study suggests that gender differences in academic help-seeking behavior and academic achievement were not statistically significant. Astatke recommends that parents, instructors, counselors, and administrative bodies should work on promoting students' EI and developing students' help-seeking behaviors—academic and psychological help-seeking behaviors—to enhance academic achievement of students.

### ***Administrators***

Some educational administrators (e.g., Dean of Students, Assistant Head of School, Head of School, and Instructional Coach) are analogous to teachers. Their levels of EI should also be considered since they are agents within the academic milieu. In context, administrators need to have awareness of their EI when they provide feedback to build teachers' self-efficacy and provide instructional feedback to teachers (Gutierrez, 2018). Furthermore, principals should receive additional professional development opportunities targeting EI and feedback types (Gutierrez, 2018). EI serves as a possible skillset for academic deans to utilize in navigating between their administrative duties and serving as leaders for their staff and faculty. Tabors (2019) focused on determining whether academic deans' EI levels are related to their leadership effectiveness, age, gender, and position duration.

School leaders must be cognizant of the opportunities and direction afforded by research associated with EI (McDowelle & Bell, 1997). This is consistent with Parrish (2015) who used a multi-modal case study and found that participants overwhelmingly agreed that leaders in higher education who were more sensitive and responsive not only gained more respect by peers, but they also performed more effectively. A mixed-methods study to determine the relationship between EI and resilience and

leadership success found a strong positive correlation between a school leader's EI, resilience, and leadership capacity (Maulding et al., 2012). In a study of two educational leadership doctoral programs in upstate New York, Caminos (2015) suggested that cohort-model as well as non-cohort programs train candidates in EI. University administrators should have high levels of EI.

## **Summary**

Since little to no studies that we know of addressed EI among graduate level students in educational leadership, we explored the literature that included other graduate fields specifically in medicine and business. We identified these graduate programs not only because they prepare students in careers that require high levels of EI, but also, we recognize growth patterns in careers away from stereotypical gender roles. The findings from studies suggest that many studies fail to support conclusions that there is a difference in EI between genders among graduate students in medicine, business, and education. Additionally, when age is examined with respect to its correlation with levels of EI, many studies suggest a positive but not a significant relationship. The findings suggest that among graduate students in helping professions, EI is not significant as it relates to gender and age.

## **Method**

### **Sample**

The study employs quantitative methodology. More specifically, the study employs a survey method design. The researchers used a convenience sample ( $N = 36$ ; 24 females, 12 males) from the Educational Leadership Doctoral students attending a regional university located in the southern region of the United States. The selection criteria included all doctoral students identified as currently enrolled, dropped-out, or graduated. All genders and program concentrations were also included. Program concentrations reported were Organizational Leadership (47.3%), Postsecondary Leadership (31.6%), and P-12 Leadership (10.5%). A greater portion of participants (36.11%) reported having already taken more than 49 credit hours. Each participant provided informed consent. Participation was voluntary and anonymous.

## **Instrument and Measures**

The researchers selected the SSEIT because of its high internal consistency. Developed by Schutte et al. (1998) as a self-reported tool of data collection and measurement of an individual's emotional intelligence, the SSEIT measures traits as the ability to have a positive effect, recognize the emotions of others, have happy emotions, manage one's own emotions, recognize non-verbal emotions, and be effective at emotional management.

Sub-scales are *Perception of Emotion* (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33), *Managing Own Emotions* (items 2, 3, 10, 12, 14, 21, 23, 28, 31), *Managing Others' Emotions* (items 1, 4, 11, 13, 16, 24, 26, 30), and *Utilization of Emotion* (items 6, 7, 8, 17, 20, 27). Reverse coding items 5, 28 and 33, and then summing all items provides a total score that can range from 33 to 165. Higher scores indicate a characteristic of greater emotional intelligence (Schutte et al., 2009). Each item is rated using a Likert type scale (1 = *strongly disagree* to 5 = *strongly agree*).

High internal consistency of the SSEIT has been found. Schutte et al. (1998) found the SSEIT a Cronbach's  $\alpha$  of 0.90 for the 33-item scale and a Flesch-Kincaid grade level = 5.68, and Ciarrochi et al. (2001) found a Cronbach's  $\alpha$  = 0.84, while Saklofske et al. (2003) found a Cronbach  $\alpha$  = 0.89. As Streiner and Kottner (2014) specified, "Cronbach's  $\alpha$  is regarded as the measures of the interrelatedness of item scores constituting one instrument or test" (p. 1927). From studies that have been found to have higher than a .80 (Cronbach  $\alpha$ ), they affirm that the 33-item scale can be used to identify an individual's overall EI score within reliable and valid measurements (Jonker & Vosloo, 2008; Schutte et al., 2009). In our study, we found a Cronbach  $\alpha$  = 0.91, which indicates a high reliability index. The SSEIT has been used across a diverse range of populations including nurses in Slovenia (Štiglic et al., 2018), internet addiction among youths in Iran (Far et al., 2014), and teacher trainees in Turkey (Karahan et al., 2019). Schutte et al. (1998) provided the instrument as well as additional validity measures.

## **Procedures**

After the principal researcher obtained permission from the author of the SSEIT to use the instrument, permission was applied for institution permission from the program director (PD) and IRB. After these approvals, the researchers used Qualtrics to replicate the questionnaire in electronic form with an accessible link. Once the link was established it

was tested for readability and ease of use. The PD who maintains the student listserv sent the link of the questionnaire to each student. The PD sent a letter of introduction, which served as an endorsement of the study. Students were also provided instructions that they could withdraw from the study and how to respond to each statement on the instrument. Once users acknowledged consent, they proceeded to answer the SSEIT questions which were then followed by questions to collect demographic data. The response rate was 30%. There were no incentives offered for participation. Two questionnaires were incomplete, and they were not included in the final analysis.

### Data Analysis

The researchers used three statistical tests—Mann-Whitney  $U$ , point biserial, and Kendall’s  $\tau_b$ . Considered as nonparametric tests, the Mann-Whitney  $U$  and Kendall’s  $\tau_b$  are deployed when assumptions of normality and homoscedasticity used for parametric tests are violated (Siegel, 1957). The Mann-Whitney  $U$  was used to test the difference in means between independent samples when normality of the data is suspect (Nachar, 2008; Siegel, 1957). Next, the point biserial was used to answer the second research question, which was to test the strength of the relationship between gender and EI. The point biserial is used to test an association between a discrete variable coded as 0 and 1 and a continuous random variable (Tate, 1954). Finally, Kendall’s  $\tau_b$  was used to investigate the third research question, which was to examine the strength of the association between age and EI. Since age was measured at the ordinal level and the sample did not meet the assumptions for a parametric test, Kendall’s  $\tau_b$  was used (Siegel, 1957). For computations, we relied on computer software, STATA 15.1.

### Results

The means and standard deviations of the most important variables in this study are provided (see Table 1). In addition, the frequency distribution for the age variable in this study is displayed in Table 2. Most of the students were in age range 30- to 39-years old.

**Table 1**  
**Descriptive statistics corresponding to the variables of interest in this study**

Variables	$M (SD)$	Range
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Sex	0.31 (0.47)	0-1
Perception of emotions	36.54 (5.40)	22-45
Managing own emotions	37.66 (4.64)	25-45
Managing others' emotions	32.26 (3.48)	25-40
Utilization of emotion	24.54 (3.08)	18-30
Total EI score	131.00 (13.30)	92-157

**Table 2**  
**Frequency distribution of age ranges**

Age	Frequency ( <i>f</i> )	Percentage	Cumulative Percentage
50 - 59	5	13.9%	100.0%
40 - 49	10	27.8%	86.1%
30 - 39	18	50.0%	58.3%
20 - 29	3	8.3%	8.3%
0 - 19	0	0.0%	0.0%
<i>N</i> = 36		100.0%	

To answer the research question about whether there is a significant difference in levels of EI between males and females among educational leadership doctoral students, the Mann-Whitney *U* test detected no difference. Although it was found that males ( $M = 131.82$ ,  $SD = 12.20$ ) had a higher holistic EI score than females ( $M = 130.62$ ,  $SD = 13.49$ ), this difference was not statistically significant ( $U = 181.5$ ,  $p$ -value = 0.426). Based on these results, the null hypothesis was retained. On the SSEIT subscales, females had higher mean scores for *Perception of Emotion* and *Utilization of Emotion*, and males had higher mean scores for *Managing own emotions* and *Managing others' emotions*. Additional analysis on the subscales revealed that no differences exist between males and females (see Table 3).

**Table 3**  
**Gender difference in SSEIT component traits**

SSEIT Component traits	SSEIT statement	Female <i>M (SD)</i>	Male <i>M (SD)</i>	<i>p</i>
TOTAL EI score	1 - 33	130.63 (13.49)	131.82 (12.20)	.426

Perception of Emotion	5, 9, 15, 18, 19, 22, 25, 29, 32, 33	36.92 (5.07)	35.73 (5.74)	.605
Managing own emotions	2, 3, 10, 12, 14, 21, 23, 28, 31	37.38 (4.69)	38.27 (4.24)	.694
Managing others' emotions	1, 4, 11, 13, 16, 24, 26, 30	31.75 (3.13)	33.36 (3.77)	.292
Utilization of Emotion	6, 7, 8, 17, 20, 27	24.58 (3.01)	24.45 (3.09)	.844

Next, to answer the research question relating to the strength of the relationship between gender and EI among doctoral students, the point-biserial test was used. The point-biserial analysis showed that there was no significant correlation between gender and EI score ( $r_{pb} = 0.042$ , 95% CI [-.358, .287]). These findings suggested that there was no statistical difference between gender and levels of EI.

To test the extent of the relationship between students' age and their levels of EI, Kendall's tau-b was used. A positive correlation was found between age and the level of EI score. However, this was a weak correlation, and it was not statistically significant ( $\tau_b = .049$ ,  $p = .731$ ). From these results, the null hypothesis that there is no significant correlation between students' age and their levels of EI is retained.

## Discussion

The purpose of this study was to investigate EI in educational leadership doctoral students. Specifically, the researchers examined the differences in EI between females and males; the relationship between genders in EI, and the relationship between age and EI. Three research questions guided the study 1) Is there is a significant difference in levels of EI between males and females among educational leadership doctoral students, 2) What is the strength of the relationship between gender and EI, and 3) What is the extent of the relationship between students' age and their levels of emotional intelligence?

In this sample of educational leadership doctoral students, the results revealed that no significant differences in levels of EI existed between females and males, there was no significant relationship between males and females in EI, and no significant relationship between age and levels of EI. Although the sample size was small, the use of non-parametric tests supported the analytical technique (Siegel, 1957). The results support the argument that educational leaders should have high EI (Goleman, 2011; Maulding et al., 2012). It is well to hypothesize that educators have equal levels of EI. Empathy is subsumed into EI, and academic leaders have identified empathy as the most significant EI trait (Parrish, 2015). Among educational administrators, EI has been found to be positively correlated with job performance (Mahdinezhad et al., 2017). Studies that used samples of educators suggest that between gender differences on EI may not exist. For example, Ozkaral and Ustu (2019) found no significant difference between genders in university students' emotional understanding. Our findings were similar.

The extent of the relationship between age and levels of EI was found to be positive but weak. The findings are supported by numerous studies. Unzonwanne (2016) who found that age ranges 31-40 expressed the "highest manifestation" of EI (p. 7801); Chen et al. (2016) found that EI mediated age and well-being in older adults; and, Akyol and Akdemir (2019) found that teacher candidates' levels of EI and problem-solving skills did not differ according to gender and the class level, but EI had a significant difference according to age and department variables. However, another study indicates that students' EI levels differed significantly in terms of sex, academic grades and academic departments but not in terms of type of high school, sportive branch, and age (Bahadir, 2018).

These findings suggest that when age is considered to examine students' levels of EI, other factors could be related. However, one study found that students who have similar hobbies regarding developing design had higher EI score, but there is no significant difference in students' EI scores in terms of age and gender (Tekerek & Tekerek, 2017). In the sample of educational leadership doctoral students in the present study, age was not significantly correlated with EI. Taken together, although there seems to be no significant correlation between sex and EI among educators, the age EI relationship needs additional study.

## **Implications**

Academic leaders have identified empathy as the most significant EI trait (Parrish, 2015). The relationship between gender, age and EI of doctoral students in educational leadership is important to understand because EI among students plays a key role in their lifetime character building (Mudiono, 2019). Although educators are in the helping profession and expected to have as well as to maintain high levels of EI, this does not preclude programs from ensuring that students understand the role of EI especially as doctoral programs continue to attract mid-career professionals. The present study adds to the EI discussion and should be encouraging to other researchers interested in EI as a phenomenon among not only graduate students but specifically educational leadership doctoral students. Doctoral study demands significant time, energy, financial, and emotional commitment to complete (Hill & Conceição, 2020). Gender and age can be among many factors that have an impact on EI among university students. Because educational leadership doctoral programs will continue to attract older students, programs that prepare students to enter educational leadership careers should be aware of the role of EI within the educational milieu. Researchers should pay attention to these students because as programs evolve and become more competitive, those students recruited into these programs need to work with and engage high, holistic levels of EI.

## **Limitations**

Some limitations of this study exist. These findings are limited to the current case in the present study. In addition, the researchers chose to support EI as a trait-based measure. The SSEIT as a self-reporting mechanism is a trait-based measure of EI. Researchers have measured EI as a trait using questionnaires and as an ability based on maximal performance tests (Jonker & Vosloo, 2008; MacCann et al., 2020).

Another limitation to highlight is the sample size. The study was conducted using a convenience sample of doctoral students in one educational leadership program located in the southern region of the US. This sample is limited because not all respondents in the population of educational leadership doctoral students had an equal chance for selection into the sample. Nevertheless, this is only one of many possible samples, and convenience sampling is among one of many sampling techniques used by educational researchers.



## **Recommendations**

One area for additional research is for other researchers to continue to select samples from among the population of doctoral students in educational leadership. We recommend additional researchers test EI among doctoral students in different program configurations.

In addition, because EI is measured as a trait and as an ability, in order to understand EI among doctoral students in education, future researchers should continue to measure EI as a trait in educational leadership doctoral students. Researchers need to investigate not only age and gender but also other covariates such as academic performance, grit, persistence, and self-efficacy. Research results and discussions will provide future researchers and practitioners with a better understanding of EI among educational leadership doctoral students. Academic performance as measured by writing (Huerta et al., 2017), overall graduate grade point average (Grehan et al., 2011), and assertiveness (Niyogi et al., 2020) are factors for inclusion. For researchers, additional studies from various educational leadership doctoral programs are grounds for investigation. Recent concerns relating to the Carnegie Project on the Education Doctorate model (<https://www.cpedinitiative.org/>) and on-line programs where isolation, and cohort models will also require students to engage high levels of EI.

## **Conclusion**

From our model, we concluded that no significant difference exists in EI between females and male in educational leadership doctoral students. There was also no significant relationship between gender and EI, and between age and EI. However, although these findings were not significant, investigation of EI among educational leadership doctoral students needs to explore additional factors. Programs that continue to attract educational leaders need to know that these students are attuned with their own emotions as well as others. Students seeking careers in educational leadership may already have similar levels of EI since this helping profession may be attractive to those who have high perception of emotion, are able to utilize their emotions, and to manage their own as well as other emotions, but we still need to know factors associated with these constructs.

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