5-2023

An Investigation of Emotional Intelligence among African American College Students Enrolled in a State College in Florida

Wayne Brown

An Investigation of Emotional Intelligence among African American College Students Enrolled in a State College in Florida

by

Wayne Brown
Bachelor of Science
Biology
SUNY at Cortland
1980

Master of Science
Health Services Management
Florida Institute of Technology
1993

A dissertation
submitted to the College of Engineering and Science of
Florida Institute of Technology
in partial fulfillment of the requirements
for the degree of

Doctor of Philosophy
in
Science Education

Melbourne, Florida

May, 2023

We the undersigned committee hereby approve the attached dissertation,
"An Investigation of Emotional Intelligence among African American College Students Enrolled in a State College in Florida."
by
Wayne Brown

_____

Thomas Marcinkowski, Ph.D.
Professor
Mathematical Sciences
Major Advisor

_____

Joo Young Park, Ph.D.
Assistant Professor
Mathematical Sciences

_____

Ryan T. White, Ph.D.
Assistant Professor
Mathematical Sciences

_____

Thomas H. Harrell, Ph.D.
Emeritus Professor
School of Psychology

_____

Gnana Bhaskar Tenali, Ph.D.
Professor and Department Head
Mathematical Sciences

Abstract

Title: An Investigation of Emotional Intelligence among African American College Students Enrolled in a State College in Florida

Author: Wayne Brown

Advisor: Thomas J. Marcinkowski, Ph.D.

Due to the small number of research studies that have explored emotional intelligence (EI) in African-American (AA) samples (i.e., twelve studies, with six involving college students), the first purpose of this study was to describe conceptual and empirical dimensions of EI within a sample of AA college students (Research Question 1). To date, only one EI measure has been developed for use with AA samples, the African American Emotional Intelligence Survey or AAEIS (Funderburk, 2007), so the second purpose was to further explore the validity and reliability of the AAEIS (Research Question 2). The third purpose was to explore the relationship of selected demographic, experiential, and familiar factors to scores on the AAEIS and on a second measure of EI, the TEIQue Short Form or SF (Petrides, 2009; Research Question 3).

This study's target population included AA college students who resided in one Central Florida county in 2020, or AA college students whose characteristics resemble those of students in these counties. The accessible population included AA undergraduate students enrolled in any of the branch campuses of the state college in that county in 2019-20. This state college had a total of full-time 14,597 students, of whom 1,605 (11%)

were self-identified as AA (males = 534, females = 1,065). A stratified random sample was invited to participate in this study, but was adjusted to allow for an even number of AA male students (50%: 268) and AA female students (25%: 266). A total of 69 usable responses were received and included (n = 69; male = 13, female = 56).

Permission was obtained to use the AAEIS, TEIQue-SF, and the Schedule of Racist Events or SRE (Klonoff & Landrine, 1999). The researcher also developed items based on prior research to collect data on selected demographic (age, gender), college experience (number of terms completed, student engagement in campus activities), and familial factors (mother's and father's highest level of education, family SES). The Participant Consent Form, along with these items and scales, were developed in Qualtrics for online data collection. Following IRB approval, this sample of AA male and female student received an e-mail message, which introduced the researcher and this study, presented an invitation to participate, and presented the link to this Consent Form and online survey.

For Research Question 1, results of an Exploratory Factor Analysis (EFA) of Items 1-15 in the AAEIS indicated that (Factor 1) Self-Control and Conflict Avoidance (4 items), and (Factor 2) Conflict Engagement (5 items) were prominent EI characteristics of this sample, explaining 29% of the variance. Further, results indicated that (Factor 3) Willingness to Understand Others (2 items), and (Factor 4) Willingness to be Responsive to Others (3 items) were influential EI characteristics, explaining an additional 21% of the total variance. It was noteworthy that all of these items reflects dimensions of EI that pertained to self-in-relationship. For exploratory purposes, an

additional EFA was conducted, including those 15 AAEIS items and the 30 TEIQue-SF items. The results of that EFA were noticeably different. Factors 1 and 2 explained 20% of the variance in this data set, and included only TEIQue-SF items, nearly all of which focused on healthy dimensions of EI which pertained to one's self (Well-Being, Personal Motivation, Emotionality, and Self-Control). Further, only Factor 4 included more than one Conflict Avoidance and/or Conflict Engagement item (i.e., 3 and 1 of those 5 items, respectively), although this factor explained only 7.7% of the variance. These EFA results indicated that healthy dimensions of EI which pertained to one's self were more prominent in this sample than were dimensions of EI which pertained to self-in-relationship, notably those that involved adversity and conflict (i.e., as in the AAEIS).

From the analyses for Research Question 2, the results of the Cronbach's alpha (n=69) was .585, which is lower than minimum thresholds for measures such as this (e.g., Nunally, 1978). As an indicator of concurrent validity, the correlation between AAEIS total scores and TEIQue-SF total scores was .608. Although the size of this correlation is lower than anticipated, few sources indicate whether this value is above or below an acceptable threshold. Nonetheless, this correlation appears to reflect differences in the design of the AAEIS and TEIQue-SF: (a) Funderburk's reliance on Goleman's model (3 of 5 components) and Mayer, Salovey and Caruso's model (3 of 4 components) vs. Petrides' reliance on the work of he and his colleagues on their own model (e.g., Petrides & Furnham, 2003); and (b) differences apparent in EFA results noted above. For construct validity purposes, convergent, but not divergent, validity was explored. These results indicated that the AAEIS appears to be construct valid as a measure of dimensions

of EI which emphasize self-in-relationship, notably those which involve adversity and conflict (Factors 1 and 2) as well as empathy and responsiveness toward others (Factors 3 and 4). However, the evidence from the EFA for AAEIS and TEIQue-SF items indicates that the AAEIS does not appear to be construct valid as a measure of those dimensions of EI which emphasize one's self, notably well-being and motivation.

Post-hoc power analyses for Research Question 3 involving (3a) the AAEIS (*n*=69) and (3b) the TEIQue-SF (*n*=42) indicated that each sample was too small relative to the number of independent variables in each (i.e., 7 and 9, respectively). To increase power to a more acceptable level (power = about .75), multiple regression analyses were conducted, and those results were used to reduce the number of independent variables in each regression model. The regression analysis for (3a) indicated that three variables had t values with p values < .20: Father's Level of Education (p = .05); Age (p = .081), and Number of Terms Completed (p = .154). When only those three variables were included, the regression model was significant (F = 2.874, p = .045), although this model explained only 11.7% of the variance in AAEIS scores, and only Age was statistically significant (t = 2.191, p = .032). The regression analysis for (3b) indicated that only one variable had a t value with a p value < .2: Age. When only Age was included, the regression model was significant (F = 5.437**,** p = .024), and this single-variable model explained 12.1% of the variance in TEIQue-SF total scores. It was noteworthy that Age was found to be a statistically significant predictor of both AAEIS and TEIQue-SF total scores. When coupled with data on the age range of study participants (ages 18-63), the results appear

to support hypotheses regarding the influence of age and associated developmental and experiential factors on EI.

A number of recommendations for further research were offered, including for replication, and attention to study limitations and delimitations. Recommendations for research based on findings of this study, included uses of the AAEIS in combination with other measures of EI, and the development of new measures for exploring dimensions of EI that pertain to one's perceptions of and responses to adversity and conflict. Finally, following from a discussion of implications for practice, recommendations were offered regarding a college's support for the development of students' EI, including attention to the college's climate and culture, and its collaboration with the surrounding community.

Table of Contents

Abstract iii

List of Figures xv

List of Tables xvii

Acknowledgements xxii

1. Introduction 1

Background 1

Overview of theories and models of emotional intelligence 1

Overview of models and measures of emotional intelligence 4

Overview of research on EI in general and for the study population 13

Research Problem 23

Research Purpose and Questions 23

Research questions 24

Relevance and Significance of This Study 25

Personal relevance of the research topic 25

Relevance to the research context 26

Relevance to the research setting 27

Overview of the Research Design 27

Study Delimitations and Limitations 28

Delimitations 28

Limitations 30

Definition of Key Terms 31

2. Review of Literature 36

Introduction 36

Historical and Definitional Features of Emotions and Emotional Intelligence 36

Definitional features of emotion 36

Historical references to and descriptions of emotional intelligence 39

Overview of definitions, theories, and models of emotional Intelligence 40

Literature Related to the Research Problem 43

Theories, Models and Frameworks of Emotional Intelligence 45

Ability models of EI 46

Trait models of EI 48

Mixed models of EI 50

Measures of Emotional Intelligence 54

Ability measures of EI 55

Trait measures of EI 61

Mixed-model measures of EI 62

Research on EI in General and for the Study Population 69

Introduction 69

Reviews of research pertaining to general models and measures of EI 72

Reviews of research pertaining to the population in this study 75

Studies of EI that compare AA samples to other samples that reflect other racial, ethnic, and cultural groups 91

Summaries of research pertaining to the relationship of EI to demographic, psycho-social, and experiential factors among AAs 98

Review of Studies Most Relevant to This Study 104

3. Methodology 109

Introduction 109

Description of the Target Population, Accessible Population, and Sample 109

A priori power analysis 110

Methodology and Design 112

Instrumentation 112

Funderburk's AAAEIS 112

Petrides' TEIQue and TEIQue-SF 120

The Schedule of Racist Events 122

Measure of demographic factors 124

Data Collection Procedures 124

Data Preparation and Analysis Procedures 126

Data preparation 126

Preliminary analysis 126

Data analysis procedures 127

4. Results 128

Introduction 128

Description of the Study Sample 129
Data Preparation and Preliminary Analyses, by Instrument 133
Missing data 133
Preliminary analyses 142
Descriptive Statistics, by Instrument 152
Description of results for COVID items 152
Description of results for Funderburk's AAEIS items 152
Description of results for Petrides' TEIQue-SF items 163
Description of results for Klonoff and Landrine's SRE Items 168
Correlations Among Subscales, by Instrument 182
Correlation results for the AAEIS subscales 183
Correlation results for TEIQue-SF subscales 185
Correlation results for SRE subscales 186
Reliability of Measures 187
Results of reliability for the TEIQue-SF 187
Results of reliability for the SRE 187
Results for Research Question 1 188
Results for Research Question 1a 188
Results for Research Question 1b 191
Results for Research Question 1c 191
Results for Research Question 2 194
Reliability of the AAEIS 194

Validity of the AAEIS 196

Preliminary Analyses and Additional Data Preparation for Research Question 3 219

Outlier analysis 220

Multicollinearity 221

Correct specification of the dependent variable and independent variables 221

Reliable measurement of dependent and independent variables 223

Linear relationship between independent and dependent variables 225

Normality of residuals 227

Independence of residuals 229

Homoscedasticity 230

Additional Data Preparation for Research Question 3 232

Post-hoc power analysis 233

Results for Research Question 3 238

Results for Research Question 3.a 238

Results for Research Question 3.b 242

Summary 243

Results of Additional Exploratory Analyses 244

Summary 261

5. Conclusions, Implications, and Recommendations 263

Introduction 263

Summary of the Study 264

Summary of Study Findings 271

Results for Research Question 1 271

Results for Research Question 2 277

Results of preliminary analyses and additional data Preparation for Research Question 3 284

Results for Research Question 3 289

Results of the additional, exploratory analyses 293

Conclusions and Inferences for the Research Questions 300

Conclusions and inferences for Research Question 1 300

Conclusions and inferences for Research Question 2 311

Conclusions and inferences for Research Question 3 322

Implications 326

Implications for theory 327

Implications for research 333

Implications for practice 342

Study Delimitations, Limitations, and Generalizability 345

Delimitations 345

Limitations 346

Generalizability 348

Recommendations for Research and Practice 349

Recommendations for further research… 349

Recommendations for practice 360

References 364

Appendices 376

Appendix A. IRB Approval and Application 377

Appendix B. Permission to Use Instruments 407

Appendix C. Additional Analysis Materials, Tables, and Figures 411

Appendix D. Raw Data 421

List of Figures

Chapter 1

1.1 Goleman's graphic depiction of the main components of EI (1998) 4

Chapter 2

2.1. Goleman's framework of emotional competencies (Goleman, 1998, p. 2) ...52

Chapter 4

4.1. Q-Q plot for the distribution of AAEIS total scores 144

4.2. Box plot for the distribution of AAEIS total scores 145

4.3. Q-Q plot for the distribution of TEIQue-SF total scores 145

4.4. Box plot for the distribution of TEIQue-SF total scores 146

4.5. Scatterplot of AAEIS by TEIQue-SF scores 147

4.6. Scree plot for six-factor exploratory factor analysis of AAEIS Items 1-15 202

4.7. Scatterplot of residual versus predicted values from the linear regression analysis of the relationship between seven IVs and AAEIS Total Scores as the DV (*n*=69) 226

4.8. Scatterplot of residual versus predicted values from the linear regression analysis of the relationship between nine IVs and AAEIS Total Scores as the DV (*n*=61) 226

4.9. Histogram depicting the distribution of residuals for the *n*=69 data set 228

4.10. Histogram depicting the distribution of residuals for the *n*=61 data set 229

4.11. Graph of the relationship between unstandardized and Studentized residuals (*n*=69) 231

4.12. Graph of the relationship between unstandardized and Studentized residuals (*n*=61) 232

List of Tables

Chapter 1

1.1. Overview of Prominent Models and Corresponding Measures of Emotional Intelligence 5

1.2. Dimensions of Emotional Intelligence Included in Prominent Models 7

Chapter 2

2.1. The Sampling Domain of Trait EI in Adults (Petrides, 2009) 49

2.2. Bar-On's framework emotional intelligence and his EQ-I (2006, p. 11) 54

2.3. Summary of Measures of Trait EI Prepared by Perez et al., 2005 (pp. 130-133) 56

2.4. Reliabilities and Descriptive Statistics for the TEIQue 15 Facets, Factors, and Global Score (N = 227; Andrei et al., 2015, p. 38) 63

2.5. EQ-I Scales and Associated Competencies, Skills, and Facilitators, Adapted from Bar-On (2006) 68

Chapter 3

3.1. The Study's Accessible Population and Sampling Design, Based on 2020 Data 111

3.2. Summary of the Researcher's and External Panelist's Analysis of Dimensions and Direction of the Items in AAEIS 116

3.3. Quotes from External Panelists on Items on Which They Disagree on Item Direction Scoring 118

3.4. Summary of Additional Comments from Panelist #2 on AAEIS Items 1-15: Perceptions of Healthy and Unhealthy Aspects of EI from Eurocentric and Afrocentric Perspectives 119

Chapter 4

4.1. Descriptive Characteristics of the Sample 130

4.2. Number of Missing Responses, by Survey Scale 135

4.3. Number of Missing Responses in SRE Subscales for Selected Participants 137

4.4. Results of Univariates Tests of Normality for Emotional Intelligence Measures (*n*=70) 143

4.5. Z-Score Results of Bivariate Analyses of Outliers in Paired Measures of EI 147

4.6. Results of Multivariate Outlier Analyses, Unimputed Data Set, *n*=69 149

4.7. Item Responses and Scale Scores for P31, P39, and P28 149

4.8. Results of Multivariate Outlier Analyses, Unimputed Data Set, *n*=61 151

4.9. Summary of Responses on COVID-19 Items, by Subsample and Sample..153

4.10. Summary of Responses on Funderburk's AAEIS Items, by Subsample and for the Total Sample 156

4.11. Summary of Responses on Petrides' TEIque-SF (*n*=42) 164

4.12. Summary of Responses on Schedule of Racist Events SRE, by Subscale. 169

4.13. Results of Spearman's Correlation Analyses for AAEIS Subscales (*n*=70) 184

4.14. Results of Spearman's Correlation Analyses for TEIQue-SF Subscales[1] (*n*=42) 186

4.15. Results of Spearman's Correlation Analyses for SRE Subscales (*n*=70) ..186

4.16. Results for the Total Sample on the AAEIS (*n*=69) 190

4.17. Results for the Total Sample on the TEIQue-SF (*n*=42) 192

4.18. Results of Spearman's Correlation Analyses for AAEIS and SRE Subscale Score(*n=69)* 194

4.19. Results of Spearman's Correlation Analyses for TEIQue-SF and SRE Subscales (*n*=37) 195

4.20. Results of Corrected Item – Total and Alpha-If-Item-Deleted Analyses for AAEIS Items (*n*=69) 197

4.21. Correlations of AAEIS Scale and Subscale Scores to TEIQue-SF Scale and Subscale Scores as an Index of Criterion Validity (*n*=42) 199

4.22. Overall Results of the Six-Factor Exploratory Factor Analysis for AAEIS Items 1-15 (*n*=69) 202

4.23. Selected Results of the Six-Factor Exploratory Factor Analysis Compared to Design Features of the AAEIS (*n*=69) 203

4.24. Overall Results of the Five-Factor Exploratory Factor Analysis for AAEIs Items 1-15 (*n*=69) 207

4.25. Summary of Factor Loadings from the Rotated Matrix for the Five-Factor Solution[1] 208

4.26. Summary of EFA Results for AAEIS Items 1-15 Using a Five-Factor Solution (*n*=69) 213

4.27. Results of Multicollinearity Analysis with AAEIS Total Scores as the Dependent Variable, *n*=69 222

4.28. Results of Multicollinearity Analysis with AAEIS Total Scores as the Dependent Variable, *n*=61 222

4.29. Results of Univariate Tests of Normality of AAEIS Data (Funderburk, 2007), *n*=69 and *n*=61 228

4.30. Dummy Coding Scheme for Categorical Variables included in Analyses for Research Question 3 233

4.31. Results of Multiple Linear Regression Analysis, for AAEIS Total Scores and Seven Independent Variables (*n*=69) 235

4.32. Results of Multiple Linear Regression Analysis, for AAEIS Total Scores and Nine Independent Variables (*n*=61*)* 236

4.33. Results of Multiple Linear Regression Analysis, for TEIQue-SF Total Scores and Nine Independent Variables (*n*=42) 239

4.34. Model Summary for Multiple Regression Analysis of the Relationship of Three IVs to AAEIS Total Scores (*n*=69) 240

4.35. Results of Multiple Regression Analysis of the Relationship of three IVs to AAEIS Total Scores (*n*=69) 240

4.36. Model Summary for Multiple Regression Analysis of the Relationship of Two IVs to AAEIS Total Scores (*n*=61) 241

4.37. Results of Multiple Regression Analysis of the Relationship of Two IVs to AAEIS Total Scores (*n*=61) 242

4.38. Model Summary for Multiple Regression Analysis of the Relationship of One IV to TEIQue-SF Total Scores (*n*=42) 243

4.39. Results of Multiple Regression Analysis of the Relationship of One IV to TEIQue-SF Total Scores (*n*=42) 243

4.40. Results of EFA for AAEIS Items 1-15 and TEIQue-SF Items: Factors, Eigenvalues, and Variance Explained (*n*=69) 246

4.41. Results of EFA for Selected AAEIS and TEIQue-SF Items: Rotated Component Matrix (*n*=69) 248

4.42. Results of EFA for Selected AAEIS and TEIQue-SF Items: Primary Item Loadings, by Factor (*n*=69) 250

Chapter 5

5.1. Summary of Descriptive Analyses of Responses to AAEIS Items 1-15, by Subscale (*n*=69)[1] 302

Chapter 5 (cont.)

5.2. Summary of Descriptive Analyses of Responses to TEIQue-SF Items, by Subscale (n=69)[1] 305

5.3. Attention to Self-Control/Conflict Avoidance and Conflict Engagement in Selected EI 330

Acknowledgements

First and foremost I want to acknowledge my wife and let her know how appreciative I am for her support over the years. For all those mornings she was alone as I would be long gone, working on my dissertation. For all those vacations when I spent the first few hours of just about everyday in the lobby Business Center researching while she and my son would wait for my return. For encouraging me when there seemed to be no light at the end of the tunnel. These and many other things I love and am grateful for her.

My second acknowledgement has to go to Dr. Marcinkowski (Dr.M) for getting me to this point. It has been a long time coming. I have to thank you for your patience and at times your push for me to meet the challenges of this research. Your honesty and candor has taught me a great deal not only the subject matter but about myself as well.

I want to acknowledge Dr. Park who helped me navigate the statistic components of my research.

Dr. White who I met later in my research, but jumped right in to support me when SPSS had roadblocks.

Dr. Harrell, whom I always admired, as one of most engaging professors at FIT, and there for me at each milestone.

I want to thank Dr. Miedema for spending the time with me at the start of my journey, I will not forget your insightfulness and support that you have provided to me over the

years. The opportunities you have granted me has made me a better educator and a stronger person.

I want to thank Dr. Mark Quathamer as you have been so supportive at the onset of my research. You have helped me lay the data foundation that allowed me to move forward.

I want thank Nancy Garmer, Jared Campbell, Monica Defelice-Robinson, Chelsea Stripling and Anna Kephart for being there for me when I need their expertise in finding resources and navigating the reference tools I needed.

To Dr. Ervin Jackson- the Heart and Soul of the MMI

Chapter 1

Introduction

Background

The psychometric view of social intelligence has its origins in E.L. Thorndike's (1914) division of intelligence into three facets: a person's ability to understand and manage ideas (abstract intelligence), concrete objects (mechanical intelligence), and people (social intelligence). In his classic formulation: "By social intelligence is meant the ability to understand and manage men and women, boys and girls -- to act wisely in human relations" (1920, p. 359).

Overview of theories and models of emotional intelligence. Since the time of Thorndike (1914), a number of conceptualizations of emotional intelligence (EI) appeared which have created an interesting mixture of confusion, controversy, and opportunity regarding the best approach to define and measure this construct. In an effort to help clarify this situation, the *Encyclopedia of Applied Psychology* (Spielberger, 2004) suggested there were three major conceptual models: (a) the Salovey-Mayer model (Mayer & Salovey, 1997) which views this construct as the ability to perceive, understand, manage and use emotions to facilitate thinking, measured by an ability based measure (Mayer et al., 2002); (b) the Goleman model (1998) which views this construct as a wide array of competencies and skills that drive managerial performance, measured by a multi-rater assessment (Boyatzis, 2006; Boyatzis, Goleman, & HayGroup, 2001); and (c) the Bar-On model (1997b, 2000) which describes a cross-section of interrelated

emotional and social competencies, skills and facilitators that impact intelligent behavior, measured by self-report (1997a, 1997b) within an expandable multimodal approach including interview and multi-rater assessment (Bar-On & Handley, 2003a, 2003b).

Two of these three conceptual models, as well as two additional models, are described in the literature by Psicothema (2006). The *ability model*, developed by Salovey and Mayer, focuses on an individual's ability to process emotional information and use it to navigate their social environment (Salovey, Mayer, & Caruso, 2004). Mayer and Salovey described emotional intelligence as: "… the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (1997, p. 197).

Schutte's model of emotional intelligence "is based on Salovey and Mayer's (1990) original model of emotional intelligence. Schutte's model proposed that emotional intelligence consists of appraisal of emotion in the self and others, expression of emotion, regulation of emotion in the self and others, and utilization of emotion in solving problems" (Schutte, Malhouff, & Bhullar, 2009, p. 1). As described previously, in later years, Mayer and Salovey developed and argued for an ability model, while Schutte focused on EI as consisting of this set of characteristics or traits.

The *trait model* developed by Petrides, "encompasses behavioral dispositions and self perceived abilities and is measured through self report" (Petrides & Furnham, 2001, p. 426). Petrides proposed a conceptual distinction between the ability based model and a trait based model of EI and has been developing the latter over many years in numerous

publications (e.g., Petrides & Furnham, 2001; and Petrides, Pita & Kokkinaki, 2007). Trait EI is "a constellation of emotional self-perceptions located at the lower levels of personality" (Petrides, Pita, & Kokkinaki, 2007, p.246). Results from Petrides' measure are discussed with explicit reference to established models of personality and indicate that trait EI can be conceptualized as a distinct composite construct at the primary level of hierarchical trait structures.

Goleman's (1988) *mixed model* is a combination of both ability and trait EI. This model focuses on EI as a wide array of competencies and skills that drive leadership performance. Goleman's model outlines five main EI constructs: self-awareness, self-regulation, motivation, social skills, and empathy (Figure 1.1, p. 4). Goleman includes a set of emotional competencies within each construct. Emotional competencies are not innate talents, but rather learned capabilities that must be worked on and can be developed to achieve outstanding performance.

Goleman posits that individuals are born with a general emotional intelligence that determines their potential for learning emotional competencies. Goleman's model of EI has been criticized in the research literature as mere "pop psychology" (Mayer, Roberts, & Barsade, 2008).

Bar-On's definition of emotional intelligence presents a second *mixed model* of ability and personality characteristics that describe one's EI. In his work, Bar-On defined EI as a compilation of emotional and social competencies, primarily skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands (Bar-On, 2005).

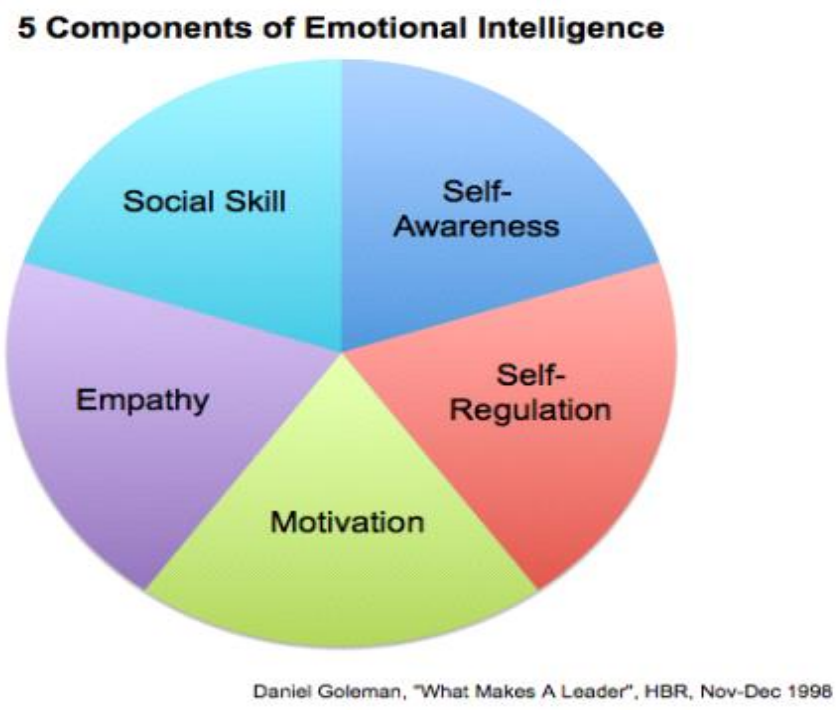


Figure 1.1. Goleman's graphic depiction of the main components of EI (1998)

Overview of models and measures of emotional intelligence. Holmes (2008, p. 37) developed a chart that summarized the main features of three of the models described above: the Mayer-Salovey ability model, and Goleman's and Bar On's mixed models. I modified that chart to include Petrides' trait model and Schutte's mixed model, as well as the measures that correspond to each of these five models (Table 1.1, p. 5). From this and other sources, I developed a chart to compare the major dimensions of EI across these five models (Table 1.2, p. 7).

Table 1.1

*Overview of Prominent Models and Corresponding Measures of Emotional Intelligence**

Model	Description of the Model	Description of Corresponding Measures
Mayer-Salovey Ability Model	The ability to perceive emotions, to access and generate emotions to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions to promote emotional and intellectual growth	The Multifactor Emotional Intelligence Scale (MEIS) was the first published ability measure designed to assess emotional intelligence. It was developed to serve as a comprehensive measure of the four-branch model of emotional intelligence. The MEIS has four branches comprising 12 subtests: *perceiving/ identifying emotion, assimilation of emotions, understanding emotions, and managing emotions* (Mayer, Salovey, Caruso, & Sitarenios, 2001). The MSCEIT contains a series of emotion-based problem solving items, with answers deemed correct by consensus. The MSCEIT consists of 141 items in four sub-scales: *perceiving emotions, facilitating thoughts, understanding emotions, and managing emotions.*
Schutte Ability Model	The Assessing Emotions Scale, also called the Schutte Emotional Intelligence Scale or Self-Report Emotional Intelligence Test, is based on Salovey and Mayer's (1990) model. That model indicated that EI consists of appraisal of emotion in one's self and others, expression of emotion, regulation of emotion in one's self and others, and utilization of emotion in solving problems.	Schutte's measure goes by different names and acronyms, "for the sake of clarity, I used SSEIT in prose throughout this proposal." The SSEIT includes a 33-item self-report using a 1 (strongly agree) to 5 (strongly disagree) scale for responses. Each sub-test score is graded and then added together to give the total score for the participant (Schutte, Malouff, & Bhullar, 2008).
Petrides' Trait Model	Conceptualization of EI as a personality trait defined the construct in a way that lies outside the taxonomy of cognitive ability. This is an important distinction in that it bears directly on the operationalization of the construct and the theories and hypotheses that are formulated about it (Petrides & Furnham 2001).	The TEIQue provides an operationalization model of Petrides and colleagues, that conceptualizes EI in terms of personality. The test encompasses 15 subscales organized under four factors: *well-being*, *self-control*, *emotionality*, and *sociability*. The psychometric properties of the TEIQue were investigated in a study on a French-speaking population, where it was reported that TEIQue scores were globally normally distributed and reliable (Petrides & Furman, 2003; Mikolajczak, Luminet & Roy, 2007)

Table 1.1 (cont.)		
Bar-On's Mixed Model	A compilation of emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands.	The EQ-I is a self-report instrument that measures socially and emotionally intelligent behavior and then provides an estimate of one's emotional social intelligence. EQ-I contains 133 items in the form of short sentences and employs a 5-point response scale with a textual response format ranging from very seldom or not true of me (1), to very often true of me or true of me (5) *(*Bar-On, 2006).

Note: Table 1.1 is adapted from Holmes, 2008, p. 38.

Measures based on models of emotional intelligence.

Measures of the Mayer-Salovey Ability Model. Mayer and Salovey developed a measure, the Multifactor Emotional Intelligence Scale (MEIS), which is a paper-and-pencil ability-based measure of emotional intelligence. The MEIS yields an overall emotional intelligence score, four sub-scores that correspond to the four branches of the Mayer and Salovey (1997) model of EI and 12 scores for individual subtests with a total of 185 items. More recently, they developed a newer ability measure of emotional intelligence, the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002). The MSCEIT is shorter than the Multifactor Emotional Intelligence Scales, has adequate internal consistency reliability, and demonstrates strong convergence between two scoring methods. However, when permission was sought to use either the MEIS or the MSCEIT in this study, this request was denied, primarily due to the training required of the research supervisor to ensure that it would be scored properly. The cost of using the MSCEIT also was prohibitive.

Table 1.2
Dimensions of Emotional Intelligence Included in Prominent Models

	Major Dimensions of Emotional Intelligence								
	Focus on Self (Internal)							Focus on Others (External)	
	Cognitive		Affective		Cognitive-Behavioral			Perspective & Empathy	Social Skills
						Self-Regulation			
Selected Model	Recognize & Reflect on One's Own	Recognize & Reflect on Others	Open to & In Touch With Own	Autonomy & Motivation	Expression	Reactive & Interactive	Proactive		
Mayer, Salovey & Caruso's Ability Model (2001)	Perceive, Understand	Perceive, Understand	Open, Feel, Appreciate		Communicate	Employ, Use, Manage	Employ, Use, Generate		
Shutte's Model (2008)	Appraisal in Self	Appraisal in Others			Expression	Regulation	Utilization		
Petrides' Trait Model (2009)	Emotion Perception	Emotion Perception	Emotionality	Well-Being, Motivation	Expression, Assertiveness	Self-Control	Adaptability	Empathy	Soci-ability
Goleman's Mixed Model (2003)	Self-Awareness			Motivation		Self Regulation		Empathy	Social Skills
Bar-On's Mixed Model (2006)	Self-Regard Self-Aware Reality-Testing		Self-Regard	Independence General Mood	Assertiveness	Stress-Management	Adaptability, Self-Actualization	Empathy	Inter-personal

Note. In part, this chart was adapted from five key components of EI outlined by Bar-On (2006, p. 14) and Petrides, Pita, and Kokkinaki (2007, p. 274).

Measures of Schutte's Trait Model. The Assessing Emotions Scale, also known as the Schutte Emotional Intelligence Scale, is based on Salovey and Mayer's (1990) original model of emotional intelligence. This model proposed that emotional intelligence consists of appraisal of emotion in the self and others, expression of emotion, regulation of emotion in the self and others, and utilization of emotion in solving problems. Subsumed under these branches are functions such as verbal and nonverbal appraisal and expression of emotion and using emotions to motivate as part of the utilization of emotions (Schutte et al., 2009, p. 2).

Schutte's Assessing Emotions Scale is a 33-item self-report inventory focusing on typical emotional intelligence. Respondents rate themselves on the items using a five-point scale. Respondents require on average five minutes to complete the scale. The most widely used subscales derived from these items are those based on factors identified by Petrides and Furnham (2001), Ciarrochi et al. (2001), and Saklofske et al. (2003). These four factors were: perception of emotions, managing emotions in the self, social skills or managing others' emotions, and utilizing emotions. Subsequent factor analytic studies provided support for four factors (e.g., Chapman & Hayslip, 2006; Saklofske et al., 2003), there has been some variation on which items load on which factors, and even on the number of factors (e.g., Austin, Saklofske, Huang, & McKinney, 2004 found three factors). Following an e-mail request, Schutte granted permission to use to this instrument in this study.

Measures of Petrides' Trait Model. Trait EI refers to an individual's self-perceptions of his/her emotional abilities. This definition of EI encompasses behavioral

dispositions and self-perceived abilities, and is measures on a self-report basis (i.e., as opposed to the ability-based test items in the MSCEIT). One of the more comprehensive and widely researched measures of this model is the Trait Emotional Intelligence Questionnaire (TEIQue), which was specifically designed to measure trait EI comprehensively, and is available in many languages.

The TEIQue provides an operationalization for the model of Petrides and colleagues, that conceptualizes EI in terms of personality (Petrides & Furnham, 2003). The test includes 153 items within 15 subscales organized under four factors: well-being, self-control, emotionality, and sociability. The psychometric properties of the TEIQue were investigated in a study on a French-speaking population, where it was reported that TEIQue scores were normally distributed and reliable (Mikolajczak & Leroy, 2007). Permission has been granted by Petrides to use the TEIQue in this study.

Measures of Goleman's Mixed Model. Between 1999 and 2007, Goleman worked with several colleagues to develop three measures of EI. In historical order, these were: (a) ECI, including the original version and ECI 2.0, (b) the ESCI, and (c) the EI Appraisal.

The Emotional Competency Inventory (ECI), was created in 1999 and is described as a 360-degree tool designed to assess the emotional competencies of individuals and organizations. It is based on emotional competencies identified by Goleman in *Working with Emotional Intelligence* (1998), and on competencies from Hay/McBer's *Generic Competency Dictionary* (1996) and from Boyatzis's (DATE) Self-Assessment Questionnaire (SAQ). The ECI contains 110 items. The ECI 2.0 measures

18 competencies organized into four clusters: Self-Awareness, Self-Management, Social Awareness, and Relationship Management.

The Emotional Intelligence Appraisal was created in 2001 and can be taken as a self-report or 360-degree assessment (Bradberry & Greaves, 2009). It is a measure of emotionally competent behavior that provides an estimate of one's emotional intelligence. Twenty-eight items are used to obtain a total EQ score and to produce four composite scale scores, corresponding to the four main sets of skills in Goleman's model of emotional intelligence (Bradberry & Su, 2003) that are measured by the ECI.

The Emotional and Social Competency Inventory (ESCI), a newer edition of the ECI, was developed in 2007. The Emotional and Social Competency – University Edition (ESCI-U) is also available. These tools developed by Goleman and Boyatzis provide a behavioral measure of the Emotional and Social competencies. It describes 12 competencies that differentiate outstanding from average performers. After review of my detailed proposal to the Korn Ferry Hay Group, the group that oversees requests to use Goleman's instruments, permission was granted to use the ESCI in this study.

Measures of Bar-On's Model. Bar-On's measure, the Emotional Quotient Inventory (EQ-I) focuses on the assessment of intrapersonal and interpersonal skills, and included scales to measure adaptability, stress-management, and general mood (Table 1.2, p. 7). It has been translated into more than 30 languages and used to collect data around the world. This self-report instrument measures social and emotional intelligent behavior and then provides an estimate of one's emotional-social intelligence (Bar-On, 2005), to gather empirical data to test and support his theory. The EQ-I contains 133

items in the form of short sentences and employs a 5-point response scale, with responses ranging from very seldom or not true of me (1), to very often true of me or true of me (5) *(*Psicothema, 2006). A list of the EQ-I items can be found in the instrument's technical manual (Bar-On, 1997b). The EQ-I is suitable for individuals 17 years of age and older, and takes approximately 40 minutes to complete. In addition, Bar-On developed a 60-item youth version of the EQ-I, the EQ-I:YV, which is applicable from 8 to 18 years of age, and takes approximately 15 minutes to complete (Bar-On & Parker, 2000).

Measures of EI for African-American Populations. During my review of literature, I found only one measures of EI that were developed for use with African-Americans, which is described below. During this search, other measures were found, such as Steinberg and Silverman's 20-item Emotional Autonomy Scale (EAS) developed early (1986) to assess adolescents' dependence on and autonomy from their parents. However, because the EAS was not designed for use with African Americans alone, but has been used in cross-cultural studies that included African-Americans (e.g., Schmitz & Baer, 2001), comparative measures and studies such as these are reviewed in Chapter 2.

Funderburk's measure. According to Funderburk, there were no existing valid and reliable measures of emotional intelligence for youth that used a sample of African-American adolescents large enough to influence its development (Funderburk, 2007). Thus, the purpose of Funderburk's dissertation (2007) was to develop a valid and reliable measurement tool of EI for African-American adolescents. This measure, the *African American Adolescent Emotional Intelligence Survey* (AAEIS) is a 20-item measure of emotional intelligence for individuals ages 13-19 (Funderburk, 2007). The AAEIS is

based on the theories of Goleman (1995), and Mayer, Salovey, and Caruso (1997), and was constructed to measure perception of emotion in self and others, action choice per situation, regulation of emotion, and empathy.

Funderburk's measure was divided into two sections, a managing emotions section and a perceiving emotions section. The managing emotions section includes 15 items. Each item presents a given situation and an action choice (e.g., "When I hear a rumor about someone, I usually ..."), and asks participants how they respond to that situation and action choice on a four-point scale (i.e., 1 = Almost Never to 4= Almost Always). In the perceiving emotions section, participants view five pictures with human faces that express various emotions, and then choose the emotion displayed in each using a multiple-choice format.

The items in the AAEIS were developed to assess the following Goleman's constructs: (a) Self-Awareness (four items); (b) Self-regulation (two items); (c) Social Awareness (one item); and (d) Social Skills (five items). Items within the AAEIS also were developed to measure features of Mayer, Salovey, and Caruso's (1997) framework, notably: (e) Perceived Emotion (four items); (f) Manage Emotions (two items); and (g) Understanding Emotions (one item).

The AAEIS was designed for use in a variety of settings including educational, clinical, and research (Funderburk, 2007). The AAEIS could be administered through a paper survey booklet and can be scored by the test administrator. There was no time limit for completing the survey although most survey participants completed it in 10 to 15 minutes. Funderburk offered several recommendations relevant to this study:

> Future research could distinguish the subtle nuances between the AAEIS and emotional intelligence tests devised for general populations to create one test that accurately measures the concept ... A final implication for research could be development of other emotional intelligence tests for various minority populations. (2007, p. 73)

Overview of research on EI in general and for the study population. As part of my search for and review of research, I located several meta-analyses and reviews of EI research within the dissertation literature (e.g., Martin, 2008; Michaelangelo, 2013; Sharma, 2015; Whitman, 2009) and the journal literature (e.g., Clarke, 2015; Durlak & Dymnicki, 2011; Harms & Crede, 2010; Martins & Ramalho, 2010; Miao & Humphrey, 2016; O'Boyle & Humphrey, 2011; Whitman, 2009). However, most of those focused on populations and applications of EI that were not relevant to this study (e.g., K-12 education, nursing education, stress and health factors, work attitudes, job performance, organizational leadership). Those that were relevant tended to present a rather bleak picture of the state of theory, measurement, and research on EI. For example, as of 2010, the authors of one meta-analysis characterized the general state of EI research as follows.

> Research and … practice in emotional intelligence have been impeded by lack of theoretical clarity regarding (a) the relative roles of emotion perception, emotion understanding, and emotion regulation facets in explaining job performance; (b) conceptual redundancy of El with cognitive intelligence and Big Five personality; and (c) application of the El label to [two] distinct sets of constructs (i.e., ability-based El and mixed-based EI). (Joseph & Newmann, 2010, p. 1).

The authors of an earlier meta-analysis offered similar comments and concerns. Many of the claims that have been put forth in relation to EI have not been substantiated by empirical research, especially on replication. Additionally, studies have not used the same, or even a few of the same, measures of EI … [Further] [a] primary concern with existing measures of EI is the shortage of evidence for their psychometric measurement properties. The manuals for measures of EI have indicated sufficient reliability but other studies have not consistently produced the same result. This led Davies et al. (1998), for instance, to argue that measures of EI suffer in terms of reliability. (Van Rooy & Viswesvaran, 2004, pp. 74-75).

The state of theory and research on EI described by Rooy and Viswesvaran (2004) served as the rationale and basis for their broad meta-analysis. They used the four-dimension classification of Salovey and Mayer (1990) and the five-dimension classification of Bar-On (1997a) as their analytic framework. Their findings were consistent with the review of models and measures presented in previous sections:

[t]he two most common measures used were the Bar-On (1997a) EQ-i and the 33-item Emotional Intelligence Scale (EIS; Schutte et al., 1998). The MEIS (Mayer & Salovey, 1997) was used in fewer studies than anticipated. Considering the amount of attention that has been given to the four dimensions of EI proposed by its authors, but this was most likely a function of the short lived nature of the MEIS (i.e., it was revised into a new instrument). Other common measures include the Trait Meta Mood Scale (TMMS;

Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), and the Emotional Competence Inventory (ECI; Sala, 2002). In all, five different measures of EI were

explored in this subgroup analysis: the MEIS, TMMS, EIS, Bar-On's EQ-i, and ECI. (Van Rooy & Viswesvaran, 2004 p. 76).

Following from this, I located several meta-analyses and reviews of research that pertained to the specific models and measures of EI identified by Van Rooy and Viswesvaran (2004) and described in previous sections. These are summarized, below.

Reviews of research pertaining to general models and measures of EI.

Reviews of research pertaining to Mayer and Salovey's model and measures. Of the two meta-analyses of research pertained to their ability model and associated measures, one was relevant to this study (Fan, Jackson, Yang, Tang, & Zhang, 2010).

Fan et al.'s (2010) meta-analysis came at a time when there was an ongoing debate about the factor structure of the MSCEIT (i.e., debating the four-factor structure that reflects Mayer and Salovey's four-branch model vs. other one-, two-, and four-factor models). Thus, they investigated three research questions. First, does a reliable high correlation between branches one and two of ability EI exist? Second, do reliable higher-order factors (e.g., Experiential and Strategic EI) and a general EI factor exist? These issues are related to the final, overarching question: which model best represents the factor structure of the MSCEIT? To address these issues, the present study evaluated the six competing models of MSCEIT structure … based on meta-analytic correlation matrices. (p. 782).

Their review included 18 studies that met their selection criteria. A careful review of these 18 studies indicated that only five had relied upon relevant samples of college students in the U.S., and none had relied solely on samples of AAs. Although four of

these five studies reported ethnic characteristics of their sample(s) (Mayer, Salovey, & Caruso, 2002: percent not available; Morrison, 2005: 1.6% AA; Rode et al., 2008, Sample 1: 1.8% AA, Sample 2: 3.3% AA; and Rossen et al., 2008: 14.7% AA), none of these studies described or analyzed their data for differences across the ethnic groups represented in their sample(s). For this reason, the methods and results of this meta-analysis are of limited relevance to this study. Although the MSCEIT was not be used in this study, Fan et al.'s findings served as a rich source of models and supporting research that can be used to help interpret the results of a factor analysis of MSCEIT data, and therefore clarify the number and nature of salient dimensions of EI.

Review of research pertaining to Schutte's model and measure. Schutte and her colleagues conducted several meta-analyses, although few have focused on EI. One that did focus on the relationship between EI and health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), and a second on the relationship between EI and romantic relationship satisfaction (Malouff, Schutte, & Thorsteinsson, 2014). Unfortunately, neither meta-analyses are of any relevance to this study. In the Schutte et al. (2007) meta-analysis, the sample included a total of 7,898 participants (ages 11-51) drawn from 35 studies, 20 of which used student samples. In specific, this meta-analysis analyzed 44 effect sizes, and found that higher EI was significantly associated with better health: EI "had a weighted average association of r = .29 with mental health, r = .31 with psychosomatic health, and r = .22 with physical health" (Schutte et al., 2007, p. 921).

Reviews of research pertaining to Petrides' model and measures. One meta-analysis of research pertained to Petrides' trait model and associated measure, the

TEIQue (Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016). These researchers were investigating

> [a] criticism leveled against the conceptualization of emotional intelligence (EI) as a personality trait … that it overlaps considerably with the higher order personality dimensions and, therefore, has weak utility. To investigate this criticism, a systematic review and meta-analysis were conducted to synthesize the literature examining the incremental validity of the two adult self-report forms of the Trait Emotional Intelligence Questionnaire (TEIQue). (2016, p. 261)

Their review included **"**[t]wenty-four articles reporting 114 incremental validity analyses of the TEIQue were reviewed according to the studies' methodological features. Additionally, data from 18 studies (providing 105 effect sizes) were pooled in a meta-analysis" (p. 261). Unfortunately, none of these 24 studies included an AA sample. Nonetheless, results indicated that the TEIQue consistently explains incremental variance in criteria pertaining to different areas of functioning, beyond higher order personality dimensions and other emotion-related variables. The pooled effect size was relatively small, but statistically and practically significant (DR2 D .06, SE D .0116; 95% CI [.03, .08]). Factor analyses indicated that the incremental contribution is due mainly to the well-being and self-control factors of trait EI.

Reviews of research pertaining to Goleman's model and measures. In repeated searches of the dissertation and journal literature, I was unable to locate any meta-analysis of research based solely on the use of measures that reflect Goleman's model (e.g., ECI, ESCI, Emotional Intelligence Appraisal). However, this body of research has

been included in broader meta-analyses and other reviews of research on EI, particularly those pertaining to leadership and work-related performance.

Review of research pertaining to Bar-On's model and measure. A paper by Bar-On (2006) presented and described the Bar-On Model of Emotional-Social Intelligence (ESI) and his Emotional Quotient Inventory (EQ-i). This review noted that "an analysis of variance of the North American normative sample (n = 3,831) was conducted to examine the effect of age, gender, and ethnicity on EQ-I scores (Bar-On, 1977b)" (2006, p. 16). He found that older people tend to be score significantly higher than younger people on the EQ-I scales (p. 16). With respect to gender, he reported that females tend to be more aware of their emotions, demonstrate more empathy, and have stronger interpersonal skills than males, although males have a higher intrapersonal capacity, and are more adept at managing emotions and being adaptable than females (p. 16). This is relevant due to plans to investigate gender differences in EI in this study.

Finally, he reported that there were no significant differences in emotional-social intelligence between the various ethnic groups that have been examined in North America (p. 16), although only 7% of this normative sample were African Americans, 3% Hispanic Americans, and 1% Native Americans. However, Quarterman (2011) conducted a study of the relationship between EI, as measured by the EQ-I, and 'transformational leadership skills' among 23 African American men and women. Results of this study indicated …

> … that a positive correlation existed for the [EI] attributes for African American men and women … [but] no significant correlation with [EI] and transformational

leadership skills for [them]" (p. iv). Quarterman recommended that [f]urther studies should be initiated to explore this research with a larger sample size and across ethnic groups. (p. iv).

Reviews of research pertaining to the purposes of and population in this study.

Reviews of research pertaining to this study's accessible population. As indicated in meta-analyses noted above, I found a substantial body of research pertaining to five models of EI for the general population. However, I did not find any meta-analysis of EI research pertaining to the target population in this study, AAs. One likely explanation for this is that the number of studies of EI using samples drawn from this population is too small to support a meta-analysis.

A thorough review of the literature revealed that only one empirical study examining emotional intelligence has been conducted on African American populations, which yielded significant results. Second, few studies on resilience have used African American college students as subjects. (Lewis, 2003, p. 3). Minimal discussion and exploration of the impact of racio-ethnic factors upon emotional intelligence has created a noticeable gap in the emotional intelligence literature. (Holmes, 2008, p. 7).

There has been minimal research conducted to analyze the EI of African American men and women in leadership positions. (Quarterman, 2011, p. 6). Perhaps the least-investigated category of EI research is the effect that an individual's race has on EI. Suzuki et al. (2014) examined 26 articles on the assessment and exploration of EI but found little completed research in the understanding of race, ethnicity, or culture on EI (Blakely, 2017, p. 16). Consistent with these statements,

repeated reviews of the dissertation literature and of the research journal literature resulted in only 12 studies whose primary focus was on EI among African American samples, including the instrumentation study by Funderburk (2007). Of those studies, six involved samples of college students, the accessible population in this study, while three involved samples of adolescents (Brown, 2017; Drati, 2010; Funderburk, 2007), three involved samples of adults (Grisette-Banks, 2014; Porter, 2017, Quarterman, 2009).

Despite the small number of studies of EI among AA college students, a range of factors thought to be associated with EI were investigated, including: the legacy of racism and associated cultural mistrust (Bell, 2003; Bowman, 2008; Gougis, 1983); family relationships and dynamics (Deams, 2007); socio-economic factors (Holmes, 2008; Porter, 2017); academic resilience and achievement (Bradshaw, 2008; Lewis, 2003).

Research on the influences of the legacy of racism on factors associated with EI found that, on average, AA students frequently exposed to racial prejudice, were likely to experience elevations in emotional stress, and emotional states characterized by anger, disgust, and distress (Gougis, 1983). Bowman's (2008) research also provided evidence about the relationship of racism to emotional health, and provided an understanding of how racism-related stress impacts the emotional well-being of those individuals.

The only study that I found that investigated the relationship of family dynamics to EI found a significant relationship between EI and parental acceptance (Deams, 2007). Similarly, the only study that I found that investigated the relationship of SES to EI found emotional intelligence to be significantly related to SES ($p < .05$) (Holmes, 2008).

I found several studies that investigated the relationship of EI to academic factors.

Gougis (1983) concluded that emotional stress resulting from race prejudice adversely affected study behavior and learning of experimental subjects, and that a similar process affecting blacks in the larger environment likely contributes to the observed black-white differential in academic achievement. Further, Lewis (2003) found differences in EI and related constructs among academically resilient vs. academically non-resilient AA undergraduate students.

Research pertaining to the relationship of gender to EI in this study's target population. Five studies explored this relationship among samples of AAs. Three of these studies investigated EI in samples of AA females. In a study of the relationship of EI to academic factors among female AA college students, Bradshaw (2008) did not find a statistically significant correlation between EI and either (a) academic performance (GPA) or (b) academic level; and found a weak correlation (c) between stress management and the academic performance.

Two studies investigated EI within samples of adult AA females. Grissette-Banks' (2014) study was the first to explore the EI among adult AA women leaders. Using a mixed-methods design, she collected data using Bar-On's EQ-I and from a focus group. This sample's Total EQ score of 110 was high, indicating a "well developed emotional capacity" (p. 79). The highest EQ-I mean scores were found on sub-scales for assertiveness, independence, and stress tolerance. From a leadership perspective, they perceived themselves to be successful (e.g., due to their influence and impact, and goal accomplishment), but identified interpersonal relationship-building as an area for improvement. (Grissette-Banks' 2014). In a more recent study, Porter (2017) used mixed

methods to explore EI among female AAs who were higher education administrators, primarily because racism, sexism, and other forms of discrimination and stereotyping have impeded the ability of AA women to attain management and decision making positions. Porter's quantitative findings indicated no relationship between SES and EI within this sample. However, during phone interviews (*n*=4), these participants indicated that EI played a positive role in their success (Porter, 2017).

One study investigated EI in a sample of AA males. Brown (2017) evaluated the effects of Project H.O.P.E. (Helping Our Young People Excel) by comparing the EI of project participants (AA males referred to alternative schools for disruptive behavior) and non-participants using Schutte's SSEIT. Project H.O.P.E. is offered at an alternative school in NC with a 4:1 student/teacher ratio, and relies on mentoring approaches found to be effective in addressing problems among youth. Brown found that "[t]he subscales *Perception of Emotion*, *Managing Others Emotions*, and *Utilization of Emotions* displayed Project H.O.P.E.'s largest impact on African American males".

Finally, Quarterman (2009) carried investigated the relationship existed between the emotional intelligence (EI) and transformational leadership among AA men and women. The study included AA men (*n*=8) and women (*n*=15) in management and leadership positions in the U.S. The EQ-I (Bar-On, 2006) was used to assess EI and the Multifactor Leadership Questionnaire, the MLQ5x (Avolio & Bass, 2004), was used to assess transformational skills. The sample's mean EI scores on the EQ-i was 111, which Bar-On characterized as *high, well- developed emotional capacity* (Bar-On, 2006). However, males tended to score higher on the *stress management* scale, while females

scored higher on the *interpersonal* scale, indicating "differences in the EQ-I composite scores of women compared to men" (p. 79).

Research Problem

In the literature, EI has been conceptualized and defined in several ways (Table 1.2, p. 7). Thus, there are multiple models and measures of EI (Table 1.1, p. 5). However, this and others' searches of the literature indicate that there is limited research in EI among AAs and in any segment of the AA population. These searches also indicate that there is a limited number of cross-cultural studies comparing EI in AA samples to EI in samples from other populations, although those studies tend to suggest that there were differences in EI across cultural groups.

In addition, literature searches revealed that only one measure of EI had been developed for use with any segment of the AA population. Funderburk's measure, the AAEIS, contained only 20 items. Those items reflected four components of Goleman's mixed model and four of Mayer, Salovey, and Caruso's ability model. However, four of those eight EI components were measured by only one or two items. In addition, Funderburk provide only partial estimates for the validity and reliability of the AAEIS.

In summary, the research problem in this study includes the limited state of theory, research, and measurement of EI as it pertains to AAs, and limited understanding of salient dimensions of EI among AAs as a whole and in any segment of the population.

Research Purpose and Questions

In light of this research problem, there are three purposes for this study. The primary purpose I assessed and described the conceptual and empirical dimensions of

emotional intelligence (EI) within a sample of African-American college students. The second purpose I further explored the validity and reliability of a measure of EI that was developed for use with African-Americans: the African American Emotional Intelligence Survey (AAEIS; Funderburk, 2007). The third purpose I determined which of these EI scales, sub-scales and may be valid and appropriate for use with this population of African-American college students.

To address these purposes, I sought permission to use Funderburke's AAEIS and five additional measures of EI in this study (i.e., Mayer, Salovey, & Carusos' MSEIT; Schuttte's SSEIT; Petrides' TEIQue; Goleman's ECI; and Bar-On's EQ-i). I obtained permission to use all of them of them, with the exception of Bar-On's EQ-i). Of these, the only instruments I administered to assess the EI of these students were: Funderburk's AAEIS (2007); and an instrument based on Petrides' EI trait framework, the TEIQue-Short Form (TEIQue-SF) (Petrides & Furnham, 2001). This study was be conducted at a public state college located in the Southeastern U.S.

Research questions. This study seeks to answer three specific research questions.

1. What are the features of emotional intelligence among African-American college students at a public state college in Central Florida as determined by:
    a. Funderburk's AAEIS;
    b. Petrides' TEIQue-Short Form (SF); and
    c. Klonoff and Landrine's Schedule of Racist Events?

2. To what extent is Funderburks' (2007) measure of emotional intelligence, developed specifically for African-American populations, valid and reliable for African-American college students at a public state college in Central Florida?
3. To what extent are demographic, experiential, and other background factors of these African-American college students related to their EI scale and subscale scores as measured by:
    a. Funderburk's AAEIS; and
    b. Petrides' TEIQue-SF?

Relevance and Significance of This Study

Personal relevance of the research topic. My interest in EI began while I was completing my take-home comprehensive exam; the question I chose focused on Emotional Intelligence. Before I could begin to investigate EI as it relates to AA, I needed to understand how it was or is defined. What research has been done? These questions had to be answered before I could even consider if the level of EI varies in the AA community and more specifically AA college students.

I believe that as a result of the hardships the AA community has had to endure since the inception of the 20th country, AAs have had to develop a greater level of EI, because without it we would not have survived as a racial, ethnic, or cultural group in the U.S. Further, as a former athlete attending a predominantly white college, I was aware that I was adapting and transitioning (e.g., by developing friendships with my white counterparts), although at the time I was oblivious to much of what was occurring, In a nutshell, this background information added clarity to my interest in this research topics,

as well as to my interpretation of the findings. I believe my experiences growing in a low SES contributed to my EI.

Relevance to the research context. As my research related to EI and the AA population expanded, it became clear that evidence supported the experiences of AAs: racism, discrimination, and stereotypic threats have impeded and continue to impede the development of EI in the AA population. These negative societal realities and factors seriously compromise the notion of acceptance while generating a culture of mistrust. Terrell and Terrell (1981) defined cultural mistrust as AA's mistrust and suspicion of Whites, which developed as a result of AA experience with racism. A review of the literature conducted by Williams, Neighbors and Jackson, (2003) indicated that the single most studied outcome of racial discrimination is psychological distress. Williams, Neighbors, and Jackson (2003) have argued that psychological distress as an outcome of race-related stress has been studied more than well-being, self-esteem, control/master, major depression, anxiety disorders, and other mental health disorders and anger combined, all of which appear to be related to dimensions of EI (Table 1.2, p. 7).

I would be remiss if I did not include the impact racism on the AA community as this relates directly or indirectly to EI (e.g., Landrine & Klonoff, 1996). A number of studies have investigated how the cardiovascular system is adversely impacted by perceived racism, specifically hypertension and cardiovascular disease (Clark et al., 2006). Evidence has shown that traditional AA college students are at risk for stereotype threats in academic settings when their racial identity is made salient. (Stone, 2012). Racial hostility on campus and a lack of social acceptance of the AA norms by the

dominant group can lead to excessive allegiance with same-ethnicity peers, further isolating AA students from experiences that can foster social and academic development. (Chickering & Reisser, 1993; Tatum, 1997).

Relevance to the research setting. I am a faculty member in Health Sciences at this state college, and now serve as the faculty lead on an initiative to address the issue of male AA student disproportionate retention and completion rates at EFSC. My study seeks to contribute to the limited literature on empirical dimensions of and factors that influence emotional intelligence (EI) among African-American college students. My plan was to select a stratified random sample from the accessible population of African-American students on each of the four campuses in the EFSC system and invite them to participate in his study. My intent is to make the results of this study available to EFSC administrators and faculty to inform and help guide this initiative, as well as to use the results of this study to support further research and analysis relevant to it.

Overview of the Research Design

This is a quantitative study. The administration of measures to members of the accessible population indicates that survey research served as the primary research methodology. In specific, five instruments has been administered to the study sample: (a) a researcher-constructed measure of student demographic and background factors associated with EI; (b) a five-item survey on the impacts of COVID on participants; (c) measure of EI developed for use with AA samples (Funderburk's AAEIS); d), Petrides' TEIQue-SF (Petrides & Furman, 2003) and (e) the *Schedule of Racist Events* (Landrine & Klonoff, 1996) due to prominence of experiences of racism and their relationship to EI.

The accessible population at this state college included a total of about 1,605 AA student; as of Spring 2020, 534 were male, and 1,065 were female. These students are unevenly distributed across four campuses. A stratified random sample of 50% male students and 25% female students were invited to participate in this study from each campus, approximately 268 male and 266 female. However, approximately one-half the AA students on each campus was asked to complete measures (a), (b), and (c) above, as well as one of the traditional measures of EI in (d).

All measures were administered electronically to students selected and invited to participate in this study. In order to gather data to answer the specific research questions, the resulting survey data were subjected to several kinds of statistical analysis: preliminary (e.g., outliers, missing values, multicolinearity, and regression assumptions), descriptive, correlational, psychometric, and multiple regression analyses. Thus, from a data analysis perspective, the research methodology used in this study also may be considered both correlational (Research Questions 1 and 3 (Quarterman, 2011), and instrument development and validation (Research Question 2).

Study Delimitations and Limitations

Delimitations. This study has been delimited in the following ways.

First, the target population for this study has been delimited to include only undergraduate AA college students. This reflects the research problem, specifically the fact there have been relatively few studies of EI where the sample study was drawn from this population, and that only one measure of EI were found that had been developed for use with this population.

Second, the accessible population for this study has been delimited to include only AA students at one state community college.

Third, the time period in which data collection took place has been delimited to one academic year, specifically the 2020 academic term. This delimitation reduces the potential influence of several threats to internal validity: if conducted over a longer period of time, (a) the possibility that personal and social development could contribute to differences in EI observed in study participants; and (b) the possibility that personal and wider societal historical events could have a greater influence on the EI responses of study participants. This delimitation reduces the chance that these could affect the internal validity of the study.

Fourth, on the basis of recent studies, I anticipated the likelihood of a decline in response rate if all four measures of EI were to be administered to all students in this accessible population. In an attempt to improve this response rate, a decision was made to pair Funderburk's AAEIS with one other tradition measure of EI, with each pair of EI measure to be administered to one-half of the randomly selected sample.

Finally, the procedures that were used to collect data from AA students at this university is delimited to the use of pencil-and-paper/electronic measures of personal background, emotions, and EI. Observations, interview data, journaling, and third-party observations were not used to gather data in this study. Rather, study participants were asked to respond to items in existing measures of EI, and the only chance they had to provide responses to open-ended questions were on the researcher-constructed measure of student demographic and background factors thought to be associated with EI.

Limitations. Due to the delimitations described above and to other factors that operate in a study such as this, there are several limitations to this study.

First, although efforts were made to gain permission to use existing measures of EI in this study, I was unable to gain permission to use either (a) Mayer, Salovey, and Caruso's measure of their ability model, or (b) Bar-On's EQ-i in this study. Of these, (a) was not available due to their requirement that my advisor complete training and certification requirements to score responses (D. Caruso, personal communication, November 15, 2017). Further, (b) was not available due to my inability to reach Bar-On, despite repeated attempts to locate and contact him. This is unfortunate, because each of these measures has been used in studies of EI among AAs.

Second, I was able to obtain permission to use the measures of EI developed by Funderburk (2007) in this study. However, I was unable to find any other studies that made use of Funderburk's, so the only results of data and psychometric analyses available for comparison purposes are those reported by Funderburk. For this reason, this study does seek to address this limitation through the analysis of psychometric properties of each based on data collected in this study.

Third, the study design calls for the development and use of a background and experiential measure. In the absence of such a measure, the items in this researcher-constructed measure was drawn from the limited number of available studies of EI that involved AA samples. One limitation associated with this is that there may be aspects of students' background and experiences that are highly relevant to aspects of EI that may be missed and therefore not measured. A second limitation associated with this is the

difficulty of piloting this measure. If this was done with students in the study's accessible population, it would either reduce the size of the population available to participate in this study or contaminate a segment of that population through prior exposure.

Fourth, given the limited size of the accessible population, there are two limitations associated with the sample of participants in this study: (a) Some members of this accessible population were unable and/or unwilling to participate in the study, and (b) Some loss of data and/or mortality among who agree to participate in this study voluntarily (e.g., due to non-completion of all measures of EI).

Finally, in light of the previous delimitation, the use of pencil-and-paper/ electronic measures require self-reporting. The validity and reliability of most of the existing measures of EI has been well established, and the validity and reliability of the measures developed by Funderburk is further explored in this study. Nonetheless, self-report studies have advantages as well as disadvantages due to the way subjects generally behave (Garcia & Gustavson, 1997). Self-reported answers may be exaggerated, (Northrup, 1996) participants may be too embarrassed to reveal private details; various bias may affect the results, like social desirability bias (Heppner et al., 2017).

Definition of Key Terms

Ability model: the EI model developed by Mayer, Salovey, and Caruso that includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Mayer, Salovey, & Caruso, 1997, pp.197).

Academically resilient: refers to the ability to thrive and achieve above average academic Performance (3.0 or greater GPA) despite economic, sociocultural, and/or environmental challenges (Lewis, 2007, p. 7).

Academically non-resilient: the inability to thrive and achieve above average academic performance (3.0 or greater GPA) regardless of economic, sociocultural, and/or environmental challenges (Lewis, 2007 p.7).

African American (AA): " 'Blacks or African Americans' refers to a person having origins in any of the Black racial groups of Africa" (The Black Population: 2010, 2010 Census Briefs, p. 2).

Cultural mistrust: A negative perception or lack of trust displayed by a client for his/her counselor. Quite often this occurs when counselors are White and the clients are Black (Gardiner, 2011).

Emotion: A pair of researchers compiled 92 definitions from the literature on emotion, and classified them into 11 categories on the basis of the emotional phenomena or the theoretical issues emphasized. As a working broad model, they offered the following definition: "Emotion is a complex set of interactions embedded in subjective and objective factors, controlled by neural and hormonal systems which can a) give rise to affective experiences, b) generate cognitive process c) activate widespread physiological adjustments d) lead to behavior that is sometimes is expressive, goal-directed and adaptive" (Kleinginna & Kleinginna, 1981, p. 355).

Emotional and social competence: This term is nearly synonymous with emotional intelligence (EI) and, more accurately, with emotional-social intelligence.

More succinctly, it refers to one's ability or capability to act in an emotionally and socially intelligent way. At times, the term "emotional-social intelligence" is used as an abbreviated description of emotional and social intelligence (Bar-On, n.d.).

Emotional and social intelligence: This term is synonymous with emotional intelligence (EI). It is often abbreviated as "emotional-social intelligence" by Reuven Bar-On and others (Bar-On, n.d.).

Emotional awareness: This term relates to being aware of one's emotions and constitutes, in and of itself, a very fundamental component of emotional-social intelligence. Methods used to study this component of EI have included the *Emotional Stroop Task,* self-report measures such as the *LEAS* (Levels of Emotional Awareness Scale), neural imaging, and lesions studies (Bar-On, n.d., EI Glossary).

Emotional competence: This term is nearly synonymous with emotional intelligence (EI). It was popularized by Carolyn Saarni (2000), who has described eight specific emotional and social skills that develop from early childhood (Bar-On, n.d., EI Glossary).

Emotional expression: This relates to the outward expression of emotions and feelings, first studied by Charles Darwin [1837-1872] (Bar-On, n.d.).

Emotional intelligence (EI): This is the emotional or EI component of human intelligence. The common components of EI that have appeared in various conceptualizations and definitions of this construct have included the following: (1) recognizing and understanding emotions and expression feelings, (2) recognizing and understanding the feelings of others, (3) managing and controlling emotions, (4) using

emotions and feelings in personal and interpersonal problem solving, and (5) generating emotions to motivate oneself (Bar-On, n.d.).

Emotional literacy: This term is used to denote the emotional-social intelligence construct that has been used primarily by those who have been applying EI in education, such as practitioners associated with CASEL (Collaborative for Academic, Social, and Emotional Learning). It has been replaced primarily by the term "SEL" ("Social Emotional Learning") and more recently by "emotional intelligence" ("EI"). More narrowly, this term refers to the ability to understand others' emotions or the way others feel (i.e., empathy) referring to only one fundamental and very important aspect of EI (Bar-On, n.d.).

Emotional skills: This term is loosely used to refer to skills associated with EI. It also suggests that the key factorial components of emotional intelligence (EI) are learned skills rather than abilities, competencies or traits (Bar-On, n.d.).

Ethnic identity: Ones' real awareness of himself within a specific group, which is followed by respect and pride. (Gardiner, 2005)

Ethnicity: A specific characteristic of a shared unique cultural tradition and heritage that persists across generations. (Gardiner, 2005)

Leadership: Leadership is a compilation of occupational status, role, and power. A leader is an individual who establishes relationships with followers through influential characteristics and functions (Yukl, 2009).

Mixed model- focuses on EI as a wide array of competencies and skills that drive leadership performance. Goleman's model consists of five main EI constructs: (1) self-awareness; (2) self-regulation; (3) social skills; (4) empathy; and (5) motivation (Goleman, 1998).

Racism/racial discrimination- racism and racial discrimination are defined as "actions, practices, and/or behaviors by members of socially dominant groups that have a differential and negative impact on members of socially subordinate groups" (Broman, 1996, p. 148). Landrine and Klonoff (1996) report that racist discrimination takes a variety of forms, including being called racist names, being discriminated against by various professionals and strangers, being accused or suspected of wrongdoing (cheating, stealing) and being discriminated against by institutions. (Bowman, 2008, p.10)

Racism-related stress: For the purpose of this study, this is defined as "the race-related transactions between individuals or groups and their environment that emerge from the dynamics of racism, and that are perceived to tax or exceed existing individual and collective resources or threaten well-being" (Harrell, 2000, p. 44).

Trait EI: refers to an individual's self-perceptions of their emotional abilities. This definition of EI encompasses behavioral dispositions and self-perceived abilities and is measured by self report (Petrides & Furnham, 2001, p.425-448).

Chapter 2

Review of Literature

Introduction

Over time, theorists and researchers have provided many different perspectives on EI. In the first section, I provided historical and definitional features EI to situate my study in the eclectic field. This background historical information leads into descriptions of EI and to an overview of definitions, theories, and models of emotional intelligence. In the second section, I review literature related to the research problem. The third section contains a review of prominent theories, models and frameworks of EI, including Ability, Trait and Mixed-models of EI. The third section presents a review of measures of EI associated with each of those models, including instruments relevant to this study's target population (i.e., male and female AA college students) and those that were used in this study. In the fourth section, I review research associated with EI in general, including these models and measures, as well as research on EI that involved AA samples and that compared EI among AA samples to EI in samples drawn from other racial, ethnic, and cultural groups. In the final section, I reviewed the five studies that are most closely related to this study.

Historical and Definitional Features of Emotions and Emotional Intelligence

Definitional features of emotion. Many have discussed and debated how to best describe or define two terms that are central to this dissertation study: *emotion* and *emotional intelligence*. A major problem in the field of psychology has been the wide variety of definitions for emotion that have been proposed. In the 19th century Darwin

argues that emotions served a purpose for humans, in communication and also in aiding their survival. He also argued that emotion evolved through natural selection. James (1884) argued that feeling and emotions are secondary to psychological phenomena. He proposed that the perception of what he called an "exciting fact" led to a psychological response known as emotion.

According to English and English (1958), emotions is virtually impossible to define, except in terms of different, sometimes conflicting, theories. Young (1973) concluded almost everyone except the psychologist knows what an emotion is…. The trouble with the psychologist is emotional processes and states are complex and can be analyzed from many points of view that a complete picture is virtually impossible. It is necessary to examine emotional events piecemeal and in different systematic contexts. (Kleinginna & Kleinginna, 1981, p. 345).

Emotions may be described as any conscious experience (Damasio, 1998; Davidson, 1994; Panksepp, 2005) characterize by intense mental activity and a certain degree of pleasure or displeasure (Cabanac, 2002; Scrist, 2011). Scientific discourse has drifted to other meanings and there is no consensus on a definition. "Emotion is often intertwined with mood, temperament, and personality, disposition and motivation" ("Portal: Emotions," n.d., para. 1).

Many definitions and theories of emotion include several features: emotion, experience, cognition, and/or behavior. There are any number of ways in which the relationships between or among these features can be represented (e.g., emotion is derived from experience or behavior; emotions either drive or follow from cognition).

For example, in some theories cognition is an important component of emotion. Although those acting primarily on emotion may seem as if they are not thinking, mental processes are still vital especially in the interpretation of events (e.g., if one thinks they are in a dangerous place, the body can respond by increasing the heart rate, blood pressure and breaths per minute). Other theories claim emotion is separate from and can precede cognition, and may be associated with past experience(s). For example, consciously experiencing an emotion involves exhibiting a mental representation of that emotion from a past or hypothetical experience, one which is linked back to a content state of pleasure or displeasure (Wilson & Dunn 2004). These content states are established by verbal explanations of experiences describing an internal state (Barrett, et al. 2007). Still other theorists posit that emotion is linked to behavioral tendency and the driving force of motivation positive or negative (Gaulin, et al., 2003). From these and other sources, it is apparent that emotion has been described from many different perspectives. Scherer (2004) wrote that there is no generally accepted definition of emotion. To some extent, the absence of a definition has had a negative effect on the field, for "without consensual conceptualization…of exactly what phenomenon is to be studied, progress in theory and research is difficult to achieve and fruitless debate are likely to proliferate" (p. 695).

In summary, emotion is difficult to define for several reasons. First, it is a psychological construct that cannot be observed directly (e.g., we can infer emotions from verbal and non-verbal cues). Second, emotion is a dynamic construct, with hypothesized relationships to experience, cognition, and behavior. Further, as in Bandura's ideas about reciprocal causation (Ormrod, 2012, p. 118), the relationships

among these features may be reciprocal (“Portal : Emotions,” n.d., para. 1), depending in part on factors associated with the person experiencing emotion, the immediate physical and social setting, and less immediate contexts that may influence their emotions (e.g., personal and cultural history). This dynamic view is consistent with and supported by theory and research associated with individual and social constructivism (e.g., the work of Piaget, Vygotsky, Bandura, and others).

Historical references to and descriptions of emotional intelligence. The psychometric view of social intelligence has its origins in E.L. Thorndike's (1914) division of intelligence into three facets: a person’s ability to understand and manage ideas (abstract intelligence), concrete objects (mechanical intelligence), and people (social intelligence). In his classic formulation: "By social intelligence is meant the ability to understand and manage men and women, boys and girls -- to act wisely in human relations" (1920, p. 359). Over the next 60 years, others expanded upon and shaped the ideas presented by Thorndike. In 1940, Wechsler suggested that affective components of intelligence may be essential to success in life (Cherniss, 2000). By the 1950s, humanistic psychologists such as Abraham Maslow described how people can build emotional strength (Moss, 1998). In the 1960s, a team led by David Krathwohl developed the *Taxonomy of Educational Objectives in the Affective Domain* (Krathwohl , Bloom & Masia, 1964), building upon the team’s earlier work on a taxonomy for the cognitive domain (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956).

However, terms closely related to EI did not appear in the literature until the 1980s. Some suggest this term was introduced in Payne’s dissertation in 1985 (e.g.,

Dhani & Shamar, 2016). Beasely (1987) introduced a closely related term, *emotional quotient* (EQ), in an article published in Mensa Magazine. Further, Reuven Bar-On claims to have used the term EQ in an unpublished version of his graduate thesis in 1988 (Beasley, 1987). In 1990, Salovey and Mayer publish their landmark article, *Emotional Intelligence*, in the journal *Imagination, Cognition, and Personality*. There, they defined EI as, "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, pp. 185-211). The concept of EI was popularized following the publication of Goleman's book *Emotional Intelligence: Why It Can Matter More Than IQ* (Goleman, 1995).

Overview of definitions, theories, and models of emotional intelligence. Since the1980s, a number of different conceptualizations of EI have appeared which have created an interesting mixture of confusion, controversy, and opportunity regarding the best approach to define and measure the construct of EI. In an effort to help clarify this situation in the *Encyclopedia of Applied Psychology,* Spielberger (2004) suggested that there are three major conceptual models: (a) the Salovey-Mayer model (Mayer & Salovey, 1997) which defines this construct as the ability to perceive, understand, manage and use emotions to facilitate thinking, measured by an ability based measure (Mayer et al., 2002); (b) the Goleman model (1998) which views this construct as a wide array of competencies and skills that drive managerial performance, measured by multi-rater assessment (Boyatzis, 2006; Boyatzis, Goleman, & Hay Group, 2001); and (c) the Bar-On model (1997b, 2000) which describes a cross-section of interrelated emotional

and social competencies, skills and facilitators that impact intelligent behavior, measured by self-report (1997a, 1997b) within a potentially expandable multimodal approach including interview and multi-rater assessment (Bar-On & Handley, 2003a, 2003b).

These and other major theorists have conceptualized and defined EI and the supporting construct, emotion, in slightly different ways. Schutte's (2008) conception of EI is based on and therefore is similar to Salovey and Mayer's (1990) original model of emotional intelligence. She "proposed that emotional intelligence consists of appraisal of emotion in the self and others, expression of emotion, regulation of emotion in the self and others, and utilization of emotion in solving problems" (p. 1). A third definition, associated with the trait model, was posed by Petrides and his colleagues. They saw EI as encompassing "behavioral dispositions and self perceived abilities and is measured through self report" (Petrides & Furnham, 2001, p. 426).

Differences in definitions that emphasized abilities and traits led others to develop definitions of EI that included both abilities and traits (i.e., mixed-model theorists). For example, Goleman (1995) described EI as a wide array of competencies and skills that drive leadership performance. Similarly, Bar-On (2005) defined EI as a compilation of emotional and social competencies, primarily skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands. In summary, nearly all of these definitions emphasize cognitive and behavioral processes associated with emotions, although the attention given to experience appears to differ from one to another.

In light of differences among these definitions, it is apparent that EI, similar to emotion, is difficult to define as a psychological construct with clarity or precision. Among theorists, it has been labeled by some as an "elusive concept" (Davies, Stankov & Roberts, 1998 p. 989). Others have raised the question whether there are too many intelligences (Hedlund & Sternberg, 2000). Still others have suggested that it has "proven resistant to adequate measurement" (Becker, 2003, p. 194). Finally, there has been an increase in broad public exposure to EI or EQ through newspaper and magazine articles (Gibbs, 1995), such as those that drew Goleman's book about EI (Goleman 1995). These popularizations equated EI with everything from *zeal* and *persistence* (Goleman, 1995, p. 285), to general character (Gowing, 2001 pp. 89-90).

Despite these differences and difficulties, many have expressed the viability of EI as a distinct and empirically based construct. For example, Goleman suggested that EI matters twice as much as IQ (1998, p. 31). Others point to the considerable body of research that suggests EI provides the basis of competencies important in almost any job (Cherniss, 2000, p. 10).

For the purposes of this study, EI is defined as the ability to monitor one's own and other people's emotions, to discriminate between different emotions and label them appropriately, and to use emotional information to guide thinking and behavior. Emotional intelligence also reflects abilities to join intelligence, empathy, and emotions to enhance thought and understanding of interpersonal dynamics.

Literature Related to the Research Problem

I found a substantial body of research pertaining to each of the prominent models and measures of EI. However, few studies of EI involving the target and accessible population in this study, AAs, were found for any of those theories and models. For example, I found that the study by Holmes (2008) was based on Mayer, Salovey, and Caruso's model, the study by Lewis (2003) on Schutte's model, the study by Abel (2013) on Petrides' model, and the study by Funderburk on Goleman's model. The study by Blakley (2017) reflected elements two of these models (i.e., Mayer et al. and Petrides). The results of this search have been echoed in past studies of EI involving AA samples.

> A thorough review of the literature revealed that only one empirical study examining emotional intelligence has been conducted on African American populations, which yielded significant results. Second, few studies on resilience have used African American college students as subjects. (Lewis, 2003, p. 3)
>
> Minimal discussion and exploration of the impact of racio-ethnic factors upon emotional intelligence has created a noticeable gap in the emotional intelligence literature. (Holmes, 2008, p. 7)
>
> A dearth of research studies has examined the psychological experiences of African American college student-athletes … research on the experience of African-American female student-athletes is lacking. (Sadberry, 2010, pp. vii, 22).
>
> There has been minimal research conducted to analyze the EI of African American men and women in leadership positions. (Quarterman, 2011, p. 6)

Repeated searches of the dissertation and journal literature resulted in only 12 studies whose primary focus was on EI in African American samples, including the instrumentation study by Funderburk (2007). Of those studies, six involved samples of college students, the accessible population in this study, while three involved samples of adolescents (Brown, 2017; Drati, 2010; Funderburk, 2007), and three involved samples of adults (Grisette-Banks, 2014; Porter, 2017; Quarterman, 2011).

Further, I was unable to find any meta-analysis of EI research pertaining to the target population in this study, AAs. One likely explanation for this is that the number of studies of EI using samples drawn from this population is too small to support a meta-analysis.

Finally, these searches of the literature indicated that only one measure of EI had been developed for and validated using AA samples. That measure, the AAEIS, was developed by Funderburk (2007). The AAEIS was based on Goleman's (1997) and Mayer, Salovey, and Caruso's (1997) work, and was constructed to measure perception of emotion in self and others. Limitations of this study included the small number of items (20) for the selected dimensions of EI, as well as the small homogenous samples which limited the AAEIS' external validity.

The second measure, the ACSSES, was developed by Bell (2003), focused on two specific dimensions of EI that reflected Bandura's work, self-efficacy and outcome expectations. One limitation of the ACSSES is that it appeared to measure a narrow set of dimensions of EI found in more established models such as Goleman's. A second limitation of Bell's study was the imbalance of gender within the sample, (i.e., females

made up 72% of the study sample). In light of these limitations, a decision was made not to include the ACSSES in this study.

The number of studies associated with any of the prominent theories and models of EI reflects several facets of this study's research problem: (a) the total number of studies of EI among AAs is small; (b) the number of studies associated with any model of EI appears to be limited to one or two studies; and (c) the total number of studies is large enough to support a narrative review, but remains too small to support a meta-analysis or vote-count review (Thacker, 1990). As a result, EI research pertaining to AAs remains difficult to locate, and prior narrative reviews of this research have been limited. Further, there appear to be only two measures of EI developed for use with AAs, each exhibiting limitations and each showing almost no use beyond the original study. As a result, (d) the body of research evidence that might suggest that any of these models and measures is appropriate for use with a distinct ethnic and cultural group such as AAs appears to be almost non-existent. These limitations in theory, measurement, and research was described in greater detail in subsequent sections.

Theories, Models and Frameworks of Emotional Intelligence

Three main approaches to studying EI have evolved. The first, typified by the research of Mayer Caruso and Salovey (2000) focuses on cognitive ability of EI (Ability model). The second presents EI as a set of personality traits (Trait model) based on the research of Petrides and Furnham (2001). The third approach reflects a mixture of ability and trait features, as is apparent in the work of Goleman (1995) and Bar-On (2005).

Ability models of EI. Two prominent models of EI have been developed that reflect this growing body of research, and the apparent support for conceptions of EI as a set of abilities.

Mayer, Salovey, and Caruso's model of EI. Mayer and Salovey developed the initial ability-based model. They viewed emotions as useful sources of information that help one make sense of and navigate the social environment (Mayer & Salovey, 1997; Salovey & Grewal, 2005). They proposed that individuals vary in their ability to process information of an emotional nature and to relate emotional processing to a wider cognition. These abilities manifests itself in four types of adaptive behaviors. Thus, their model includes four types of abilities.

1. *Perceiving emotions* – the ability to detect and decipher emotions in faces, pictures, voices, and cultural artifacts—including the ability to identify one's own emotions. Perceiving emotions represents a basic aspect of emotional intelligence, as it makes all other processing of emotional information possible.
2. *Using emotions* – the ability to harness emotions to facilitate various cognitive activities, such as thinking and problem solving. The emotionally intelligent person can capitalize fully upon his or her changes in mood in order to best fit the task at hand.
3. *Understanding emotions* – the ability to comprehend emotion language and to appreciate complicated relationships among emotions. For example, understanding emotions encompasses the ability to be sensitive to slight

variations between emotions, and the ability to recognize and describe how emotions evolve over time.

4. *Managing emotions* – the ability to regulate emotions in both ourselves and in others.

Therefore, the emotionally intelligent person can harness emotions, even negative ones, and manage them to achieve intended goals. (Salovey & Grewal, 2005, pp. 281-282). More recently, Mayer and Salovey advocated a pure ability conceptualization of EI. This conceptualization reflects a measurement approach that focuses on latent abilities assessed through performance tasks (Mayer, et al., 2004; Mayer, Salovey, Caruso & Sitarenios, 2003).

Schutte's model of EI. Schutte developed a second model drawing upon features of Mayer and Salovey's model. Despite the emphasis on ability in their 1990 model, Schutte contended that Mayer and Salovey described emotional intelligence as a mix of what might be considered abilities and traits (Schutte et al., 2009). We set out to base our measure of emotional intelligence on a theoretically cohesive and comprehensive model. We believe that the original model of Salovey and Mayer (1990) and the Mayer and Salovey (1997) revised model are the most cohesive and comprehensive models of emotional intelligence. This revised model seems to be an excellent process-oriented model that emphasizes stages of development in emotional intelligence, potential for growth and the contributions emotions make to intellectual growth. However, the original model of Salovey and Mayer (1990) lends itself better to conceptualizing the various

dimensions of an individual's current state of emotional development. Additionally, most dimensions of other models can be integrated into this model. (1998, p.169).

Thus, Schutte's Assessing Emotions Scale or the Schutte Emotional Intelligence Scale is based on Salovey and Mayer's (1990) original four-factor model of EI, as described above: perception of emotions, utilization of emotions, understanding emotions, and managing one's emotions. Subsumed under those are functions such as verbal and nonverbal appraisal and expression of emotion and using emotions to motivate as part of the utilization of emotions. Schutte et al. (1998) developed and validated a self-report scale within the trait EI framework that allegedly measures a homogeneous construct of EI (Petrides & Furnham, 2000).

In summary, in later years, Mayer and Salovey developed and argued for an ability model, while Schutte viewed EI as consisting of this set of characteristics or traits.

Trait models of EI. The first trait model of EI was developed by Petrides. He proposed a conceptual distinction between the ability based model and a trait-based model of EI, and worked on developing the latter over many years (e.g., Petrides & Furnham, 2000a; and Petrides, Pita & Kokkinaki, 2007). Petrides and his colleagues described trait EI as "a constellation of emotional self-perceptions located at the lower levels of personality" (Petrides, Pita, & Kokkinaki, 2007, p. 246). This model of trait EI "encompasses behavioral dispositions and self-perceived abilities and is measured through self report" (Petrides & Furnham, 2001, p. 426).

To generate an accurate representation of the personality dimensions covered by trait EI, a content analysis of prominent EI models (i.e., Bar-On, 1997b; Goleman 1995;

Salovey & Mayer, 1990) and related personality constructs, such as well–being and empathy, was undertaken (Petrides & Furnham, 2001). Only the core elements common to more than a single model of EI were retained, with singular facets unique to individual conceptualizations excluded. This method gave rise to the current trait EI sampling domain (Table 2.1).

Table 2.1

The Sampling Domain of Trait EI in Adults (Petrides, 2009)

Factors	Facets	High scorers perceive themselves as
Well-being		
	Trait optimism	Confident and likely to "look on the bright side" of life
	Trait happiness	Cheerful and satisfied with their lives
	Self-esteem	Successful and self-confident
Sociability		
	Emotion management (others)	Capable of influencing other people's feelings
	Assertiveness	Forthright, frank, and willing to stand up for their rights
	Social awareness	Accomplished networkers with excellent social skills
Emotionality		
	Trait empathy	Capable of taking someone else's perspective
	Emotion perception (self and others)	Clear about their own and other people's feelings
	Emotion expression	Capable of communicating their feelings to others
	Relationships	Capable of having fulfilling personal relationships
Self-control		
	Emotion regulation	Capable of controlling their emotions
	Impulsiveness (low)	Reflective and less likely to give in to their urges
	Stress management	Capable of withstanding pressure and regulating stress
Auxiliary facets		
	Self-motivation	Driven and unlikely to give up in the face of adversity
	Adaptability	Flexible and willing to adapt to new conditions

On the basis of this work, results from Petrides' measure of EI were discussed with explicit reference to established models of personality, and indicate that trait EI can be conceptualized as a distinct composite construct of personality traits that lie outside the taxonomy of cognitive ability (Petrides & Furnham 2001).

Modern trait EI theory explains how the various EI models, where they are meaningful, primarily refer to established personality traits. It can be extended to cover

several dimensions of intelligence, including intrapersonal, interpersonal, and social. For example, a focus on personality traits related to emotions yields emotional intelligence, while a focus on traits related to social behavior yields social intelligence. Through this strategy, these dimensions can be integrated into existing personality taxonomies, which is where they belong conceptually. In addition to linking these dimensions of intelligence to mainstream differential psychology, the trait intelligences framework offers concrete predictive and explanatory advantages. Carving up personality variances across specific content domains helps conceptualize it, thus increasing its explanatory power (Petrides & Furnham, 2003, p. 15).

In summary, Petrides suggests that research on the EI construct has grown immensely since 2000, and that the ability and trait conceptions of EI appear to coexist. Both reflect the long-standing idea that cognitive abilities are not the sole predictor of successful adaptation and that emotional competencies and dispositions need to be considered.

Mixed models of EI. Two models of EI have been developed which reflect this body of research, and support for conceptions of EI as both a set of abilities and a set of personality traits.

Goleman's mixed model of EI. The model introduced by Goleman focusses on EI as an array of competencies and skills that drive leadership performance. In this model, EI is defined as the capacity for recognizing one's own feelings and those of others, for motivating ourselves and managing emotions effectively in ourselves and others (Goleman, 1995). Goleman and others laid the groundwork for research into the

development of EI competencies in the workplace (Goleman, 1995, 1998b; Goleman, Boyatzis, & McKee, 2002). Those mixed-methods studies examined leaders' EI and discipline of personal mastery. In these studies, EI was found to be an important component of effective leadership (Bass, 2002; Caruso, Mayer & Salovey, 2002; George, 2000; Megerian & Sosik, 1996; Sosik & Megerian 1999), as was personal mastery (Covey, 1989, 1990; Senge, 1990; Senge et al., 1994).

This model reflects how an individual's potential for mastering the skills of Self-Awareness, Self-Management, Social Awareness, and Relationship Management translates into success in the workplace. Goleman and his colleagues have identified 20 competencies that nest in these four clusters of general EI abilities (Figure 2.1, p. 52). This framework suggests that we cannot demonstrate the competencies of trustworthiness and conscientiousness without mastery of the fundamental ability of Self-Management or the competencies of communication, influence, and conflict management, without mastering the ability to Managing Relationships.

This framework is a refinement of the model that Goleman presented in *Working with Emotional Intelligence* (1998). Goleman's framework identified five domains or dimensions of emotional intelligence that comprised twenty-five competencies. Three of those dimensions – Self-Awareness, Self-Regulation, and Motivation – described the personal competencies of knowing and managing emotions in oneself. Two dimensions – Empathy and Social Skills – described the social competencies of knowing and managing emotions in others.

The current model reflects recent statistical analyses by Boyatzis that supported collapsing the twenty-five competencies into twenty, and the five domains into four: Self-Awareness, Self-Management, Social Awareness, and Relationship Management (Boyatzis, Goleman, & Rhee, 2000).

	Self Personal Competence	**Other** Social competence
Recognition	**Self-Awareness** - Emotional self-awareness - Accurate self-assessment - Self-confidence	**Social Awareness** - Empathy - Service orientation - Organizational awareness
Regulation	**Self-Management** - Self-control - Trustworthiness - Conscientiousness - Adaptability - Achievement drive - Initiative	**Relationship Management** - Developing others - Influence - Communication - Conflict management - Leadership - Change catalyst - Building bonds - Teamwork & collaboration

Figure 2.1. Goleman's framework of emotional competencies (Goleman, 1998, p. 2)

Bar-On's mixed model of EI. Darwin's work on the importance of emotional expression for survival and adaptation (1872) influenced the ongoing development of the Bar-On model, which stresses the importance of emotional expression and views the outcome of emotionally and socially intelligent behavior in Darwinian terms of effective adaptation. Additional influence on Bar-On's thinking can be traced to Thorndike's (1914) description of social intelligence and its importance for human performance, as well as Wechsler's (1940, 1943) observation related to the impact of non-cognitive and

conative factors on what he referred to as emotional behavior (Bar-On, 2006).

According to Bar-On's model, emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills, and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands. These includes these five key components (Table 2.2, p. 54). Thus, this model includes on one's intrapersonal ability to be aware of oneself, to understand one's strengths and weaknesses, and to express one's feelings and thoughts nondestructively. On the interpersonal level, being emotionally and socially intelligent encompasses the ability to be aware of other's emotions, feelings and needs and to establish and maintain cooperative, constructive and mutually satisfying relationships. Being emotionally and socially intelligent means to effectively manage personal, social and environmental change by realistically and flexibly coping with the immediate situation, solving problems and making decisions. In order to do this, we need to manage emotions so that they work for us and not against us, and we need to be sufficiently optimistic, positive and self-motivated.

The development of this model was rigorous, and the outcome was a valid concept and measure of Emotional and Social Intelligence (ESI). This model is consistent and stable over time and across cultures, and is capable of describing this construct (emotional-social intelligence). The usefulness of Bar-On's model has been demonstrated by its ability to predict aspects of human behavior and performance. Furthermore, showing that EI is teachable and learnable, and that the ESI factors involved can be enhanced underscores the importance and usefulness of this model. (Bar-On, 2006).

Table 2.2

Bar-On's framework emotional intelligence and his EQ-i (2006, p. 11)

Appendix
The EQ-i scales and what they assess

EQ-i SCALES	The EI competencies and skills assessed by each scale
Intrapersonal	Self-awareness and self-expression:
Self-eegard	*To accurately perceive, understand and accept oneself*
Emotional self-awareness	*To be aware of and understand one's emotions*
Assertiveness	*To effectively and constructively express one's emotions and oneself*
Independence	*To be self-reliant and free of emotional dependency on others*
Self-actualization	*To strive to achieve personal goals and actualize one's potential*
Interpersonal	Social awareness and interpersonal relationship:
Empathy	*To be aware of and understand how others feel*
Social responsibility	*To identify with one's social group and cooperate with others*
Interpersonal relationship	*To establish mutually satisfying relationships and relate well with others*
Stress management	Emotional management and regulation:
Stress tolerance	*To effectively and constructively manage emotions*
Impulse control	*To effectively and constructively control emotions*
Adaptability	Change management:
Reality-testing	*To objectively validate one's feelings and thinking with external reality*
Flexibility	*To adapt and adjust one's feelings and thinking to new situations*
Problem-solving	*To effectively solve problems of a personal and interpersonal nature*
General mood	Self-motivation:
Optimism	*To be positive and look at the brighter side of life*
Happiness	*To feel content with oneself, others and life in general*

Measures of Emotional Intelligence

Each of the five models of EI described in the previous section has served as the basis for one or more measures of EI. In some cases, the original measure associated with each model was modified (e.g., shortened) or was used to develop new measures for different segments of society (e.g., for adolescents, colleges students, adults). Research studies were conducted to determine the psychometric properties of each of these measures and, eventually to enhance these measures. These instruments have been used in studies of different populations (e.g., males and females, athletes, business leaders), each of which helped further an understanding of EI and its development, dimensions,

and manifestations. Further, this work has stimulated the development of additional measures (e.g., Bell, 2003; Funderburk, 2007). Although there is no exhaustive list of all such measures of EI apparent in the literature, some have attempt to identify and characterize well-established measures, as illustrated in Table 2.3, p. 56. It is noteworthy that all five theorists and models presented in the previous section are represented there.

A measure associated with one of the models described in the previous section was used in this study: Petrides' TEIQue (trait model). Although permission was obtained to use measures associated with the models developed by Mayer, Salovey, and Caruso (ability), Schutte (ability), and Goleman (mixed), there were unique reasons why each measure was not used. However, these models and associated measures are described here because they underlie or are reflected in Funderburk's AAEIS. The description of measures not used in this study included a summary of psychometric properties and scoring. However, the description of measures that were used were not include information about these properties, as that information was be presented in greater detail in Chapter 3.

Ability measures of EI.

Measures of ability EI developed by Mayer, Salovey, and Caruso. In 1997, Mayer and Salovey developed the first published measure of ability EI, the Multifactor Emotional Intelligence Scale (MEIS), a paper-and-pencil measure. It was developed to serve as a comprehensive measure of their four-branch model of emotional intelligence (i.e., perceiving/identifying emotion, assimilation of emotions, understanding emotions, and managing emotions). These four branches are measured in the MEIS using 402 items in

Table 2.3

Summary of Measures of Trait EI Prepared by Perez et al., 2005 (pp. 130-133)

Summary of trait EI measures

MEASURE	AUTHORS	ALPHA	CONV. /DISCR. VAL.	STRUCTURE
TMMS (Trait Meta Mood Scale)	Salovey, Mayer, Goldman, Turvey & Palfai (1995)	0.70–0.85	Moderate correlations with the Big Five	3 factors, but no global score
EQ-i (Emotional Quotient Inventory)	Bar-On (1997)	Generally good (about 0.85)	Moderate to high correlations with the Big Five	Unclear
SEIS (Schutte Emotional Intelligence Scales)	Schutte *et al.* (1998)	0.70–0.85	Medium to high correlations with the Big Five	Unclear (3 or 4 factors?) global score
ECI (Emotional Competence Inventory)	Boyatzis, Goleman & Hay/McBer (1999)	0.70–0.85 for global score > 0.85 for social skills	Unclear (small samples); uncorrelated with critical thinking and analytical reasoning	Unclear (4 factors?)
EI-IPIP (Emotional Intelligence-based IPIP Scales)	Barchard (2001)	0.70–0.85	?	?
EISRS (Emotional Intelligence Self-Regulation Scale)	Martinez-Pons (2000)	0.75–0.94	Unclear	Unclear (1 factor?)
DHEIQ (Dulewicz & Higgs Emotional Intelligence Questionnaire)	Dulewicz & Higgs (2001)	Low to moderate (0.54–0.71)	Unclear	Unclear
TEIQue (Trait Emotional Intelligence Questionnaire)	Petrides, Pérez & Furnham (2003)	Generally good (about 0.85)	The TEIQue can be isolated in Giant Three- and Five-Factor space (Petrides, 2001)	4 factors, global score
SPTB (Sjöberg Personality Test Battery (EI Scale))	Sjöberg (2001)	0.70–0.85	Moderate correlations with extraversion (0.37) and Neuroticism (-0.50)	?
TEII (Tapia Emotional Intelligence Inventory)	Tapia (2001)	0.70–0.85	?	4 factors, global scale
SUEIT (Swinburne University Emotional Intelligence Test)	Palmer & Stough (2002)	Generally good (about 0.85)	Moderate correlations with neuroticism (-0.41), Extra-version (0.44), openness (0.27)	?
WEIP-3 (Workgroup Emotional Intelligence Profile (Version 3))	Jordan, Ashkanasy, Härtel & Hooper (2002)	0.70–0.85	Small to moderate correlations with TMMS	Unclear (7 factors?)
EIS (Emotional Intelligence Scale)	Van der Zee, Schakel & Thijs (2002)	Adequate for "other ratings" (0.70–0.85) Low for self-rating (< 0.60)	Low correlations with IQ. Moderate to high correlations with the Big Five	Unclear (3 factors)
WLEIS (Wong & Law. Emotional Intelligence Scales))	Wong & Law (2002)	0.70–0.85	Small negative correlations with IQ	4 factors, global score
LEIQ (Lioussine Emotional Intelligence Questionnaire)	Lioussine (2003)	0.70–0.85	Moderate correlations with the Big Five	Unclear (7 factors?)

Note. Information in this table is necessarily succinct and readers are encouraged to consult the original sources for specific details. Entries designated "unclear" do not necessarily indicate conflicting evidence, as they may also refer to lack of adequate data. Question marks indicate that Pérez *et al.* (2005) have been unable to obtain data from the relevant entry. Alpha = Reliability estimate Cronbach's α, Conv./ Discr. Val. = Convergent/ discriminant validity, Structure = Factor structure. (Adapted from Pérez *et al.*, 2005, pp. 130–133).

12 subtests (Mayer, Salovey, Caruso, & Sitarenios, 2001). Since the publication of the MEIS, other measures of ability EI have been developed and can be found in the literature.

The developers of the MEIS tried different approaches to identify the correct answers, including target scoring, consensus scoring, and expert scoring. *Target scoring* includes determining the correct answer by asking the person (i.e., the target) whose facial expressions are depicted in an item how he or she actually felt or what he or she was portraying when engaged in some emotional activity. *Consensus scoring* involves determining the correct answer by pooling the judgment of hundreds of people. This

scoring technique assess the extent to which the test takers choice matches the majority opinion. *Expert scoring* involves determining the correct answer by pooling the judgments of experts in emotions, and is most similar to that used in cognitive ability tests. Mayer et al. (2000) reported that the internal consistency reliability of the overall MEIS was 0.95. For consensus scored scales the average internal consistency was 0.77 across the four branch scores, and for expert score scales for the average internal consistency was 0.62 (Caruso, Mayer & Salovey, 2002; Matthews et al., 2002). Further, the test-retest reliability of the of the MEIS over a two-week period was 0.75, and of the MEIS branch scores ranged from 0.60-0.68. In contrast, reliability coefficients for cognitive ability tests typically range from 0.85-0.95 (Kaplan & Saccuzzo, 2001; Murphy & Davidshofer, 2001). In summary, studies had found that the MEIS contained several subscales with low reliability and had some problems with scoring procedures.

In 2002, Mayer, Salovey and Caruso developed a shorter instrument, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). Consistent with this model, the MSCEIT also is modeled on ability-based IQ tests, and tests a person's abilities in each of the four branches of emotional intelligence. The MSCEIT is based on a series of emotion-based problem-solving scenarios and items (Salovey & Grewal, 2005, Mayer, Caruso & Sitarenios. 2003, p. 99*).* It consists of 141 items and takes 30-45 minutes to complete. The MSCEIT provides 15 main scores: Total EI score, two Area scores, four Branch scores, and eight Task scores. In addition to these, there are three supplemental scores (Mayer, Salovey, & Caruso, 2002). The initial normative data for the MSCEIT was based on 5,000 people. The developers stated these were representative of the U.S.

general population in terms of gender, age, ethnicity and level of education. Evidence indicated that it had adequate internal consistency and strong convergence between consensus and expert scoring methods (Mayer, Salovey, Caruso, & Sitarenios, 2003).

The most recent version of the MSCEIT is Version 2 (V.2; (Mayer, Salovey, Caruso, & Sitarenios, 2003). Like the earlier version, the MSCEIT V.2 is designed to measure the four branches of Mayer and Salovey's EI ability model. It provides a total EI score four Branch scores based on both consensus and expert scoring. In a study by Mayer, Salovey, Caruso, and Sitarenios (2003), reliabilities at the total scale and Branch levels were all above 0.75. For all scales in the MSCEIT V.2, the average internal consistency reliability was .068 for consensus scoring and 0.721 for expert scoring. Their analyses have shown that the MSCEIT's items may capture differences in individuals only when such individuals are positioned at the low end of the EI trait distribution. For the individuals who score medium and high in EI), variations in their scores do not reflect true variation in EI.

In 2005, Mayer, Salovey and Caruso developed The Mayer-Salovey-Caruso Emotional Intelligence Test-Youth Version (Rivers, Brackett & Salovey, 2005). The MSCEIT-YV is appropriate for children 11 years to 17 years of age, which can be administered individually or in groups. The research version of the MSCEIT-YV contains 180 items divided among four sections, each representing one of the four domains of the four-branch model. Initial analysis by the test developers led to revised scoring procedures based on 97 items (Rivers et al., 2013). Two methods were used to assess the reliability of the MSCEIT-YV. First, because items were homogeneous within branches,

coefficient alpha values were calculated. Those alpha valued ranged from α = .70 to .79. Second, across branches, items were heterogeneous in form, and split-half reliabilities were calculated, using Spearman-Brown correction. Those split-half reliability values for the total score was .81.

Despite two decades of development, some contend that this body of work remains controversial. Concerns have been raised about the validity of these tests as appropriate measures of EI, and about the nature and structure of EI itself, arguing that these arose largely as a result of the approach taken during instrument development. Critics suggest that much may be gained by adopting a more item-focused, meaningfulness-based approach in future measurement efforts (Maul, 2008).

The measure of EI develop by Schutte. Another instrument that has been widely used in research to measure EI is the Schutte Emotional Intelligence Scale (SEIS), alternatively referred to as the Assessing Emotions Scale (AES) (Carmeli, 2003; Dimitrades, 2007; Grant & Cavanagh, 2007; Hakanen, 2004). The SEIS was designed for adults and adolescents and has been used college students and with prisoners (Schutte et al. 1998). It is a 33-item self-report inventory focusing on typical emotional intelligence. Individuals rate themselves on a five-point Likert scale (1 = Strongly agree, and 5 = Strongly disagree), and its takes about 5 minutes to complete.

The most widely used subscales derived from these 33 items are based on factors identified by Petrides and Furnham (2001), Ciarrochi et al. (2001), and Saklofske et al. (2003): *Perception of Emotion* (10 items), *Managing Own Emotions* (9 items), *Managing Others' Emotions* (8 items), and *Utilization of Emotion* (6 items). Although subsequent

factor analytic studies provided support for the four factors that form the basis for the subscales (e.g., Chapman & Hayslip, 2006), there has been some variation in which items load on each factor, and in the number of factors (e.g., one factor: Brackett & Mayer, 2003; three factors: Austin, Saklofske, Huang, & McKinney, 2004). In light of results such as these, Schutte et al. (1998) recommended using total scores on the 33-item scale.

The validity and reliability of the SSEIT were established by Schutte and her colleagues (1998). Evidence of concurrent validity includes correlations with measures of attention to feeling, clarity of feelings, mood repair, optimism, impulse control, lack of depressed affect (Schutte et al., 1998), empathetic perspective taking and self-monitoring in social settings, closeness and warmth of relationship and marital satisfaction (Schutte et al., 2001). Evidence of construct validity was established in factor analytic studies which provided support for the four factors that form the basis for the subscales (e.g., Chapman & Hayslip, 2006), although there has been some variation in which items load on each factor, and even the number of factors (e.g., one factor: Brackett & Mayer, 2003; three factors: Austin, Saklofske, Huang, & McKinney, 2004). In light of results such as these, Schutte et al. (1998) recommended using total scores on the 33-item scale. Schutte et al. (1998) also established the reliability of the SSEIT, reporting internal consistency values that ranged from .87 to .90, and two-week test-retest reliability of .78.

Total scale scores are calculated by reverse scoring items 5, 28 and 33, and then summing the numeric value of the ratings for all items. Scores can range from 33 to 165, with higher scores indicating more characteristic emotional intelligence. In addition, for exploratory purposes, these procedures were be used to develop scores for subscales,

using both the subscales identified above and subscales based on factor analysis results for the sample in this study.

Trait measures of EI.

The measures of EI develop by Petrides. As summarized in Table 2.1 (p. 49), Petrides' trait model of EI consists of 15 facets of personality that are organized into five factors. Due to the way in which those facets and factors were identified, trait theory offers a way to redefine EI models that are measured using self-report questionnaires, linking those models and the measures based on them to scientific theories of psychology (Petrides, 2001). Therefore, Petrides' work provides an appropriate and systematic framework for the development of self-report measures of EI and the interpretation of the results obtained using those measures.

Petrides developed the TEIQue to operationalize his model, which conceptualizes EI in terms of personality. The operationalization of this construct through a self-reported measure is consistent with (a) the subjective nature of emotional experience and (b) the conception of EI as a set of dispositions or preferences, and typical rather than maximal performance (Mikolajczak, Luminet, Leroy, & Roy, 2007). The TEIQue consists of 153 items rated on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), and it requires about 25 minutes to complete.

The TEIQue provides a broad and heterogeneous operationalization of the construct of trait EI, as its facets, or first-order level elements, comprise 15 narrow traits which were systematically derived from content analysis of existing EI models and related constructs (e.g., alexithymia; Petrides, 2009). A total of 13 of the 15 facets load

onto four factors: Well-Being (trait optimism, happiness, and self-esteem), Self-Control (emotion regulation, low impulsiveness, stress management), Emotionality (trait empathy, emotion perception, emotion expression, relationships) and Sociability (emotion management, assertiveness, social awareness), whereas the remaining two, namely adaptability and self-motivation, contribute directly to the global trait EI score (Petrides, 2009; Italian translation by A. Chirumbolo). The internal consistency of items used to assess these 15 facets, four factors, and global scores was assessed using Cronbach's alpha (Table 2.4, p. 63). Of these 20 alpha values, only three are noticeably below the 0.70 threshold suggested by Nunally (1978).

Petrides and his colleague also developed a shortened version of the TEIQue, the TEIQue-ASF, for use with children and adolescents. This version is made up of 15 subscales, each of which consists of 2 questions to measure the 15 separate facets of global trait EI as conceptualized by Petrides and Furnham (2001). The items are reported on a 7-point scale (from 1=strongly disagree to 7=strongly agree). In every peer reviewed study involving children and adolescents, the TEIQue-ASF was found to have high internal consistency for the total score on global trait EI. While the subscales are sometimes reported separately, reliability for these scales tend to be lower than the total score, and it is typical to utilize only the total score on global EI for research purposes with these samples (Petrides et al., 2016).

Mixed-model measures of EI.

The measures of EI developed by Goleman. In 1998, Goleman developed his first measure of EI, the Emotional Competence Inventory (ECI; Boyzatzis, Goleman, &

Table 2.4

Reliabilities and Descriptive Statistics for the TEIQue 15 Facets, Factors, and Global Score (N = 227; Andrei et al., 2015, p. 38)

Facets/Factors	*N* Items	Cronbach's α	*M*	*SD*
Self-esteem	11	.84	4.74	1.01
Emotion-expression	10	.88	4.31	1.25
Self-motivation	10	.71	4.74	0.85
Emotion-control	12	.68	3.92	0.74
Trait-Happiness	8	.88	5.39	1.18
Trait-Empathy	9	.75	5.09	0.85
Social awareness	11	.76	4.65	0.85
Impulsivity (low)	9	.68	4.52	0.91
Emotion perception	10	.79	4.90	0.89
Stress management	10	.81	4.11	1.04
Emotion-management	9	.69	4.78	0.84
Trait-Optimism	8	.85	4.85	1.19
Relationships	9	.57	5.39	0.75
Adaptability	9	.71	4.22	0.84
Assertiveness	9	.61	4.55	0.81
Well-Being	27	.84	4.99	0.98
Self-Control	31	.57	4.18	0.66
Emotionality	38	.71	4.93	0.69
Sociability	30	.77	4.66	0.69
Global trait EI	153	.86	4.68	0.56

Note. TEIQue = Trait Emotional Intelligence Questionnaire; EI = emotional intelligence.

Rhee, 1999). This was revised based on an analysis of ECIs completed between 1999 – 2001 by more than 4,000 managers and professionals in different countries (Hay Group & McClelland Center for Research and Innovation, 2005). The number of items was reduced from 110 to 72, and the response scale was changed from a 7-point to a 6-point scale. Further, the ECI 2.0 was reorganized to measure 18 competencies organized into four clusters. The *Self-Awareness* cluster focuses on knowing one's internal states, preferences, resources, and intuitions. It consists of three competencies:

- Emotional Awareness: Recognizing one's emotions and their effects;

- Accurate Self-Assessment: Knowing one's strengths and limits; and
- Self-Confidence: A strong sense of one's worth and capabilities.

The *Self-Management* cluster focuses on managing one's internal states, impulses, and resources It consists of six competencies:

- Emotional Self-Control: Keeping disruptive emotions and impulses in check;
- Transparency: Maintaining integrity, acting congruently with one's values;
- Adaptability: Flexible in handling change;

Achievement: Striving to improve or meeting a standard of excellence;

- Initiative: Readiness to act opportunities; and
- Optimism: Persistence in pursuing goals despite obstacles and setbacks.

The *Social Awareness* cluster focuses on how people handle relationships and awareness of others' feelings, needs and concerns. It consists of three competencies:

- Empathy: Sensing others' feelings and perspectives, and taking an active interest in their concerns;
- Organizational Awareness: Reading a group's emotional currents and power relationship; and
- Service Orientation: Anticipating, recognizing and meeting customers' needs.

Finally, the *Relationships Management* cluster focuses on the skill or adeptness at inducing desirable responses in others. It consists of six competencies:

- Developing Others: Sensing others" development needs and bolstering their abilities;
- Inspirational Leaderships: Inspiring and guiding individuals and groups;

- Change Catalyst: Initiating or managing change;
- Influence: Wielding effective tactics for persuasion;
- Conflict Management: Negotiating and resolving disagreements; and
- Teamwork & Collaboration: Working with others toward sharing goals. Creating group synergy in pursuing collective goals. (Hay Group & Wolf, 2005)

The ECI 2.0 was designed to include four items for each of these 18 competencies. Further, each of those items represents one of four levels of competence. The Hay Group has a proprietary algorithm for generating scores for practitioner use (e.g., the optimum level for six of these competencies is a 4, and for the other 12 competencies is a 3). Thus, researchers working apart from the Hay Group cannot calculate scores to reflect these levels, and therefore tend to generate average-item scores (Hay Group & Wolf, 2005, pp. 5-6). However, the Hay Group and Wolf provide guidelines to help researchers interpreting how average-items scores correspond to low, medium, and high levels for these competencies (2005, Table 1, p. 7).

As a whole, this measure is intended to be used in a 360-degree mode. Self-ratings alone may be useful for providing developmental feedback, but do not provide valid and reliable measures of emotional intelligence for research purposes. The reason for this is it does not make sense, on a theoretical basis, to obtain an overall ECI score by simply averaging the scores for all competencies in all clusters. Researchers and practitioners are cautioned against assuming that one set of competencies applies equally across a wide range of situations.

Boyatzis and Goleman "reconceptualized the ECI as a measure of emotional and social intelligence competencies … [reviewing] all competencies and items, along with factor analysis … [which] led to the Emotional and Social Competence Inventory (ESCI)" (Hay Group, 2011, p. 6). The items in the ESCI and the ESCI-U (i.e., the university edition, for use with students) "are essentially the same." The ESCI consists of 68 items which are organized into 12 scales and four clusters. It measures the demonstration of individuals' behaviors, through their perceptions and those of their raters, making it distinct from measures of EI that assess ability or personality preferences.

Over the 15 years of development that led to the ESCI, research into EI was widespread. Alongside Boyatzis' and Hay Group's ongoing reviews and studies, EI has become a focus for investigation in many post-graduate theses. This research base enabled the developers to continue to validate the ESCI and ensure that it:

- remains relevant and acceptable to clients, researchers and participants (face validity);
- measures the behaviors it sets out to measure (content validity);
- correlates appropriately with other similar tests (concurrent validity)
- predicts desired performance outcomes (predictive validity) (Hay Group, 2011, p. 15).

The reliability of the ESCI was summarized in the ESCI User Guide by the Hay Group (2011). They indicated that "No specific test-retest reliability studies have been conducted with the ESCI. Participants who undertake the ESCI on two occasions typically undertake some form of development activity between assessments, and would

therefore anticipate a change in their scores over time" (2011, p. 14). Extensive analyses of the internal consistency of the ESCI have been conducted. The results of those analyses were reported by Boyzatis and Gaskin (2010, as cited in Hay Group, 2011); the results for all subscales are greater than 0.70, indicating acceptable levels of reliability (DeVelis, 2012; Kline, 2000; Nunnaly, 1978).

The measure of EI developed by Bar-On. The Bar-On model provides the theoretical basis for Bar-On's measure, the Emotional Quotient Index (EQ-1), which was originally developed to assess various aspects of this construct as well as to examine its conceptualization. According to this model, emotional-social intelligence (ESI) is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others, and relate with them, and cope with daily demands. The emotional and social competencies, skills, and facilitators included in this conceptualization includes five key components (Table 2.5, p. 68), each of which comprises a number of closely related competencies, skills and facilitators. (Bar-On, 2006).

The EQ-I is a self-report measure of emotionally and socially intelligent behavior that provides an estimate of ESI. The EQ-I consists of 133 items, 15 subscales and five higher-order factors (Table 2.4, p. 63), and appears to be unifactorial (Petrides & Furnham, 2001). It is suitable for individuals 17 years of age and older. It takes approximately 40 minutes to complete Bar-On (2006). The EQ-I was the first measure of its kind to be published by a psychological test publisher (Bar-On, 1997a), and is one of the most widely used measures of the trait EI in the literature. The EQ-I has been

Table 2.5

EQ-I Scales and Associated Competencies, Skills, and Facilitators, Adapted from Bar-On (2006)

EQ-I Scales	EI Competencies and Skills Assessed by each Scale
Intrapersonal	Self-awareness and self-expression:
Self-regard	To accurately perceive, understand and accept oneself
Emotional Self-Awareness	To be aware of and understand one's emotions
Assertiveness	To effectively and constructively express one's emotions and oneself
Independence	To be self-reliant and free of emotional dependency on others
Self-actualization	To strive to achieve personal goals and actualize one's potential
Interpersonal	Social awareness and interpersonal relationship:
Empathy	To be aware of and understand how others feel
Social Responsibility	To identify with one's social group and cooperate with others
Interpersonal Relationship	To establish mutually satisfying relationship and related well with others
Stress Management	Emotional management and regulation:
Stress Tolerance	To effectively and constructively manage emotions
Impulse Control	To effectively and constructively control emotions
Adaptability	Change management:
Reality Testing	To objectively validate one's feelings and thinking with external reality
Flexibility	To adapt and adjust one's feeling and thinking to new situations
Problem-Solving	To effectively solve problems of a personal and interpersonal nature
General Mood	Self-motivation:
Optimism	To be positive and look at the brightest side of life
Happiness	To feel content with oneself, others, and life in general

translated into more than 30 languages, and data have been collected in numerous settings around the world (Bar-On, 2006).

In order to examine the convergent construct validity of the Bar-On model and measure, the correlation between the EQ-I and other ESI instruments was evaluated. The major findings of this analysis indicated that the degree of domain overlap between the EQ-I and other measures of ESI is about 36%, which is substantial when evaluating construct validity (Anastasi, 1988). When compared with a 4% overlap with IQ tests and a 15% overlap with personality tests, it is apparent that the EQ-I is measuring what these

other ESI instruments are measuring rather than cognitive intelligence or personality traits (i.e., unlike Petrides' measure of EI, the TEIQue-SF). This suggests that the Bar-On model and measure represent a valid concept of the ESI construct in that it is describing key aspects of emotional-social intelligence rather than other psychological constructs such as cognitive intelligence or personality. (Bar-On, 2006).

The reliability of the EQ-I has been examined by researchers over the past 20 years. A consensus of the findings indicates that the Bar-On conceptual and assessment model is consistent, stable, and reliable (Bar-On, 2004). More specifically, the overall internal consistency coefficient of the EQ-i is .97, based on a North American normative sample (Bar-On, 1997b). This well exceeds the .90 minimum for total scores suggested by Nunnally (1978). Internal consistency was reexamined for 51,623 adults in North America, revealing nearly identical results with a slight mean increase of .025 in consistency coefficients (Bar-On, 2006). The overall test-retest reliability of the EQ-I is .72 for males (n=73) and .80 for females (n=279) at six months. These findings demonstrate that there is a high level of consistency with the factorial components of this model as well as stability over time.

Research on EI in General and for the Study Population

Introduction. As part of my search for and review of research, I located several meta-analyses and reviews of EI research within the dissertation literature (e.g., Martin, 2008; Michaelangelo, 2013; Sharma, 2015; Whitman, 2009) and the journal literature (e.g., Clarke, 2015; Durlak & Dymnicki, 2011; Harms & Crede, 2010; Martins & Ramalho, 2010; Miao & Humphrey, 2016; O'Boyle & Humphrey, 2011; Whitman,

2009). However, most of those focused on populations and applications of EI that were not relevant to this study (e.g., K-12 education, nursing education, stress and health factors, work attitudes, job performance, organizational leadership). Those that were relevant tended to present a rather bleak picture of the state of theory, measurement, and research on EI. For example, as of 2010, the authors of one meta-analysis characterized the general state of EI research as follows.

> Research and valid practice in emotional intelligence (El) have been impeded by lack of theoretical clarity regarding (a) the relative roles of emotion perception, emotion understanding, and emotion regulation facets in explaining job performance;
>
> (b) conceptual redundancy of El with cognitive intelligence and Big Five personality;
>
> and (c) application of the El label to [two] distinct sets of constructs (i.e., ability-based El and mixed-based EI). (Joseph & Newmann, 2010, p.1).

The authors of an earlier meta-analysis offered similar comments and concerns.

> Many of the claims that have been put forth in relation to EI have not been substantiated by empirical research, especially on replication. Additionally, studies have not used the same, or even a few of the same, measures of EI … [Further] [a] primary concern with existing measures of EI is the shortage of evidence for their psychometric measurement properties. The manuals for measures of EI have indicated sufficient reliability but other studies have not consistently produced

the same result. This led Davies et al. (1998), for instance, to argue that measures of EI suffer in terms of reliability (Van Rooy & Viswesvaran, 2004, pp. 74-75).

The state of theory and research on EI described by Rooy and Viswesvaran (2004) served as the rationale and basis for their broad meta-analysis. They used the four-dimension classification of Salovey and Mayer (1990) and the five-dimension classification of Bar-On (1997b) as their analytic framework. Their findings were consistent with the review of models and measures presented in previous sections:

> [t]he two most common measures used were the Bar-On (1997[a]) EQ-I and the 33-item emotional Intelligence Scale (EIS; Schutte et al., 1998). The MEIS (Mayer & Salovey, 1997) was used in fewer studies than anticipated. Considering the amount of attention that has been given to the four dimensions of EI proposed by its authors, but this was most likely a function of the short lived nature of the MEIS (i.e., it was revised into a new instrument). Other common measures include the Trait Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), and the Emotional Competence Inventory (ECI; Sala, 2002). In all, five different measures of EI were explored in this subgroup analysis: the MEIS, TMMS, EIS, Bar-On EQ-I, and ECI. (Van Rooy & Viswesvaran, 2004 p. 76)

Following from this, I located several meta-analyses and reviews of research that pertained to the specific models and measures of EI identified by Van Rooy and Viswesvaran (2004) and described in previous sections. These are summarized, below.

Reviews of research pertaining to general models and measures of EI.

Reviews of research pertaining to Mayer and Salovey's model and measures. Of the two meta-analyses of research pertained to their ability model and associated measures, one was relevant to this study (Fan, Jackson, Yang, Tang, & Zhang, 2010).

Fan et al.'s (2010) meta-analysis came at a time when there was an ongoing debate about the factor structure of the MSCEIT (i.e., debating the four-factor structure that reflects Mayer and Salovey's four-branch model vs. other one-, two-, and four-factor models). Thus, they investigated three research questions.

First, does a reliable high correlation between branches one and two of ability EI exist? Second, do reliable higher- order factors (e.g., Experiential and Strategic EI) and a general EI factor exist? These issues are related to the final, overarching question: which model best represents the factor structure of the MSCEIT? To address these issues, the present study evaluated the six competing models of MSCEIT structure … based on meta-analytic correlation matrices. (p. 782).

Their review included 18 studies that met their selection criteria. A careful review of these 18 studies indicated that only five had relied upon relevant samples of college students in the U.S., and none had relied solely on samples of AAs. Although four of these five studies reported ethnic characteristics of their sample(s) (Mayer, Salovey, & Caruso, 2002: percent not available; Morrison, 2005: 1.6% AA; Rode et al., 2008, Sample 1: 1.8% AA, Sample 2: 3.3% AA; and Rossen et al., 2008: 14.7% AA), none of these studies described or analyzed their data for differences across the ethnic groups represented in their sample(s).

Review of research pertaining to Schutte's model and measure. Schutte and her colleagues conducted several meta-analyses, although few have focused on EI. One that did focus on the relationship between EI and health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), and a second on the relationship between EI and romantic relationship satisfaction (Malouff, Schutte, & Thorsteinsson, 2014). Unfortunately, only the first may be of any relevance to this study. In the Schutte et al. (2007) meta-analysis, the sample included a total of 7,898 participants (ages 11-51) drawn from 35 studies, 20 of which used student samples. In specific, this meta-analysis analyzed 44 effect sizes, and found that higher EI was significantly associated with better health: EI "had a weighted average association of r = .29 with mental health, r = .31 with psychosomatic health, and r = .22 with physical health" (Schutte et al., 2007, p. 921).

***Reviews of research pertaining to Petrides' model and measures*.** One meta-analysis of research pertained to Petrides' trait model and associated measure, the TEIQue (Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016). These researchers were investigating [a] criticism leveled against the conceptualization of emotional intelligence (EI) as a personality trait … that it overlaps considerably with the higher order personality dimensions and, therefore, has weak utility. To investigate this criticism, a systematic review and meta-analysis were conducted to synthesize the literature examining the incremental validity of the two adult self-report forms of the Trait Emotional Intelligence Questionnaire (TEIQue) (2016, p. 261).

Their review included "[t]wenty-four articles reporting 114 incremental validity analyses of the TEIQue were reviewed according to the studies' methodological features.

Additionally, data from 18 studies (providing 105 effect sizes) were pooled in a meta-analysis" (p. 261). Unfortunately, none of these 24 studies included an AA sample. Nonetheless, results indicated that the TEIQue consistently explains incremental variance in criteria pertaining to different areas of functioning, beyond higher order personality dimensions and other emotion-related variables. The pooled effect size was relatively small, but statistically and practically significant (DR2 D .06, SE D .0116; 95% CI [.03, .08]). Factor analyses indicated that the incremental contribution is due mainly to the well-being and self-control factors of trait EI.

***Reviews of research pertaining to Goleman's model and measures*.** In repeated searches of the dissertation and journal literature, I did not locate any meta-analysis of research based solely on the use of measures that reflect Goleman's model (e.g., ECI, ESCI, Emotional Intelligence Appraisal). Although the Korn Ferry Hay Group maintain collections of studies associated with the use of the ESCI, no references to large-scale reviews of that growing body of studies were found. However, this body of research has been included in broader meta-analyses and other reviews of research on EI, particularly those pertaining to leadership and work-related performance.

***Review of research pertaining to Bar-On's model and measure*.** A paper by Bar-On (2006) presented, described, and examined the Bar-On Model of Emotional-Social Intelligence (ESI) and his Emotional Quotient Inventory (EQ-i). This review noted that "an analysis of variance of the North American normative sample (n = 3,831) was conducted to examine the effect of age, gender, and ethnicity on EQ-i scores (Bar-On, 1977b)" (2006, p. 16). He found that older people tend to be score significantly higher

than younger people on the EQ-I scales (p. 16). With respect to gender, he reported that females tend to be more aware of their emotions, demonstrate more empathy, and have stronger interpersonal skills than males, although males have a higher intrapersonal capacity, and are more adept at managing emotions and being adaptable than females (p. 16). This appears to be relevant to plans to investigate gender differences in EI in this study.

Finally, he reported that there were no significant differences in emotional-social intelligence between the various ethnic groups that have been examined in North America (p. 16), although only 7% of this normative sample were African Americans, 3% Hispanic Americans, and 1% Native Americans. However, Quarterman (2011) conducted a study of the relationship between EI, as measured by the EQ-I, and 'transformational leadership skills' among 23 African American men and women. Results of this study indicated …

> … that a positive correlation existed for the [EI] attributes for African American men and women … [but] no significant correlation with [EI] and transformational leadership skills for [them]" (p. iv). Quarterman recommended that [f]urther studies should be initiated to explore this research with a larger sample size and across ethnic groups. (p. iv).

Reviews of research pertaining to the population in this study. The following quote characterizes one segment of the EI research literature that is highly relevant to this study. Perhaps the least-investigated category of EI research is the effect that an individual's race has on EI. Suzuki et al. (2014) examined 26 articles on the assessment

and exploration of EI but found little completed research in the understanding of race, ethnicity, or culture on EI (Blakely, 2017, p. 16).

Overview of research pertaining to this study's target and accessible population. As indicated in meta-analyses noted above, I found a substantial body of research pertaining to five models of EI for the general population. However, I did not find any meta-analysis of EI research pertaining to the target population in this study, AAs. Further, repeated reviews of the dissertation and the research journal literature resulted in only 12 studies whose primary focus was on EI among African American samples, including the instrumentation study by Funderburk (2007). Of those studies, six involved samples of college students, the accessible population in this study, while three involved samples of adolescents (Brown, 2017; Drati, 2010; Funderburk, 2007), three involved samples of adults (Grisette-Banks, 2014; Porter, 2017, Quarterman, 2009), Studies that compared EI in AA samples to EI in other samples were reviewed in a separate section (e.g., Blakely, 2017).

Studies of EI among AA college student samples. Despite the small number of studies of EI among AA college students, a range of factors thought to be associated with EI were investigated, including: the legacy of racism and associated cultural mistrust (Bowman, 2008); family relationships and dynamics (Deams, 2007); socio-economic factors (Holmes, 2008); academic resilience and achievement (Bradshaw, 2008; Lewis, 2003).

The purpose of Bowman's (2003) study was to explore the relationship between racism-related stress and mental health. Although this study focused on emotional health

rather than EI per se, one may hypothesize that, by extension, the relationship of racism-related experiences/ stress to mental health would be relevant to the relationship between racism-related experiences/ stress and EI. Specifically, this study investigated how the experience of racism and the stress that ensues are experienced by African American college students. The study addressed the following research questions: (1) Is there a significant relationship between variables of racism-related stress and variables of emotional health? and (2) Do variables of racism-related stress predict significant variance in variables of emotional health? The Eighty (80) AA participants were drawn from the student body of a major comprehensive state university, as well as from the student population of an historically Black university (HBCU).

The measure of EI used in this study was the Symptom Questionnaire (SQ) (Keller, 1987), a 92-item self-report instrument that measures four different aspects of well-being and psychopathology. This instrument contained 92 items, 68 pertain to the four major symptom subscales: depression, anxiety, somatization and anger/hostility. Psychometrics of the SQ utilized test-retest coefficients for the four subscales over a four-week time span were .71 for anxiety, .95 for depression, .77 for somatic, and .82 for hostility (Corcoran & Fischer, 2000). Known-groups validity was demonstrated by discriminating between 40 psychiatric patients and *normals* in eleven studies, while also discriminating between subgroups of psychiatric disorders, psychosomatic disorders, and physical diseases (Corcoran & Fischer, 2000). The second instrument used was the Schedule of Racist Events (SRE) (Klonoff & Landrine, 1999) is an 18-item self-report instrument that measures the frequency with which African Americans report

experiencing certain racist events. Two forms of reliability were demonstrated for the SRE, internal consistency and split-half reliability. Klonoff and Landrine (1999) reported that internal consistency for all three subscales is high with Cronbach alpha values of .95, .95 and .94 for recent racist events, lifetime racist events and appraised racist events, respectively. The validity of measures of stress were estimated in two ways. The first involved determining the relationship of the stress scale and psychiatric symptoms on the SQ. The second involved determining the relationship of the stress scale and stress-related behavior of the individual (e.g., cigarette smoking). These researchers concluded that the relationship between the variables of racism-related stress and emotional health is very complex and one that has myriad implications for the individual. This complexity presents difficulty not only for the individual experiencing this stress, but also for those individuals and professionals seeking to alleviate the prolonged negative effects of this stress (Bowman, 2003).

In another study, Deams' (2007) investigated the prediction of relationship satisfaction of AAs as measured by the Relationship Assessment Scale (RAS). The predictor variables were EI, relationship attachment, and family dynamics. Data were collected from 250 African American college students from two HBCUs in the South. Five questionnaires were utilized in this study: a demographics questionnaire, the Schutte Emotional Intelligence Scale (EIS; Schutte et al., 1998), the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991), the Relationship Assessment Scale (RAS; Hendrick, 1988), and the Family Environment Scale-Form R (FES; Moos & Moos, 2002). Based on a pilot study (Singleton-Deams, 2004) these measures were determined

to be the best fit for completion of the present study. Deams reported that correlations were found between the predictor variables of emotional intelligence, relationship attachment, and the Family Cohesion subscale. Further, EI and relationship attachment assisted in the prediction of relationship satisfaction, accounting for 9% of the variance. The results suggested that components of relationship satisfaction among AAs are related to emotional intelligence and relationship attachment.

In a third study, Holmes (2008) sought to broaden the knowledge base of EI by examining the relationship between socio-economic status and EI when race was held constant. The primary research questions of this study were: (1) Is there a positive relationship in the emotional intelligence quotient and socioeconomic status of African Americans? and (2) Are there noticeable differences in the emotional intelligence of African Americans based on their socio-economic status? The accessible population included the total number of enrolled undergraduate students at three Schools of Business at selected HBCUs, although the researcher used a purposive nonrandom convenience sample of 120 African American male and female students. This study used the MSCEIT v2.0 to measure participants' emotional intelligence. Findings supported the existence of significant relationships between emotional intelligence scores and socio-economic status, mother's education, father's education, and father's occupation. No relationship was found between emotional intelligence scores and household income and mother's occupation (Holmes, 2008). A decade prior to the opening quote in this section by Blakely (2017), Holmes went to indicate that this study provides evidence that EI is affected by the access and exposure to resources and diverse societal norms and values

afforded via one's socio-economic group. The findings document variances in emotional responses based on these SES indicators.

In a fourth study involving AA college students, Bradshaw (2008) explored the relationship between emotional intelligence (EI) factors and academic achievement among African American female college students. Few, if any, studies have directly addressed factors related to academic success in this population. Bradshaw sought answers to the following research questions: (1) What factors are given by African American female college students for their academic success? (2) Is there a relationship between African American female college students' emotional intelligence level [Total EQ Score] and their academic performance [Grade Point Average]? (3) Is there a relationship between the components of emotional intelligence [Intrapersonal Ability, Interpersonal Ability, Stress Management, Adaptability, and General Mood] and the academic performance [GPA] of African American female college students?
(4) Is there a relationship between African American female college students' emotional intelligence level and their academic level [e.g., Freshman Year, Sophomore Year, Junior Year and Senior Year or Total Cumulative Credits]?

A purposive sample of 60 undergraduate female AA college students from a mid-Atlantic metropolitan area was asked to voluntarily participate in this research study. Students were purposefully selected on the basis of ethnicity (AA), gender (female), and age (18-25). The Subject Demographic Survey (SDS) was used to obtain information from participants concerning their age, socioeconomic status and their parents' level of education and socioeconomic status (SES). Based on the work of Hrabowski et al., (2002,

p. 231), this survey was useful in understanding the level of developmental, emotional and social support that the participant received during growth and development (Bradshaw, p. 65). Two instruments were used to measure EI: Mayer, Salovey and Caruso's MSCEIT, and Bar-On's EQ-i: Short (S). The quantitative findings from the study revealed: (1) no statistically significant correlation between AA female college students' EI level and their academic performance; (2) no statistically significant difference between the students' EI level and their academic level; and (3) a weak correlation between Stress Management [a component of EI] and the academic performance. Qualitative findings from the study support and help explain these quantitative findings because these interviews captured the components of the Bar-On EQ-i: S (Bradshaw, 2008).

In a fifth study, Lewis (2003) sought to determine whether academically resilient and non-resilient AA undergraduate students exhibited significant difference in EI and related constructs, including emotional control, impulse control, optimism, and attitudes reflective of resilience. The research questions in this study focused on whether academically resilient and non-resilient AA students attending a HBCU in a southern city differed significantly on measures of their EI and of these EI-related constructs. Drawing on EI theory, Lewis hypothesized that AA students attending a HBCU who have the ability to control their emotions, maintain optimism in the face of setbacks and adversity, and resolve conflicts will be more academically resilient, than their counterparts.

The accessible population in Lewis' (2003) study included AA students who came from various socioeconomic and environmental backgrounds (i.e., inner-city, rural,

urban, low income, first generation, communities). The participants were drawn from ten (10) psychology classes. Surveys were completed by 217 students, but only 129 were usable. Grade point average was used as a measure of resilience. The instruments used to collect data for this study were: (a) The Emotional Intelligence Scale (Schutte, et al., 1998); (b) The Emotional Control Questionnaire (Roger & Najarian, 1989; Roger & Nesshoever, 1989); (c) The Life Orientation Test (Scheier & Carter, 1985); (d) The Barratt Impulsive Scale (Patton, Stanton & Baratt, 1995); and (e) The Resilient Attitudes Scale (RAS) (Biscoe & Harris, 1994). Lewis pointed out that internal consistency of the EIS for college students was .87, although females scored higher than males, and seniors scored higher than freshman (Schutte & Malouff, 1998, as cited in Lewis, 2003). Lewis' results "indicated that there was a positive correlation between academic resilience and two subscales of the [RAS] … However, no other significant correlations were found when examining the sample as a whole" (2005, Abstract, p. 2), including scores from EI measures (a) and (b), above.

Studies of EI among AA adolescent samples. I found three studies of EI among AA adolescents. In the earliest of these studies, Funderburk (2007) developed a valid and reliable measurement tool of EI, specifically for AA adolescents, the African-American Adolescent Emotional Intelligence Scale (AAEIS). The problem she addressed was that none of the existing valid and reliable measures of EI had used a sample of AA adolescents large enough to effect the development of those EI measures. In general, studies that did include AA adolescents reported lower performance on EI measures and scales when compared to other populations, which she thought may have been indicative

of insufficient sensitivity to salient dimensions of EI in this population. Her research questions were as follows: (1) Is this measure of EI a valid measure when administered to AA adolescents? and (2) Is this measure of EI a reliable measure when administered to AA adolescents?

Her sample consisted of a focus group and a large group. Three focus groups (*n*=18) were used to gather qualitative data to inform the development of the AAEIS. The participants in these focus groups were AAs involved in a North Carolina after-school program, and included youth (ages 13-19) and adult employees (ages 20-25). Participants in the three large groups (*n*=90) were administered the initial version of the AAEIS. These large-group participants were obtained by selecting students from North Carolina public and private middle schools (20%), high schools (76%), and students beyond high school (4%).

Funderburk's AAEIS consisted of 20 items, and was based on the EI theories of Goleman, as well as Mayer, Salovey, and Caruso. The results of the study indicated the AAEIS has face validity, as well as content validity in that it appeared to measure EI by viewing the tests according to the focus groups and the content related to the construct as a whole. The AAEIS also was measured for reliability by using the Gage R&R procedure. A determining factor in this measurement system is the range data between trial administrations within groups. A reliable measure will have similar scores within trail administrations and between trail administrations. She found that the AAEIS was "unreliable due only to outlier data" (2007, Abstract, p. 2). She also suggested that

"[f]uture iterations of the survey will include additional instructions and visual cues to aid in participant ease of use and decrease the chance of outlier data" (2007, Abstract, p. 2).

The purpose of the study by Drati (2010) was to investigate whether AA high school students' emotional intelligence and race identity attitudes are related to their academic achievement. The following research questions were explored: What is the correlation between AA adolescents' (1) race identity attitudes and academic achievement? (2) EI and academic achievement? and (3) EI and race identity attitudes (RIA)? A sample of 165 AA students from three high schools were invited to participate in the study. The students were randomly selected and administered the EQ-I: Youth Version (Short) or YV(s), and the Cross Racial Identity Scale (CRIS) surveys. The CRIS is a 30-item questionnaire with subscales that assess six dimensions of RIA: (a) Pre-Encounter Assimilation, (b) Pre-Encounter Self-Hatred, (c) Pre-Encounter Miseducation, (d) Immersion-Emersion Anti-White, (e) Internalization Afrocentricity, and (f) Internalization Multiculturalist Inclusive. Each subscale consists of five items that are rated on a 7-point Likert-type scale with reliability coefficients ranging from .65 to .90. *The Emotional Quotient (EQ-I:YV(s)* is a 30-item self-reported measure of EI developed by Bar-On and Parker (2000) that requires children and adolescents to respond to a statement that best describes how they feel, think, or act in most situations. The responses are rated on a 4-point Likert scale. A high score any individual ability scale or the total score reflects a high level of social and emotional competence. However, in this study, subscales (a), (b), and (c) were combined and used to generate a *pre-encounter* score, while subscales (e) and (f) were combined and used to generate an *internalization* score.

Of particular relevance to this study are Drati's findings for research questions (2) and 3), above. Drati's findings pertaining to research question (2) indicated that the only significant correlation was between adaptability and English Languages Arts (ELA) (r=.249, p< .01). However, only 6% of the variability of ELA scores were explained by changes in adaptability (R^2=.062). This indicated that students' ability to adapt to changes in environment had little influence in ELA achievement. Drati's findings pertaining to research question (3) indicated that, overall, EI was significant correlated with pre-encounter (r = .833, p <.001) and internalization attitudes (r = .684, p < .001). However, a more detailed analysis of the relationships between the four EI subscale scores and the three pre-encounter subscale scores indicated that these twelve correlation values ranged from 0.023 to 0.270, with two of these correlations being negative (2010, Table 7, p. 45). Further, a more detailed analysis of the relationships between each of the four EI subscale scores and the two internalization subscale scores indicated that these eight correlation values ranged from – 0.021 to .424, with three of these correlations being negative (2010, Table 7). Although the aggregated results appear to suggest a strong relationship between EI and both pre-encounter attitudes and internalization attitudes, these disaggregated results reflect weaker to more moderate relationships between EI and these factors.

The purpose of the study by Brown (2017) was to evaluate the impact that Project Helping Our Young People Excel (H.O.P.E.) was having on the EI of AA males who attend rural alternative schools. The study sample consisted of ninety-nine (99) AA high school males enrolled in the Milton M. Daniels Alternative School during the 2015-16 school year. This school was intended for students with discipline problems or at risk for

suspension or expulsion. This sample included students: (a) who participated in Project H.O.P.E. during the time of the study (*n*=33), (b) who participated in Project H.O.P.E prior to the study (*n*=33), and (c) who did not participate in Project H.O.P.E. (*n*=33) and were performing satisfactorily in high school and never attended an alternative school.

The research questions in this study were: (1) How does Project H.O.P.E. help AA male students manage their overall *Managing Other Emotions*? (2) How has Project H.O.P.E. helped AA male students in *Managing Self and Others?* (3) How has Project H.O.P.E. helped AA students manage their *Emotional Perception* of themselves in society? (4) How has Project H.O.P.E helped AA male students understand the emotional messages and the behaviors associated with them? (5) How did principals, teachers and parents perceive the EI of AA male students who participated in Project H.O.P.E.? To answer these questions, Brown used the Schutte Self-Report Emotional Intelligence Test (SSEIT or, alternatively SEIS or AES) and a researcher-constructed stakeholder questionnaire which consisted of five Likert-type scale items to capture parent, teacher, and administrator views on the impact of Project H.O.P.E. on participating students. Reliability and validity estimates for this questionnaire were not reported.

The SSEIT data were analyzed to determine whether there were differences in the EI of students in each of the three sample groups. Participants in Project H.O.P.E. were administered pre-SSEIT and a post-SSEIT score after completing the project in a three-week period. Results of the analysis of scores on the four SSEIT scales indicated: (1) there were noticeable pre-test differences between groups on three of these four scales; (2) in sample (a), the greatest pre-to-post gain was in the *Managing Others Emotions*

scale (mean diff. = 46.1), with more modest differences in the *Emotional Perception* scale (mean diff. = 16.3) and *Understanding Facilitating Thoughts of Emotions* (mean diff. = 9.9); and (3) in sample (a), there was sizable pre-to-post decrease on the *Managing Others Emotions* scale (mean diff. = - 29.7) (2017, Table 5, p. 96).

Brown also found that, often, AA male students would choose to participate in activities where others in the program would not see them, indicating their peers had a great impact on their decision-making. A second finding indicated a majority of the AA males perceived themselves in a positive peer environment. AA males perceived showing emotions towards others was weak, because in their communities and with their family members they were often doubled-crossed and treated negatively. Overall, Brown concluded that Project H.O.P.E. helped to show that AA males purposely do not show weakness, did not know how to exhibit compassion towards people, and perceived that showing compassion was wrong. Instead AA males thought of survival a purpose of their life and therefore emotion was of no value because it made them weak and threatened their survival. Project H.O.P.E. participants gained an understanding that their attitude toward learning must change in order to achieve any future academic success, and to reach a successful place in life, AA had to educate themselves (Anderson, 1988: Patton, 1980). Some teachers and parents mentioned that they noticed that participants in Project H.O.P.E. wanted to continue to participate because it made them feel a part of something that didn't involve losing their lives.

Studies of EI among AA adult samples. The purpose of Quarterman's (2009) study was to explore the relationship between EI and transformational leadership skills of

AA men and women. The research questions guiding the study were (a) Is there a significant difference between EI components of AA men compared to AA women? and (b) Is there a significant difference between EI components and transformational leadership skills between AA men compared to AA women? The population in this study included individuals currently in the management or leadership position with a varying number of subordinates. The sample included eight AA men and 15 women in a leadership or supervision role. In order to participate in the survey, the participant needed a minimum of 1 years' work experience at the management level to meet criteria to complete the survey. A Demographic Survey, the EQ-I by Bar-On (2006) and the Multifactor Leadership Questionnaire (MLQ5x) by Avolio and Bass (2004) were used as the instruments to assess emotional intelligence and transformational skills. The reliability of the EQ-I was evaluated using several methods.

Quarterman developed and analyzed composite scores of AA men and women in this sample. The results for AA men indicated a significant correlation between scores on the interpersonal composite scale and stress management and adaptability. Both groups showed similarities in the adaptability; however, the data indicated that men had higher scores on the interpersonal scales (e.g., Stress Management), while women had higher scores on the intrapersonal composite scale. The results of her parametric and non-parametric analyses of EQ-I total scores indicated there was a small, non-significant difference between these scores for men and women (Appendices G and I).

In the next study, Grisette-Banks (2013) explored the non-cognitive traits, skills, and abilities that enable AA Women Leaders (AAWLs) to create success in their lives.

Of particular research interest was how these traits and abilities related to their leadership practices and to their experiences as AAWLs in U.S. workplaces. The study's primary research question was: What are the EI characteristics of successful AA women leaders? A mixed-methods design was used to explore this question. The study sample included 42 AAWLs who held leadership positions for a minimum of three (3) years at the director level or three levels from the top of an organization. They represented varied occupational fields and all regions of the U.S., 80% of whom, were over 40 years old. Methods used to collect study data included Bar-On's (1997a) EQ-i and qualitative focus group interviews. The study also required the collection of data on the participants' perception of their EI scores in relation to their leadership practice. The study enabled comprehension of the emotional mechanisms that AAWLs use to lead in the face of obstacles to their ascension to high-level leadership roles.

Grisette-Banks (2013) found that members of her sample had an "atypically well-developed emotional-capacity," earned by achieving a total EQ score of 110 on the EQ-i (p. 80), where the mean score is 100, with a standard deviation of 5. Within the EQ-i, the subscales on which participants had the highest scores and the lowest scores emerged as key emotional-social characteristics for these AAWLs. The three subscales on which they scored highest were Assertiveness (114), Independence (113), and Stress Tolerance (111). The two subscales on which they scored lowest were Social Responsibility (102) and Empathy (104).

In her qualitative analysis of focus-group data, five critical themes emerged. First, the AAWLs in this samples were not surprised that the overall EQ-i scores were high.

They believed a high degree of EI was required if them to be successful in their workplace. Second, this group believed that results on two components of Intrapersonal EQ, high Independence and Assertiveness, were necessary to lead, but they could also be detrimental to leadership success. Third, Interpersonal EQ, specifically the components of Social Responsibility, are important to the execution of leadership but are also areas for development for these leaders. The ability to "balance" the management and use of these EQ traits on the Intrapersonal and Interpersonal component scales was a related theme that emerged. Fourth considerable attention was paid to this group's scores and perceived abilities regarding stress tolerance. Particular emphasis was placed on owning the reality that exists, but they acknowledged that it is managed in different ways. Finally, the idea of feeling misunderstood, an item assessed in the Reality Testing subscale, engendered a query about research on the b/w-itch stereotype and its relationship to the characteristics, traits, and abilities-emotional social functioning that these AAWLs display. Overall, the leaders who participated in this study felt optimistic and happy about their journeys to date. Even with these high scores and above average functioning on most scales, they were surprised that their scores were not higher.

In the most recent study, Porter (2017) explored the EI of AA women in higher education administration. The goal of this study was to obtain details of the participants' journeys to their administrative roles. The following specific questions guided this study: (1) What effect does socioeconomic background have on the EI of an administrator? (2) What effect does the EI skill level have on leadership success? and (3) What is the relationship between the EI, belief in predestination, and socioeconomic status?

The accessible population consisted of 19 women in top-level administrator roles at public and private four-year institutions and community colleges, including president, chancellor, vice presidents and associate vice presidents. Four of those 19 women responded and participated in the study. Porter used a mixed-model design (Johnson & Onwuegbuzie, 2004). The EI of participants was measured using a 12-item EI test designed to measure the following aspects of EI: self-image, independence, leadership abilities, relationships, and job satisfaction. This test was one part in a compilation of tests designed to identify personality strengths and weaknesses, although the source of these tests was not identified. In addition, Porter (2017) did not include information about estimates of the reliability or validity for these self-scoring tests. All four participants in this study participated in post-survey interview, allowing the researcher to obtain "more detailed and in-depth information regarding the women's ascension into a high education leadership role" (2017, p. 72).

Study results indicated that the participants' self-identified socioeconomic background did not have an influence on the EI of this small sample of higher education administrators. However, based on findings, Porter did suggest that their EI positively impacted their leadership success. All of the participants explained that their EI helped them better understand people and their needs. It also helped them to maneuver their ascension into higher education administrator.

Studies of EI that compare AA samples to other samples that reflect other racial, ethnic, and cultural groups. Past research has shown that Hispanics and [AAs] score high on EI tests than Whites (e.g., Roberts et al., 2001). "*There is some reason to*

believe the EI construct is different between ethnic minorities and Whites as well" (Whitman, Van Rooy, Viswesvaran, & Kraus, 2009, p. 1063, emphasis added).

Meta-analyses of comparison studies. Two meta-analyses were located that reviewed research on one component of EI, the ability to recognize emotions across cultures. In the earlier of these two meta-analyses, Elfenbein and Ambady (2002) concluded the following from their review of findings in 168 studies.

> Accuracy [in participants' ability to recognize emotions] was higher when emotions were both expressed and recognized by members of the same national, ethnic, or regional groups, *suggesting an in-group advantage*. *This advantage was smaller for cultural groups with greater exposure to one another*, measured in terms of living in the same nation, physical proximity, and telephone communication. *Majority group members were poorer at judging minority group members than the reverse*. *Cross-cultural accuracy was lower in studies that used a balanced research design,* and higher in studies that used imitation rather than posed or spontaneous emotion expression. (2002, p. 203, emphasis added)

Further, regarding the ability to recognize emotions across cultural boundaries, they found "only 3.1% of the samples (5 out of 162 reporting sufficient information) showed cross-cultural accuracy that was no better than chance for individual emotion" (p. 209). Their results did not provide a clear answer to the long-standing debate among psychologists as to whether emotions are universal or whether they vary by culture (p. 203). Rather, they offer some preliminary insights into possible explanations for cultural variability in recognition rates (p. 204), including in-group advantage, ways in which

emotions in these studies were presented or communicated (e.g., facial images only or more dynamic expressions), and the presence of moderators (e.g., exposure between cultures, and majority or minority status). However, when viewed as a whole, the results of this meta-analysis raise many questions about the relative stability of interpersonal dimensions of EI within and across cultures.

In a more recent meta-analysis, Suzuki, Yang, Ro, Abitbul, and Carriero (2014) reviewed the relationship of race, ethnicity, and culture to EI in studies published between 2000 – 2013. In specific, they explored the extent to which existing measures of EI were found to be construct valid across diverse racial and ethnic groups. Among studies reviewed, articles were eliminate if they did not include attention to race, ethnicity, or culture. Forty-eight (48) studies met the selection criteria and were included in this analysis, 26 of which had been conducted using college samples student (54%).

> The articles were coded based upon, EI measures used, in addition to other constructs (e.g., cognitive intelligence, cultural intelligence, social intelligence, personality, leadership, vocational measures, life satisfaction … personality), geographic location, and characteristics of participants (e.g., age, gender) … Thirty-seven countries were represented in the dataset, the majority of which represented more individualistic cultures. (Suzuki et al., 2014, Abstract)

Two of their findings are of relevant to this study. First, they found that a number EI instruments had been translated, normed, and standardized for use in U.S. and in other countries. “The most frequently used measures were the Schutte Emotional Intelligence Scale (1998), MSCEIT (2002), Bar-On EQi, Wong and Law EI Scale (2002), *TEIQUE*

(2003), and TMMS (1995)" (Suzuki et al., 2014, Abstract, *emphasis added*). Second, major findings relevant to this study included:

> … Women/females in various cultures tend to score higher on EI measures … EI varies in individualistic vs. collectivistic cultures; participants from individualistic cultures have higher measured EI (note: most measures were developed in individualistic cultures, e.g., U.S.) … Studies indicate positive correlations between EI and cultural intelligence … [However] though studies have been conducted on EI within various cultures, limited research exists examining EI across cultural groups (Suzuki et al., 2014, Introduction and Major Findings)

***Review of additional studies*.** Despite the limited number of cross-cultural studies included in these meta-analyses, searches helped me identify a number of studies of EI that included samples of AAs and participants from other racial, ethnic, and cultural groups. Unfortunately, many of these studies located reported on the percent of AAs in the study sample, but conducted little, if any, further analysis of EI similarities and differences across those cultural groups (e.g., Abel, 2013; Roberts, Zeidner, & Matthews, 2001). For example, Roberts et al. (2001) "found that Caucasian samples scored higher overall than did both African Americans and Hispanics. They noted that this disparity could be due to bias created by using an all-Caucasian expert pool to normalize the scores, *leaving out any possible variation due to ethnicity or race*" (Blakey, 2017, p. 16, emphasis added). However, I did locate three cross-cultural studies that that did explore, and that appeared to detect differences in or raise questions about, EI across racial, ethnic, and cultural groups.

In one study, Van Rooy, Alonso, Viswesvaran, (2005), administered the 33-items EIS (Schutte et al., 1998) to examine group differences. They hypothesized: (1) Ethnic differences exist for EI scores across Whites, Blacks, and Hispanics; (2) Women will score significantly higher than men on EI; and (3) EI scores will be positively related to age. The study sample consisted of 275 undergraduate psychology students at a large Southeastern university. The sample consisted of 59 males and 216 females, and participants' ages ranged from 18-44, with a mean age of 22.18. The ethnic composition of the sample was as follows: Caucasian = 60, AA = 50, Hispanic = 135, and all others = 30. The EI measure used was the 33-item EIS scale (Schutte et al., 1998). Although the EIS was thought to be unidimensional, the researchers noted that discrepancies have been found in the factor structure across studies, and that the reliability of factors is considerably lower than the reliability of the full measure (i.e., which was proven to be very reliable). Because these authors were interested in group differences, they decided to use total scores and not scores on potentially unreliable subscales which could introduce more measurement error and decrease the interpretability of findings.

For Hypothesis 1, ethnic differences, the minority groups (i.e., Hispanics and Blacks) scored higher than Whites. The largest effect size was for Hispanic–White differences where Hispanics scored a half-standard deviation above Whites. Blacks scored one-third of a standard deviation above Whites but almost one-fifth lower than Hispanics. Only the Hispanic–White difference was significant ($p < 0:01$); the Black–White difference was marginally significant ($p < 0:068$). Thus, Hypothesis 1 was partially supported. For Hypothesis 2, women scored higher than men, with an effect size of 0.21.

The effect size, however, was not significant and overall support for Hypothesis 2 was weak. For Hypothesis 3, Age and EI total scores correlated 0.17 ($p < 0.01$), thereby providing support for Hypothesis 3. The gender x age interaction was explored next. The interaction was not statistically significant and gender differences were constant across age groups.

In a later study, Whitman, Van Rooy, Viswesvaran, and Kraus (2009) investigated the EI of 921 job applicants. Scored on the Wong and Law Emotional Intelligence Scale (WLESI) were collected as part of the personnel selection process. The WLEIS consists of 16 items "designed to adhere to Salovey and Mayer's (1997) four-branch ability model" (p. 1061). This sample included participants from different ethnic groups (White = 125, 14%; Black = 209, 23%; Hispanic = 581, 63%; and Other = 6; < 1%), as well as by gender. They sought to determine if there were any differences in the factor structure of the WLEIS across these ethnic groups and by gender. The results of their t-tests indicated that there were statistically significant differences between ethnic groups' scores on the overall WLEIS score. There were statistically significant White-Black differences ($p < .05$), favoring Whites, who scores higher on overall EI (a *d* value of .30). Using Cohen's (1988) standards, these White-Black score differences can be interpreted as moderate. There were also statistically significant differences between Hispanics ($M = 6.33$) and Blacks ($M = 6.15$) on overall EI (*d* value of .22) as well as on the dimension *appraising others' emotions* (an effect size of .31). No statistically significant differences between Whites and Hispanics were found. (p. 1069). However, even though there were between-group differences, structural equation modeling results

indicated that "[b]ecause the increase in CFI was not greater than .01 (.94 vs. .95) in the second-order model [global score], we concluded that ethnicities view the WLEIS and its dimensions in the same way" (p. 1068).

In the most recent of these comparison studies, Blakely (2017) sought to determine whether or not there will be a statistically significant effect of age, gender, and ethnicity on the EI variables in this study. Those EI variables included: Empathy Accuracy (EMA)—whether the individual has a developed ability to identify another person's emotions without verbal contact; and Empathy Compassion (EMC)—whether the individual is able to be sensitive to another person's experience and to know what that experience must be like. The accessible population for this consisted of 13,051 individuals employed by a broad range of companies that wanted to assess their personnel for the purpose of improving interpersonal relationships. These data were compiled by a private consulting company specializing in assessing individual work performance. Within this database, usable data were available for 9,850 individuals. The final study sample consisted of 53.8% women (*n*=5,302) and 46.2% men (*n*=4,548). The sample was primarily white (*n*=8,161; 82.9%), and included AAs (*n*=293; 3%), Hispanics (*n*=564; 5.7%), and members of other ethnic groups (*n*=832; 8.4%).

The primary methods used to collect EI data involved the use of Learning in Action Technologies (LIAT), specifically videos and questions included in the EQ Action Profile assessment tool. "The videos were produced by a third party at the direction of LIAT and were designed to elicit emotionally intelligent responses. Each video was followed by several questions" (p. 36). Participants responded to questions using a five-

point Likert-type scale: 1 = does not fit my experience, 2 = slightly fits my experience; 3 = somewhat fits my experience; 4 = fits my experience; and 5 = perfectly fits my experience). According to Blakely (2017), The results indicated an increase in age generally indicated an increase in emotional intelligence. Gender results indicated males were more successful at understanding the cognition of emotions, whereas females were better at the application of emotion in social interactions. Results of ethnicity suggested Caucasians had a better chance of assessing the emotions of others than other ethnicities. (p. v).

Summaries of research pertaining to the relationship of EI to demographic, psycho-social, and experiential factors among AAs. In studies involving only AA samples and in studies in which AA samples were compared to samples that reflect other racial, ethnic, and cultural groups, the researchers investigated the relationship of EI to a number of demographic factors (e.g., age, gender), psycho-social factors (e.g., resilience), and experiential factors (e.g., experiences of racism). In this section, I summarize the findings from those studies that pertain to the relationship or influence of these kinds of factors to EI.

Summaries of research pertaining to the relationship of EI to demographic factors. In these studies, researchers investigated the relationship of EI to six demographic factors: age, year in school, gender, socio-economic status (SES), parental level of education, and parental occupation. Of these, none of the studies of EI among AAs found age or year in school to be significant factors, so these are excluded from this review.

Research pertaining to the relationship of gender to EI in this study's target population. The meta-analysis by Suzuki et al. (2014) found gender differences in EI scores across cultures, with females scoring higher. Was this apparent in EI research involving AAs? Five studies explored this relationship in samples of AAs.

Three of these studies investigated EI in samples of AA females. In a study of the relationship of EI to academic factors among female AA college students, Bradshaw (2008) did not find a statistically significant correlation between EI and either (a) academic performance (GPA) or (b) academic level; and found a weak correlation (c) between stress management and the academic performance.

Two studies investigated EI within samples of adult AA females. Grissette-Banks' (2014) study was the first to explore the EI among adult AA women leaders. Using a mixed-methods design, she collected data using Bar-On's EQ-i and from a focus group. This sample's Total EQ score of 110 was high, indicating a "well developed emotional capacity" (p. 79). The highest EQ-I mean scores were found on sub-scales for assertiveness, independence, and stress tolerance. From a leadership perspective, they perceived themselves to be successful (e.g., due to their influence and impact, and goal accomplishment), but identified interpersonal relationship-building as an area for improvement. (Grissette-Banks' 2014). In a more recent study, Porter (2017) used mixed methods to explore EI among female AAs who were higher education administrators, primarily because racism, sexism, and other forms of discrimination and stereotyping have impeded the ability of AA women to attain management and decision making positions. Porter's quantitative findings indicated no relationship between SES and EI

within this sample. However, during phone interviews (*n*=4), these participants indicated that EI played a positive role in their success (Porter, 2017).

One study investigated EI in a sample of AA males. Brown (2017) evaluated the effects of Project H.O.P.E. (Helping Our Young People Excel) by comparing the EI of project participants (AA males referred to alternative schools for disruptive behavior) and non-participants using Schutte's SSEIT. Project H.O.P.E. is offered at an alternative school in NC with a 4:1 student/teacher ratio, and relies on mentoring approaches found to be effective in addressing problems among youth. Brown found that "[t]he subscales *Perception of Emotion*, *Managing Others Emotions*, and *Utilization of Emotions* displayed Project H.O.P.E.'s largest impact on African American males." The results of the study by Brown (2017) is relevant to this study because it acknowledges the importance of EI among AA males. The academic institution from which my sample population was be drawn has a disproportionately low completion and retention rates among AA males. The results of Brown's study suggests that, there may be a relationship between EI and completion/retentions rates in among some males in the AA accessible population and sample in this study.

Finally, Quarterman (2009) investigated the relationship existed between the emotional intelligence (EI) and transformational leadership among AA men and women. The study included AA men (*n*=8) and women (*n*=15) in management and leadership positions in the U.S. The EQ-i (Bar-On, 2006) was used to assess EI and the Multifactor Leadership Questionnaire, and the MLQ5x (Avolio & Bass, 2004) was used to assess transformational skills. The sample's mean EI scores on the EQ-i was 111, which Bar-On

characterized as *high well-developed motions capacity* (Bar-On, 2006). However, males tended to score higher on the *stress management* scale, while females scored higher on the *interpersonal* scale, indicating "differences in the EQ-i composite scores of women compared to men" (p. 79).

Of these five studies, four attempted to characterize and identify influences on selected dimensions of EI in sample of AA females or AA males. Only one study (Quarterman, 2009) compared gender differences on EI in an AA sample. Although gender differences were found, the sample size in that study was small and the EI instrument used in that study (EQ-i) was not used in this study. In general, research findings indicate that gender is a relevant factor, although the evidence for this from studies involving AAs is limited.

Research pertaining to the relationship of SES to EI in this study's target population. In Holmes' study (2008), Hypothesis 1 focused on the correlation between SES and EI. It stated "A positive relationship exists between the EI quotient and socio-economic status of African Americans." To test this relationship, a series of Spearman's ρ correlation analyses were used to compare SES of the participants with their EI scores. Those EI scores were positively correlated with SES, suggesting that a relationship exists between EI and SES. Based on these findings, Hypothesis 1 was accepted. These results are relevant to my study because they point to a positive relationship between EI and SES, with SES as an influential factor in the setting of this study.

Research pertaining to the relationship of parental education and occupation factors to EI in this study's target population. In Holmes' (2008) study, he also

hypothesized that there would be a positive relationship between the EI and the level of education of both the mother and father of AA college students. To test these hypotheses, a series of Spearman's ρ correlation and Pearsons r correlation analyses were used to compare the education levels of participants' mother's and father's with their EI scores. When mother's and father's education was collapsed to categories and Spearman's rho was calculated, the results indicated a positive correlation. These results suggest that a relationship between EI and parents' level of education may exist, which, like SES, is worthy of attention in this study.

Finally, Holmes (2008) Hypothesized that there would be a positive relationship between the EI and the occupation of both the mother and father of AA college students. To test this these relationships a series of Spearman's ρ correlations were used to compare the occupation of participants' mothers and fathers with their EI scores. The use of Tse and Werschkul's (2005) job prestige scale provided a ranking of occupational prestige (1 to 430), with a ranking of 1 indicating professions that have the highest degree of prestige among American households, and 430 reserved for those professions that have the lowest degree of prestige. As a result, correlations between EI and more prestigious occupations would produce a negative sign (-), suggesting an inverse relationship. Holmes found that EI scores were not strongly correlated with the participants' mother's occupation, so this hypothesis was rejected. However, he did find a positive relationship between the EI quotient of AA's and the father's occupation. These results suggest that a relationship between EI and the father's occupation may exist, which, like SES and level of education, is worthy of attention in this study.

Summaries of research pertaining to the relationship of EI to psycho-social factors and experiential factors. In these studies, researchers investigated the relationship of EI to several psychological – sociological (psycho-social) and experiential factors: racial identity, experiences of racism and prejudice, family dynamics and relationships, and other residential factors. Of these, none of the studies of EI among AAs found family dynamics and relationships or other residential factors to be significant factors, so those are excluded from this review.

In the study by (Drati, 2010), Research Question 3 is relevant to my study: What is the correlation between AA adolescents' race identity attitudes and EI? To address this question, Drati examined the correlation between total scores and sub-scale scores on the EQi:YV(S) and on the CRIS, a measure of six dimensions of racial identify attitudes (Vandiver et al., 2000; Worrell, Vandiver, & Cross, 2004). Overall EI was found to be significantly correlated with two of those attitudinal dimensions: (a) pre-encounter (r = .833, $p < .001$), and (b) internalization (r =.684, $p < .001$). Specific correlation results indicated that among (a) the three pre-encounter subscales and four dimensions of EI, the strongest and most significant correlation was found between Pre-Encounter Self-Hatred attitudes and the Interpersonal dimensions of EI (r=.270, $p < .000$). According to Worrell, Mendoza-Denton, Telesford, Simmons, and Martin (2011), "Pre-Encounter Self-Hatred attitudes are the most personally negative; these attitudes reflect unhappiness with being African American and having physical characteristics reflecting an African heritage" (p. 639). As summarized in Table 2.4 (p. 63), Bar-On's Interpersonal dimension includes items designed to assess empathy, interpersonal relationships, and social

responsibility. However, Drati (2011) did not speculate on possible explanations for this relationship, and there are no clear and obvious explanations for it.

Specific correlation results for (b) indicated that of the two internalization subscales and four dimensions of EI, the strongest and most significant correlation were found between Internalization Multiculturalist Inclusive attitudes and Interpersonal (r=.424, p < .000) and Adaptability dimensions of EI (r=.298, p < .000) (Drati, 2010, p. 45). According to Worrell et al. (2011), "Internalization Multicultralist Inclusive [IMCI] attitudes reflect pro-Black attitudes coupled with a willingness to respect and engage with other cultural groups" (p. 639). In addition to Bar-On's Interpersonal dimension of EI noted above, Adaptability (Table 2.4, p. 64) encompasses reality testing (i.e., validating one's feeling and thinking with external reality), adaptability and adjustment to new situations, and effectiveness in solving personal and interpersonal problems. According to Drati (2010), this "finding signifies that students' abilities for flexibility and adaptation to unfamiliar or changing circumstances are slightly influenced by their positive attitudes for being Black and inclusive" (pp. 44-45). Certainly, these two factors reflect more than a moderate correlation, although it is unclear whether there is any causal relationship between them (i.e., these findings do not clearly indicate whether either factor influences the other, or if both factors may be influenced by other factors such as experience).

Review of Studies Most Relevant to This Study

The study most relevant to this study is Funderburk's (2007) dissertation research. She reported that her measure of EI, the AAEIS, was based on the EI theories and frameworks developed by Goleman and by Mayer, Salovey, and Caruso. While both are

well-established models with accompanying measures of EI, the model and measure developed by Goleman is one of three to be used in this study. Further, the AAEIS was developed for use with AA adolescents (ages 13-19), which overlaps with the accessible population in this study.

Funderburk indicated that the AAEIS was found to be a valid measure of EI for AA adolescents (ages 13-19). Specifically, she found that the instrument had face validity and content validity in that it appeared to measure EI according to the focus group's comments about the relationship between AAEIS item content and the EI construct as a whole. The AAEIS was measured for reliability using Gage R&R procedures. A determining factor in this measurement system is the range data between trail administrations within groups. A reliable measure have similar scores within trail administrations and between trail administrations. Specifically, she reported that the average score for these three groups were reasonably consistent (Group A: 44.66; Group B: 46.35; and Group C: 44.4), the variation between groups was relatively low (Group A: 4.43; Group: 1.7; and Group C: 2.13), and that variations in scores across trials within each group was relatively low. Despite these positive indicators of consistency in response (scores) within and across groups, she concluded that "reliability of the measure was not proven [established]" (p. 67), in part due to her detection and retention of four outliers which skewed survey results. "The absence of these four surveys would have allowed for statistical comparisons to continue and could have thus led to reliable surveys" (p. 67).

In summary, Funderburk's study is relevant because hers was the first and remains the only measure of EI for use within the AA population. Implicitly, this opened up questions about the nature of EI within that population, including how that compared to EI in other racial, ethnic, and cultural groups (populations). However, the procedures she used to develop estimates of the validity and reliability of the AAEIS could have been stronger, so further study is warranted.

In a second relevant study, Deams (2007) investigated EI as one predictor of relationship satisfaction among AAs. Data were collected from 250 AA college students from two HBCUs in the South. The questionnaires used in this study included the *Schutte Emotional Intelligence Scale* (SSEIT; Schutte et al., 1998), the *Relationship Attachment Scale and Family Environment Scale,* and a demographics questionnaire. However, data from the latter were used to describe the sample but were not included in further data analysis. Her results indicated that EI and relationship attachment assisted in the prediction of relationship satisfaction, accounting for 9% of the variance. The results suggested that components of AA relationship satisfaction are based, in part, on EI. This study is most relevant to this one because it drew from a similar target population and used one of the measures of EI to be used in this study. The latter allowed the results from the use of the EIS in this study to be compared to those reported by Deams (2007).

In the third relevant study, Holmes (2008) investigated emotional intelligence as the criterion variable and socio-economic status is the predictor variable measured by household income, parent education and occupation. Data was collected using the Mayer-Salovey-Caruso-Emotional-Intelligence-Test (MSCEIT) and the Student Demographic

Sheet (SDS) at three Historically Black Colleges and Universities (HBCUs). While the MSCEIT was not used in my research, it is important to note Schutte is based on MSCEIT. Bivariate and multivariate correlation analyses were conducted to test the study's hypotheses, a series of Spearman's ρ correlation and Pearson's *r* correlation analyses were used to compare the education levels of participants' mother's and father's, the occupations of the mothers and fathers, and SES with their EI scores. Significant positive relationships were found between emotional intelligence and all variables, except mother's occupation and household income.

A fourth study relevant to this was reported by Drati's study (2011). Drati's third research question focused on the relationship between racial identify attitudes, as measured by the CRIS, and EI, as measured by Bar-On's EQ-i. He found that (a) scores on the Pre-Encounter Self-Hatred attitude scale were significantly correlated to scores on the EQ-I Interpersonal scale, and (b) scores on the Interpersonal Multicultural Inclusive attitude scale were significantly correlated to scores on two EQ-i scales, namely Interpersonal and Adaptability. Although Bar-On's EQ-i was not used in this study, other measures of EI were used (i.e., those developed by Funderburk, Schutte, and Petrides). Similarly, although the CRIS was not used, the *Schedule of Racist Events* (Landrine & Klonoff, 1996), a measure of past experiences of racism, was used. Although the measures used by Drati was not used in this study, the use of measures in both areas provided an opportunity to further explore the relationship between EI and race-related factors as initiated by Drati. In American society, race-related factors such as experience and identity are integral components that drives how AAs emotionally engage the world

around us. Finally, Drati recommended that future studies of the relationship between EI and race-related factors should include factor analysis to generate relationships between all variables, as well as ANOVA and regression analysis to provide greater insight in relationships among study variables and aid in allowing for stronger predictions and inferences. These forms of data analysis was be used in this study.

In a fifth study, Blakely (2017), assessed the relationship of age, gender, and ethnicity to two dimensions of EI, Empathy Accuracy (EMA) and Empathy Compassion (EMC). Although her study sample was not limited to AAs, it did include a sizable sample of AAs. Her final sample consisted of 53.8% women (*n*=5,302) and 46.2% men (*n*=4,548). The sample was primarily white (*n*=8,161; 82.9%), and included AAs (*n*=293; 3%), Hispanics (*n*=564; 5.7%), and members of other ethnic groups (*n*=832; 8.4%). Further, although she did not use any of the measures of EI to be used in this study, she did describe the Ability model (Salovey et al., 2004), the Trait model (Petrides & Furnham, 2001), and a Mixed model (Bar-On, 1997a). Of these, Petrides' measure (TEIQue-SF) was used in this study. As reported earlier in this Chapter, she found age, gender, and ethnicity differences in EI scores. These findings are relevant to this study because they provide further support for the inclusion of demographic factors in this study.

Chapter 3

Methodology

Introduction

The purpose of Chapter 3 is to describe the research methodology, design, and procedures for this dissertation study. This chapter begins with a description of this study's target and accessible population, as well as a description of the sampling plan. The second section presents an overview of the study's methodology and design. In the third section, all instruments to be used in this study are identified and described. The fourth section described data collection procedures, including how students who agree to participate were assigned to groups, which instruments were completed by each group, and how those instruments were administered. The final section of this chapter describes procedures used to prepare the data set, conducted preliminary analyses and finalized the data set, and then analyzed those data.

Description of the Target Population, Accessible Populations, and Study Sample

The target population for this study includes AA college students who reside in one county located along the East Coast of Florida, or AA college students whose characteristics resemble those of students in that county. The accessible population are AA undergraduate students who are enrolled in any of the four branch campuses of the state college system within that county. As indicated in Table 3.1 (p. 111), college records from Spring 2020 indicated that this state college had a total of 14,597 students,

of whom 1,605 (11%) were self-identified as AA. This accessible population included 1,065 female and 534 male students.

Stratified random sampling procedures was used to identify students within this accessible population who was invited to participate in this study (i.e., by campus and by gender). As indicated in Table 3.1, (p.111) 50% of AA male students and 25% of AA female students on each campus was selected and invited to participate. The percentage of male students is higher than for female students for two reasons. First, these percentage would result in the selection of a nearly equivalent sample of AA male students (approximately 268) and AA female students (approximately 266), for a total sample of approximately 534 AA students. Second, there is a special initiative within this state college system that focuses on enhancing retention rates for AA male students, so a larger sample of male students is of particular interest to this state college.

A prior power analysis. An a priori power analysis was conducted to determine the minimum sample size needed to maintain sufficient power. I used the statistical software package G*Power 3.19 (Faul, Erdfelder, Buchner, & Lang, 2009) to conduct this analysis. For correlation analyses, when I used $\alpha = .05$, power = .8, and a medium effect size of .3 (Cohen, 1992), the minimum sample size suggested by G*Power was 64. For regression analyses, when I used $\alpha = .05$, power = .8, a medium effect size of .15 (Cohen, 1992), and 9 as the number of independent variables, the minimum sample size suggested by G*Power was 114.

Table 3.1

The Study's Accessible Population and Sampling Design, Based on Spring 2020 Data

	Campus A	Campus B	Campus C	Campus D	Unknown Campus	Off(Campus)	Totals
A. Total # Students	3394	6110	3581	1496	15	1	14597
• M	1273	2604	1424	544	9	0	
• F	2117	3493	2154	950	6	1	
• Did Not Specify/Unknown	4	13	3	2	0	0	
B. Total # Afr.-Am. Students	674 (20%)	398 (6.5%)	366 (10.2%)	165 (11%)	2	0	1605 (11% of A)
• M	239	143	108	44	1	0	534 (33.2% of B)
• F	433	253	258	121	1	0	1065 (66.3% of B)
• Did Not Specify/Unknown	3	3	0	0	0	0	6
C. Sample Afr. Am. Students							
• M:50% sample (of B)	120	72	54	22			268
• F:25% sample (of F)	108	63	65	30			266
Total sample							534

Methodology and Design

As implied in the description of sampling procedures, this is a quantitative study. The primary methodology involved the use of survey research methods (Fink, 2006; Fowler, 2009). In addition to the sampling design and procedures described in the previous section, students were selected and invited to participate in this study. With permission from the Vice President of Academic Affairs of this state college, personnel in the Office of Planning and Assessment provided a list of all AA students on each campus. Male and female AA students on each campus was randomly selected from these lists, until the targeted sample size for male and female students on each campus has been reached (Table 3.1, p. 111). These selected students was invited to participate in this study.

Male and female students selected to participate in this study was randomly assigned to one of two survey groups. Students in all groups were asked to complete a measure containing demographic and student-related items, Funderburk's measure of EI, the AAEIS (2007), and Landrine and Klonoff's (1996) *Schedule of Racist Events* (SRE). In addition, students in Group B completed Petrides' measure of EI (i.e., the TEIQue-SF).

Instrumentation

I used four data collecting tools: a measure of demographic factors, Funderburk's AAEIS, one validated measure of EI, TEIQue-SF, and the SRE. Each is described below.

Funderburk's AAEIS. In this study, all AA students who agree to participate were asked to complete Funderburk's AAEIS (Appendix B.4). Funderburk granted permission to use the AAEIS in this study (N. Funderburk, personal communication, December 6, 2017; Appendix A.1). This measure of EI consists of 20 items and is based

on the EI theories of Goleman (1998), as well as Mayer, Salovey, and Caruso (Mayer & Salovey, 1997). The results of Funderburk's study indicated the AAEIS had face validity and content validity in that it appeared to measure EI by viewing the tests according to the focus groups and the content related to the construct as a whole. The AAEIS also was measured for reliability by using Gage Repeatability and Reproducibility (Gage R&R) procedures. A determining factor in this measurement system is the range data between trial administrations within groups. A reliable measure will have similar scores within trail administrations and between trail administrations. She found that the AAEIS was "unreliable due only to outlier data" (2007, Abstract, p. 2). She found four outliers in her sample (*n*=90), which "skewed the measurement results by appearing to produce results that were not similar from one administration to another" and "without being able to resurvey the groups, the outlier data ended the data analysis" (p. 67).

The AAEIS was designed for individuals ages 13-19 in a variety of settings including educational, clinical, and research. It consists of 20 items that are divided into two sections. The managing emotions section consists of 15 items, each of which was rated using a four-point self-reporting scale (1 = Almost Never, 4 = Almost Always). The perceiving emotions section consists of five items; in each, participants viewed pictures of human faces displaying varied emotions and were then asked to select the emotion best reflected in each picture using a multiple-choice format. The managing emotions section was assessed by a series of questions that required the survey participant to list action choice per situation. This section was included to measure perception of emotion in self, action choice per situation, regulation of emotion, and empathy. It may be administered

through a paper survey booklet and can be scored by the test completed it in 10 to 15 minutes. Although Funderburk (2007) did not include procedures for scoring responses, information and data reported suggests that the 15 managing emotions items were scored using values in the response scale, resulting in a range of possible scores from 15 – 60, and that the five perceiving emotions items were scored as either accurate (1) or inaccurate (0). Thus, total scores on the AAEIS could range from 15 – 65 points. These scoring procedures were confirmed by Funderburk (N. Funderburk, personal communication, Oct. 16, 2019).

Panelist review of AAEIS items. Unlike some other measures of EI, Funderburk did not organized the items in the AAEIS into subscales which reflected relatively distinct dimensions of EI. In addition, despite the inclusion of items that appear to be positively and negatively worded, Funderburk did not identify negatively worded items to be reverse scored. Because the AAEIS is central to this study, these represented prominent, unanswered questions. Thus, a decision was made to present the AAEIS to a panel of three minority faculty members in higher education for careful review, with two questions in mind: (1) Did there appear to be distinct dimensions of EI among Items 1-15 in the AAEIS?, and (2) Did there appear to be any negatively worded items in the AAEIS which would require reverse scoring? The researcher's analysis and these panelist responses are summarized in Table 3.2 (p. 116). These results indicated that (1) these panel members tended to perceive six relatively distinct dimensions of EI, and the assignment of items to each dimension. Each of these dimension-specific set of items may be considered a separate subscale: (A) Empathy; (B) Conflict Avoidance; (C)

Conflict Management; (D) Self-Control; (E) Self & Social Awareness; and (F) Relationship Management. Of these, multiple models suggest that (A) and (F) are commonly viewed as healthy dimensions of EI (Table 1.2, p. 7), although, there is less agreement on (B), (C), and (D).

Further, panelists agreed on the direction and scoring of 11 of 15 items in the AAEIS, including of seven of the eight negatively worded items. Their comments on the four items on which they disagreed are presented in Table 3.3 (p. 118) to illustrate differences in what can or should be considered unhealthy and/or "negatively worded" from the perspective of traditional EI models (Table 1.2), the population featured in this study, and differing circumstances associated with the behavior(s) reflected in these items.

In addition to these differences in panelist comments on four items in the AAEIS, Panelist #2 offered additional comments about differences in what was referred to as Eurocentric and Afrocentric perspectives on healthy/adaptive and unhealthy dimensions of EI. As discussed in Chapter 2, there have been relatively few studies in which dimensions of EI have been compared across samples drawn from different racial/ethnic groups, and findings from some studies which suggest that differences in dimensions of EI appear to exist between or across such groups (e.g., Blakely, 2017; Elfbein & Ambady, 2002; Van Rooy et al, 2005; Whitman et al., 2009). In light of this, the researcher decided to include a summary of Panelist #2's comments here, as these comments may offer some unique insights into the analysis and interpretation of results

Table 3.2

Summary of the Researcher's and External Panelist's Analysis of Dimensions and Direction of the Items in AAEIS

Items 1=Almost Never; 2=Rarely; 3=Sometimes; 4=Almost Always			Direction of Items & Proposed Item Scoring	Results of External Reviews of Proposed Scoring			Final Scoring*
Item	Item	Conceptual Dimensions (Goleman, 1998)	Direction of Item (High = Healthy)	Panelist # 1	Panelist # 2	Panelist # 3	
1	When I hear a rumor about someone, I usually tell someone else before I stop and think about how that person might feel.	A. Social Awareness: Empathy	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
2	Whenever someone is being rude to me, I think it is better for me to be quiet than to say something about it.	B. Relationship Management: Conflict Avoidance	Low EI = Almost Never High EI = Almost Always	Agree	Agree	Agree	AN = 1 AA = 4
3	When someone is messing with me, or getting on my nerves, it usually ends up in a fight.	C. Relationship Management: Conflict Management	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
4	When I am mad, I try to hide it.	D. Self-Management: Self-Control	Low EI = Almost Never High EI = Almost Always	Disagree	Agree	Disagree	AN = 1 AA = 4 *
5	I would rather avoid defending myself, even if I feel bad.	B. Relationship Management: Conflict Avoidance	Low EI = Almost Never High EI = Almost Always	Disagree	Agree & Disagree	Un-certain	AN = 1 AA = 4 *
6	When another person starts a fight or argument with me, I fight or argue back.	C. Relationship Management: Conflict Management	Low EI = Almost Never High EI = Almost Always	Agree	Agree	Un-certain	AN = 1 AA = 4
7	I prefer to avoid the situation whenever somebody is bothering me.	B. Relationship Management: Conflict Avoidance	Low EI = Almost Always High EI = Almost Never	Agree	Disagree	Agree	AA = 1 AN = 4 *****
8	When I see two people talking and laughing, I think they are talking about me.	E. Self & Social Awareness: Self-Assessment	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
9	I am willing to get some of what I want and the other person get some of what they want in order to find an answer to a problem.	F. Relationship Management: Communicate/Collaborate	Low EI = Almost Never High EI = Almost Always	Agree	Agree	Agree	AN = 1 AA = 4
10	If I don't like someone, I get other people to hate on them with me.	C. Relationship Management: Conflict Management	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
11	When someone does not agree with me, I try to look at the situation from the other person's point of view	A. Social Awareness: Empathy	Low EI = Almost Never High EI = Almost Always	Agree	Agree	Agree	AN = 1 AA = 4
12	Before I get to know someone, I can tell what kind of person they are going to be.	E. Self & Social Awareness: Assessment of Others	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
13	I usually get angry quickly and do something crazy without thinking about it.	D. Self-Management: Self-Control	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****
14	When I am not sure what someone is thinking or feeling, I feel comfortable asking them to tell me so that I can understand.	F. Relationship Management: Communicate/Collaborate	Low EI = Almost Never Hi EI = Almost Always	Agree	Agree	Agree	AN = 1 AA = 4
15	When I see a fight, I say things out loud that keep the fight going.	C. Relationship Management: Conflict Management	Low EI = Almost Always High EI = Almost Never	Agree	Agree	Agree	AA = 1 AN = 4 *****

Note. Under Final Scoring, * indicates that responses to this item was "reserve scored," i.e., scored in the opposite direction of the numbering in the Response Scale.

pertaining to any of the three research questions (Table 3.4, p. 119). Without taking into consideration differences in the positive and negative wording of these items (Table 3.2, p. 116), Panelist #2 indicated that only three of these 15 items reflected healthy/adaptive EI from a traditional Eurocentric perspective (i.e., Items 9, 11, and 14). However, seven items were deemed healthy/adaptive from an Afrocentric perspective: Items 9, 11, and 14, as well as four Conflict Avoidance items, Items 2, 4, 5, and 7 (Table 3.4). It is noteworthy that these four Conflict Avoidance items were deemed by Panelist #2 to be healthy/adaptive from an Afrocentric perspective. Here is the explanation offered by Panelist #2 regarding these three Conflict Avoidance items: "If you are a disempowered marginalized group member this may prove adaptive and functional for survival" (Personal communication, Panelist #2, July 5, 2020).

When I compared both sets of Panelist #2 comments on these items, four things became apparent. First, Items 9, 11, and 14 were associated with healthy/adaptive aspects of EI from both perspectives. Second, eight items were associated with unhealthy aspects of EI from both perspectives (i.e., Items 1, 3, 6, 8, 10, 12, 13, and 15). Of these, the full panel agreed that all but one of these items should be reverse scored (i.e., with the exception of Item 6; Table 3.2, p. 116), which suggests agreement by all three panelists that these seven items reflect unhealthy aspects of EI, regardless of perspective. Third, there were only three items which were deemed unhealthy from a Eurocentric perspective, but health/adaptive from an Afrocentric perspective (i.e., three of the four

Table 3.3

Quotes from External Panelists on Items on Which They Disagree on Item Direction and Scoring

Item No.	Item	Dimension	Comments from External Panelists		
			Panelist #1	Panelist #2	Panelist #3
4	When I am mad, I try to hide it.	D. Self-Manage-ment: Self-Control	"An expression of anger is a positive and not negative emotional response. Expression does not indicate violence or negative behavior. That being said I agree with the original survey on this question"	"If you are a disempowered marginalized group member this may prove adaptive and functional for survival"	"The LEI implies self-control; the HEI does not imply transparency. It says, 'I never hide' "
5	I would rather avoid defending myself, even if I feel bad.	B. Relationship Management: Conflict Avoidance	"I agree with the original survey for this question. To defend does not allow for growth, indicating emotional immaturity"	"Continuous suppression leads to Psychopathology and thus would not be functional in those instances, unless they must develop alternate strategies for expression that validates the self."	"Uncertain. If the subject avoids defending his or herself, does that imply lack of self-control? "
6	When another person starts a fight or argument with me, I fight or argue back.	C. Relationship Management: Conflict Management			"Uncertain. There are times when one needs to diffuse confrontations."
7	I prefer to avoid the situation whenever somebody is bothering me.	B. Relationship Management: Conflict Avoidance	"Revised scoring in this question is appropriate."	"If you are a disempowered marginalized group member this may prove adaptive and functional for survival"	

Table 3.4

Summary of Additional Comments from Panelist #2 on AAEIS Items 1-15: Perceptions of Healthy and Unhealthy Aspects of EI from Eurocentric and Afrocentric Perspectives

			Eurocentric Perspective[1]		Afrocentric Perspective[1]		Comparison of Perspectives[2]	
Item	Item Wording	Panelist Comments on Item Emphasis	Healthy/ Adaptive	Unhealthy	Healthy/ Adaptive	Unhealthy	Agree	Disagree
1	When I hear a rumor about someone, I usually tell someone else before I stop and think about how that person might feel.	Conflict Strategy		X		X	X	
2	Whenever someone is being rude to me, I think it is better for me to be quiet than to say something about it.	Avoidant Strategy		X	X			X
3	When someone is messing with me, or getting on my nerves, it usually ends up in a fight.	Conflict Strategy		X		X	X	
4	When I am mad, I try to hide it.	Avoidant Strategy		X	X			X
5	I would rather avoid defending myself, even if I feel bad.	Avoidant Strategy		X	X	X	-	-
6	When another person starts a fight or argument with me, I fight or argue back.	Conflict Strategy		X		X	X	
7	I prefer to avoid the situation whenever somebody is bothering me.	Avoidant Strategy		X	X			X
8	When I see two people talking and laughing, I think they are talking about me.	Faulty Cognitive Attribution		X		X	X	
9	I am willing to get some of what I want and the other person get some of what they want in order to find an answer to a problem.	Healthy Rational Emotional Regulation	X		X		X	
10	If I don't like someone, I get other people to hate on them with me.	Conflict Strategy		X		X	X	
11	When someone does not agree with me, I try to look at the situation from the other person's point of view	Healthy Rational Emotional Regulation	X		X		X	
12	Before I get to know someone, I can tell what kind of person they are going to be.	Faulty Cognitive Attribution		X		X	X	
13	I usually get angry quickly and do something crazy without thinking about it.	Conflict Strategy		X		X	X	
14	When I am not sure what someone is thinking or feeling, I feel comfortable asking them to tell me so that I can understand.	Healthy Rational Emotional Regulation	X		X		X	
15	When I see a fight, I say things out loud that keep the fight going.	Conflict Strategy		X		X	X	

Notes. 1: The terms *Eurocentric Perspective* and *Afrocentric Perspectives* were introduced by Panelist #2, not the researcher.
2: This Comparison of Perspectives was prepared by the researcher, not Panelist #2.

Conflict Avoidance items: Items 2, 4, and 7). Lastly, Panelist #2 suggested that the fourth Conflict Avoidance item (i.e., Item 5) may be viewed as unhealthy from a Eurocentric perspective, but may or may not be healthy/adaptive or unhealthy from an Afrocentric perspective, depending on context and circumstances (Table 3.2, p. 116, Table 3.3, p. 118, and Table 3.4, p. 119). The explanation offered by Panelist #2 regarding Conflict Avoidance Item 5 was as follows: "Continuous suppression leads to Psychopathology and thus would not be functional in those instances, unless they must develop alternate strategies for expression that validates the self" (Personal communication, Panelist #2, July 5, 2020). Despite these perspectives on Items 4 and 5, a decision was made to reserve score both of them on the basis of comments from all three panelists (Table 3.2).

Petrides' TEIQue and TEIQue-SF. In light of the sampling design to be used in this study, one-third of AA students who agree to participate were asked to complete Petrides' measure of EI, the TEIQue –SF (Petrides & Furnham, 2001; Appendix B.6). Petrides and his colleagues were the first to develop a model and measure of trait EI, describing it as "a constellation of emotional self-perceptions located at the lower levels of personality" (Petrides, Pita, & Kokkinaki, 2007, p. 246). Petrides granted permission granted to use the TEIQue-SF in this study (K. Petrides, personal communication, Nov. 15, 2017; Appendix A.3).

To establish the content and construct validity of their model and measure, Petrides and his colleagues conducted a content analysis of prominent EI models, and selected only core elements common to more than one of those models to create their trait

EI sampling domain resulting trait model of EI consists of 15 facets of personality that are organized into five factors.

Later research indicated that 13 of the 15 facets loaded onto four factors: Well-Being (trait optimism, happiness, and self-esteem), Self-Control (emotion regulation, low impulsiveness, stress management), Emotionality (trait empathy, emotion perception, emotion expression, relationships) and Sociability (emotion management, assertiveness, social awareness), whereas the remaining two, namely adaptability and self-motivation, contribute directly to the global trait EI score (Petrides, 2009). The reliability of items used to assess these 15 facets, four factors, and global scores was assessed using Cronbach's alpha (Table 2.4, p.63). Of those 20 alpha values, only three were noticeably below the 0.70 threshold suggested by Nunally (1978).

The TEIQue consists of 153 items rated on a 7-point Likert-type scale, ranging from 1 (*strongly disagree, or SD*) to 7 (*strongly agree, or SA*), The TEIQue-SF (Petrides & Furnham, 2003) consists of 30 items taken from the original TEIQue (two items for each of the 15 facets) and are responded to on this same scale. The psychometric properties of the TEIQue-SF have been scrutinized through item response theory analysis (Petrides, 2009). While the full 153-item TEIQue requires about 25 minutes to complete, the TEIQue-SF requires only 5-8 minutes. For TEIQue score interpretation, the range of possible scores for global trait EI can range from 153 (a *SD* response scored as 1 for each item) to 1,071 (a *SA* response scored as 7 for each item). Similarly, for the TEIQue-SF, this range of scores falls between 30 and 210. In addition, the scores for the four factors and 15 subscales are calculated in a manner that accounts for differences in the

number of items in each factor and in each subscale (Table 2.1, p. 49). More specifically, the score for items in each subscale and in each factor are summed using rating scale values (i.e., 1 to 7). Then, each score is divided by the number of items in that factor or subscale, so that the resulting values range from 1 to 7.

The Schedule of Racist Events. Based on results reported by Drati (2010), in this study all AA students who agree to participate were asked to complete Landrine and Klonoff's Schedule of Racist Events (SRE; 1996; Appendix B.8). The SRE is an 18-item scale measuring the frequency with which AAs have experienced specific racist events, and their appraisals of those events. Permission has been obtained to use the SRE in this study (E. Klonoff, personal communication, Oct. 1, 2019; Appendix B.3).

The validity of the SRE was estimated in several ways. The first involved determining the relationship of the SRE to hypertension (Landrine & Klonoff, 1996). The second involved determining the relationship of the SRE to stress-related behavior of the individual, specifically cigarette smoking and psychiatric symptoms (Landrine & Klonoff, 1996). However, these results were based on studies involving small samples, so Landrine and Klonoff (1999) conducted a subsequent validation study that involved 520 AAs (277 females and 243 males). In their factor analysis for each of the three subscales, only one factor was retained, and all items loaded on that single factor, (1999, p. 238), which is consistent with earlier results obtained by Landrine and Klonoff (1996). Thus, although on the surface the items in the SRE may appear to measure different dimensions of racism, factor analysis results indicate that they do not. Rather, evidence indicates that the SRE is a unidimensional and construct-valid scale, and exhibits adequate convergent

and discriminant validity (Klonoff & Landrine, 1999). In addition, Landrine and Klonoff (1999) reported that internal consistency for all three subscales was high, (Cronbach alpha values of .95, .95 and .94 for recent racist events, lifetime racist events and appraised racist events, respectively), and that the stability of the SRE was high (one-month test-retest values of r = .95 and .96).

Each item in the SRE is answered on a scale that range from 1 (the event never happened to me) to 6 (the event happens almost all of the time) (Landrine & Klonoff, 1996). Seventeen of those items are completed three time: once for the frequency of the racist events in the past year, a second time for the frequency of the events in one's entire lifetime, and a third time for the appraisal of the stressfulness of each event. These are treated as separate subscales: Recent Racist Events (18 items; range of scores: 18 to 108), Lifetime Racist Events (18 items; range of scores: 18 to 108), and Appraised Racist Events (17 items; range of scores: 17 to 102).

One of the 18 items is rated twice, once for how one's life would have differed in the *past year* without experiencing racist events, and once for how one's *entire life* would have differed without experiencing racist events (Landrine & Klonoff, 1996). Scale scores are generated by summing scores on items that correspond with each of the three separate subscales. High scores on Recent and Lifetime scales indicate frequent exposure to racist experiences in the past year and over the course of a lifetime, respectively. High scores on the Appraisal scale suggest a substantial degree of stress associated with race-related experiences.

Measure of demographic factors. For the purposes of this study, I developed an outline of personal, student involvement, and parental demographic factors (Appendix B.9). All AA students who agree to participate were asked to complete this measure. This measure consists of three sections. The first section included two personal demographic items: age and gender (Quarterman, 2011). The second section included items pertaining to student-related factors unique to this study (e.g., those associated with their enrollment at this state college). These included: the campus in which they are enrolled, as well as their current major(s), and participation in competitive sports, student government, and other extracurricular activities.

The third section included items for selected family demographic factors which have been drawn from prior studies. These demographic factors included: parental level of education, parental occupation, and SES (Holmes, 2008). Whenever possible, the measures of these demographic factors used in prior studies were used in this study.

Data Collection Procedures

The data collection procedures used in this study follow from: (a) sampling procedures, notably how AA students on each campus of this state college was randomly selected from the accessible population, invited to participate in this study, and randomly assigned to one of the two study sub-samples; and (b) instrumentation procedures, notably how the instruments described in the previous section were administered to students in each sub-sample.

In the first phase of sampling, a random sample of AA male students (30%) and AA female students (20%) on each of the four campuses was selected to participate in

this study. In the second phase of sampling, all male and female students selected into the study sample were randomly assigned to one of two survey groups, as described below. For each male and female student who declines to participate in this study, a replacement was randomly selected and assigned to that group in order to maintain sample size and integrity.

Using contact information provided by personnel at this state college, each student selected into the study sample was contacted by e-mail, presented with an invitation to participate in this study, and provided with a link to their online survey. That online survey included a participant consent form, a set of directions (if and as needed), and their set of measures (Appendix B). In this order, students in each group was presented with: the demographic measure, the SRE, Funderburk's AAEIS, and one of the selected measures of EI, Group B: Petrides' TEIQue-SF. The consent form, directions, and each set of measures were organized and administered using Qualtrics, under Florida Institute of Technology's site license.

To encourage and enhance student participation, I have arranged with key state college representatives to offer incentives through a raffle to students who complete all measures. At the end of the online survey, students who wish to be entered into this raffle were asked to provide their e-mail address. The following items were identified and included in this raffle: 15 Amazon gift cards worth $20 each, as well as four caps and four t-shirts for this state college.

Data Preparation and Analysis Procedures

Data preparation. Qualtrics was used to collect all responses All data collected from students on Qualtrics was copied or imported into SPSS. In the next step, I removed all invalid responses and incomplete response (i.e., student records with more than 25% missing responses for any scale). Only student records with less than 25% missing responses in all sections was used, and each student record was assigned an ID number. At that point, I used male sample means to fill in remaining missing responses in male student records, and did likewise for missing responses in female student records.

The AAEIS, TEIQue-SF, and SRE was scored following procedures outlined in the Instrumentation section. In addition, items in the Demographics section that are categorical was coded using dummy coding procedures, and those that are continuous and ordinal (e.g., age, father's and mother's education, family income) was coded using ordinal coding procedures described by Walter, Feinstein, and Wells (1987).

Preliminary Analysis. First, I conducted multivariate outlier analysis of responses on the AAEIS, TEIQue-SF, and SRE (Tabachnick & Fidell, 2013). As appropriate, influential outliers were removed from the data set. Second, I conducted an analysis to check on multi- collinearity among these scales. Third, because factor analysis and regression analysis procedures was used to help answer the research questions, I conducted an analyses to test Cohen et al.'s (2003) six underlying assumptions: (1) correct specification of the form of the relationship (i.e., linearity); (2) normality of the residuals; (3) constant variance of residuals (i.e., homoscedasticity); (4) correct specification of the independent variables in the regression model; (5) reliable measurement of the independent variables; and (6) independence of residuals.

If no multi-collinearity is detected and these assumptions have been met, I would then conduct reliability analyses for each scale and subscale using Cronbach's alpha. These analyses were done for the total sample on that scale, as well as for male and female subsamples.

Data analysis procedures. For the first research question, I prepared a descriptive analysis of responses on each scale, including each sub-scale and all items. In addition, I conducted a correlation analysis to determine the degree to which scores on these scales and subscales may be related. Each of these analyses were done for the total sample of respondents on that scale, as well as for male and female subsamples.

The second research question pertains to the validity and reliability of Funderburk's AAEIS. Cronbach's alpha has been run to determine the internal consistency of responses on that scale. Thus, primary attention focused on analyses of the validity of the AAEIS. This included: (a) a factor analysis of the data set for the AAEIS to determine its factor structure, and the relationship of that factor structure to the design of the AAEIS; and (b) use of correlation results to determine the extent to which the AAEIS is correlated to TEIQue-SF, scales and subscales (i.e., as indicators of its concurrent validity).

The third research question asks about the relationship of experiential items measured by the SRE (Set A), personal and familial items (Set B), and academic items (Set C) to AAEIS, and TEIQue-SF scale and subscale scores. If Cohen et al.'s (2003) regression assumptions have been met, these analyses were conducted.

Chapter 4
Results

Introduction

The purpose of Chapter 4 is to describe the results of data preparation and data analyses for this study. The first section contains a description of the study sample, including descriptive statistics for their demographic, experiential, and familial characteristics. The second section presents the results of several preliminary analyses, including the analysis of missing data, removal of incomplete and invalid cases, imputation, and analyses of normality and outliers. The third section presents descriptive results for items within each instrument, by subscale. The fourth section presents the results of correlation analyses for each scale and sub-scale central to this study: the AAEIS, TEIQue-SF, and SRE. The fifth section presents the results of reliability analyses for major scales, except for the AAEIS (i.e., as this is described as part of results for Research Question 2). The sixth section contains results pertaining to Research Question 1, the EI characteristics of the study sample. The seventh section presents results of analyses pertaining to Research Question 2, the validity and reliability of the Funderburk's measure of EI, the AAEIS, including the results of the external panel review, and results of correlation, internal consistency, and factor analyses. The eighth section presents the scheme used to code responses for variables to be included in analyses for Research Question 3, as well as the results of the remaining preliminary analyses, notably of outliers, multicollinearity, and OLS regression assumptions. The ninth section presents the results of data analyses for Research Question 3, which

included correlation and hierarchical multiple regression analyses for each of the two measures of EI: the AAEIS and TEIQue-SF. The final section in this chapter contains the results of additional, exploratory analyses.

Description of the Study Sample

The total sample consisted of two groups (*n*=70). Group A responded to the AAEIS (*n*=28), while Group B responded to the AAEIS and the TEIQue-SF measures (*n*=42). Responses from items in the Demographic and Experiential section of the two versions of this instrument were reviewed, tallied, and organized into a table for reporting purposes (Table 4.1, p. 130).

The age of participants in both groups was nearly the same: (Group A) mean of 30.6, with a range of 18y-60y; and (Group B) mean of 34.85, with a range of 18y-63y. In both groups, a majority of participants were female: (Group A) 23 of 28 (82.1%); and (Group B) 31 of 42 (73.8%). There were more than three times the number of female than male students in the total sample (54 of 70, or 77.1%).

The college-related experiential data indicated that the number of participants from the four campuses varied considerably (Campus 1: $n = 27$; Campus 4: $n = 5$). The data for the number of terms completed indicated (*n*=69) this also varied considerably among participants (from < 1 to 10 terms, with a mean of 4.2 terms). Among the participants, 48 indicated they had declared a major, although only 40 identified their specific major. Those specific majors were categorized by program using the State College's course catalog, and varied considerably (Certificate Program: 2; Associate's Degrees: 12; Pathway from Associate's to Bachelor's: 2; and Bachelor's: 24). Less than

Table 4.1

Descriptive Characteristics of the Sample

Factors[1]	*n*	Distribution *(Coding)*[2]	Mean	SD
A. Demographic Characteristics				
Age				
Group A	28	18-60	30.60	12.82
Group B	42	18-63	34.85	13.61
Total Sample	70	18-63	33.15	13.37
Gender				
Group A	28	M: 5; F: 23		
Group B	42	M: 11; F: 31		
Total Sample	70	M (*0*):16; F (*1*): 54	0.77	.423
B. Experiential Characteristics				
Campus[1]	70			
Campus 1 (south)	27			
Campus 2 (south central)	18			
Campus 3 (central)	20			
Campus 4 (north)	5			
No. Terms Completed	69	< 1 - 10	4.20	2.77
Major[3]				
Group A	28	Yes: 18; No: 10		
Group B	42	Yes: 30; No: 12		
Total Sample	70	Yes: 48; No: 22		

Table 4.1 (cont.)

Factors[1]	*n*	Distribution *(Coding)*[2]	Mean	SD
Bachelor's of Applied Science				
Organizational Management	8			
Applied Health Sciences	2			
Computer Info. Systems Tech.	5			
Bachelor's of Science in Nursing	9			
General Associate in Arts	2			
B. Experiential Characteristics (cont.)				
Major				
Associate in Science				
Business Administration	2			
Computer Info. Tech.	1			
Criminal Justice Tech.	1			
Healthcare Navigation	2			
Medical Assistant Adv.	1			
Paralegal Studies	1			
Physical Therapy Asst.	1			
Social & Human Services	1			
College Credit Certificate				
Computer Programming CCC				
Human Resource Admin. CCC	1			
Medical Office Mgmt.	1			
AA Pathway to Bachelor's in Psych.	1			
AA Pathway to Bachelor's in Comp. Sci.	1			
Participate in Sports	70	Yes: 1; No: 69		
Participate in Student Govt,	70	Yes: 4; No: 66		
Participate in Other Extracurriculars	70	Yes: 8; No: 62		

Table 4.1 (cont.)

Factors[1]	*n*	Distribution *(Coding)*[2]	Mean	SD
C. Family Background				
Mother's Education[4]				
Group A	22	1: 2; 2: 11; 3: 6; 4: 3	2.45	.859
Group B	35	1: 6; 2: 8; 3: 10; 4: 5; 5: 5; 6: 1	2.94	1.392
Total Sample	57	1: 8; 2: 19; 3: 16; 4: 8; 5: 5; 6: 1	2.75	1.229
Father's Education[4]				
Group A	13	1: 4; 2: 3; 3: 3; 4: 3	2.38	1.192
Group B	23	1: 5; 2: 7; 3: 4; 4: 5; 5: 2 2.65		1.301
Total Sample	36	1: 9; 2: 10; 3: 7; 4: 8; 5: 2	2.56	1.252
Level of Family Income[5]				
Group A	28	1: 5; 2: 12; 3: 7; 4: 3; 5: 1	2.39	1.03
Group B	41	1: 15; 2: 13; 3: 8; 4: 2; 5: 3	2.15	1.195
Total Sample	69	1: 20; 2: 25; 3: 15; 4: 5; 5: 4	2.25	1.13

Notes. 1. For Factors, the n in Xn refers to the item number in this portion of the online survey.
2. For Distribution (*Coding)*, Coding refers to how numerical values were assigned to participant responses.
3. For Major, whenever possible, Majors identified by participants were organized using the information about programs and certificates offered by Eastern Florida State College available at https://www.easternflorida.edu/academics/degrees-certifications/.
4. Level of Education 1 = 12th grade or less; 2 = HS Diploma or Equivalent; 3 = Some College; 4 = Bachelor's; 5 = Master's; 6 = Doctoral.
5. For Family Income Levels: 1= < $25,000 per year; 2 = $25,001 – $44,999 per year; 3 = $45,000 - $74,999 per year; 4 = $75,000 - $99,999 per year; 5= > $100,000 per year

20% indicated that they participated in selected extracurricular activities, specifically sports (*n*=1), student government (*n*=4), and other extracurricular activities (*n*=8).

Data were collected from each student on her/his family background, including the Mother's and Father's Highest Level of Education, and the Family's Levels of Income. Of the participants who provided a response on their Mother's Highest Level of Education (n=57, or 81.4%), the largest number had received a High School or GED diploma (*n*=19) or Some College (*n*=16); only six of the 57 had completed some type of graduate degree, one of which was a Doctorate. Fewer participants provided a response on their Father's Highest Level of Education (*n*=36, or 51.4%). A majority of the responses were nearly evenly distributed: Up to Grade 12 (*n*=9), a High School or GED diploma (*n*=10), and at least a Bachelor's degree (*n*=10). Participant responses regarding the level of their Family's Level of Income (*n*=69) indicate that most were below $50,000: $25,000 - $49,999 (n=26, or 36.2%), followed by < $25,000 (n=20, or 28.9%).

Data Preparation and Preliminary Analyses, by Instrument

Missing data. In general, missing data is a major concern in survey research (Kang, 2013). It occurs when participant(s) fail to respond to individual items (e.g., demographic items) or to items in scales that contain multiple items (e.g., the SRE). Participants that do not respond to 25% or more of the items in a given scale result in their response being considered incomplete and unusable. In these cases, the participant responses for that scale are dropped from the data set (Kang, 2013). When this occurs in multiple scales or sub-scales, that participant can be removed from the data set (Kang, 2013). However, when a participant fails to respond to a smaller number of items in a

scale (i.e., less than 25%), some form of imputation is often used to fill in a value for the missing response(s). This is commonly done for scales with multiple items (e.g., AAEIS and TEIQue-SF), but less often done for demographic, experiential, and familial factors such as those summarized in Table 4.1 (p. 130) (Tsiampalis & Panagiotakos, 2020). For missing responses in scales, common forms of imputation include: use of the sample mean; cold deck and hot deck imputation; multiple imputation; and expectation maximization (Kang, 2013).

Missing data in the original data set (n=70). Table 4.2 (p. 135) summarizes the number of missing responses on the scale administered to Groups A and/or B. The data in this table indicate that there were no missing responses on items in Petrides' TEIQue-SF. and only one missing response in the COVID-19 scale. In addition, a small number of responses were missing on items in Funderburk's AAEIS, and multiple imputation was used to fill in those missing values. Finally, a larger number of missing responses was found within the SRE scale, which was the last scale in the online survey. Eight participants failed to provide more than 75% of the responses on the Recent and Lifetime SRE subscales, and 10 failed to do so for the Self-Appraisal subscale. However, a small number of missing responses were identified on demographic items (e.g., Mother's and Father's Highest Level of Education) and in the COVID scale, AAEIS subscales, and SRE subscales (i.e., Recent and Lifetime subscale). The multiple imputation feature of SPSS was used to fill in these missing responses.

Missing data for items in the Demographics section of the survey (Table 4.1, p. 130) were not reported in Table 4.2 (p. 135). Of the *demographic* variables from in this

Table 4.2

Number of Missing Responses, by Survey Scale

Section	Group	n	No. of Participants with Missing Responses: 25% or More		Less Than 25%		None	
			M	F	M	F	M	F
COVID-19	A.	28					5	23
(*5 items*)	B.	42				1	11	30
	Total	70					16	54
Funderburk's	A.	28		1		3	5	19
AAEIS[1]	B.	42					11	31
(*15 items*)	Total	70				4	16	50
Petrides' TEIQue (*30 items*)		42					11	31
Schedule of Racist Events (SRE)								
* Recent (*17 items*)		70	3	5		2	15	45
* Lifetime (*17 items*)		70	3	5		6	13	43
* Stress Appraise (*17 items*)		70	2	8	3	7	11	39
* Made Differ. (*2 items*)		70		6			16	48

Notes. 1. Missing data are reported only for AAEIS Items 1-15, as Items 16-20 used a different format (i.e., pictures) and a different response scale (i.e., multiple choice).

section to be included in analyses for Research Question 3, no responses were missing for the two demographic variables, age and gender. Two *experiential* variables associated with college experience were to be included in analyses for Research Question 3: number of terms completed, and participation in extracurricular activities. Only one response was missing for the number of terms item, and that was filled in using multiple imputation. Three items were used to collect data on student participation in extracurricular activities, but only a small number of students responded to these items: (a) sports (*n*=1); (b) student government (*n*=4); and (c) other extracurricular activities (*n*=8). Due to very small number of students who indicated that they did participate, and to pattern of these responses, a decision was made to combine responses on these three items into a single variable, student engagement, and dummy code these responses (Yes = 1, and No = 2).

In addition, I planned to include three *familial* variables in analyses for Research Question 3: mother's highest level of education (*n*=57), father's highest level of education (*n*=36), and family SES (*n*=69). In preparation for analysis, multiple imputation was used to fill in missing values for these two new parental level-of-education variables and for family SES.

Removal of participant responses. There are two reasons why responses may be removed from the data set. First, if there are problems with a scale which compromise the accuracy and/or usability of responses, then all responses on that scale should be removed. This is the reason why SSEIT responses were removed from the data set for Group A. Second, as noted above, when a participant does not respond to 25% or more of the items in a given scale, their response is considered incomplete and unusable. In these

cases, the participant responses for that scale are dropped from the data set (Kang, 2013). When this occurs on multiple scales or sub-scales, that participant is removed from the data set (Kang, 2013). There were two scales in which this degree of missing data was found: Funderburk's AAEIS and the Schedule of Racist Events (SRE). One participant in Group A (ID: S02), left four of the five multiple choice items blank, and because that portion of the AAEIS is central to the purpose and research questions in this study, that participant was dropped from the data set, reducing the sample from 70 to 69.

As indicated in Table 4.3, eight participants left 25% or more of the items in the one or more of the SRE subscales blank (i.e., four or more items).

Table 4.3

Number of Missing Responses in SRE Subscales for Selected Participants

ID No.	R Subscale	L Subscale	SA Subscale	Total
S17	4	4	4	12
S19	9	9	1	19
S20	7	5	5	17
P07	11	11	13	35
P09	0	17*	17*	34
P16	13	15	11	39
P17	17*	17*	0	34
P18	14	13	12	39

Note. * Indicates that all of the 17 items in this subscale were left blank.

The missing SRE data noted in Table 4.2 (p. 135) and Table 4.3 (p. 137) hold implications for the design of data analyses for Research Question 3, particularly in light of the limited sample size in this study (*n*=69). Therefore, in light of these missing data,

several decisions were made. First, of the 10 participants with more than 25% data missing in this subscale (Table 4.2, p. 135), five were among the eight in Table 4.3, (p. 137), but five were not. Rather than reduce the sample from *n*=61 to *n*=56 to accommodate this, a decision was made to drop SRE-SA subscale scores from all regression analyses for Research Question 3. Second, a decision also was made to drop the SRE-R and SRE-L scales from the regression analyses using the *n*=69 data set, thereby allowing those analyses to proceed with a slightly larger sample, but a slightly reduced number of independent variables. Third, a decision was made to drop the eight participants identified in Table 4.3 from the data set, thereby allowing these analyses to proceed with a slightly smaller sample (*n*=61), but a more complete set of independent variables (i.e., with SRE-R and SRE-L scales).

Analysis of patterns in remaining missing data. As indicated in Table 4.1 (p. 130) and discussed in an earlier section, data were missing for a number of independent variables to be included in regression analyses for Research Question 3. Of these, Mother's Level of Education (*n*=57) and Father's Level of Education (*n*=36), were the two factors in which missing data were most apparent. A number of approaches have been developed to determine if these and other missing values (blanks) in the data set are missing completely at random (MCAR), at random (MAR), or not at random. One of more common test is Little's Test (Little, 1988).

Little's test (Little, 1988) for data missing completely at random (MCAR) was run with SPSS, and did not produce statistically significant evidence to reject the null hypothesis that Father's Education data is MCAR ($p = 0.2$). While SPSS ran this test, the

paper by Little assumes the data may be modeled as a multivariate normal distribution, or at least the data are quantitative with sufficiently large sample size. However, this test is not suitable for categorical variables (Little, 1988; Li, 2013), as are reflected in the data collected in this study. (Personal communication, R. White, February 28, 2022).

With the assistance of Dr. White, several additional steps were taken to determine if there was any patterning to these missing data. This included using three of the most common methods: principal component analysis (PCA), multidimensional scaling (MDS), and *t*-stochastic neighbors embedding (t-SNE). "For each method, we construct a 2-dimensional plot with data vectors color-coded by availability of Father's Education data to seek evidence of some qualitative differences between these two groups of vectors" (Personal communication, R. White, February 28, 2022; see Appendix C.1).

The results of these three analyses were as follows.

1. The PCA projects the vectors into the 2-dimensional vector space that preserves the maximal total variance (Zaki & Meira, 2020). In this 2D projection, 90.5% of the variance in the original data, and the figure below shows no meaningful structure indicating the availability of Father's Education data impacts the nature of the vectors by the PCA criteria.
2. MDS (Kruskal, 1964a) aims to preserve the pairwise distances between vectors in the original high-dimensional space and in the 2-dimensional space. By this wholly different metric, the data with and without Father's Education do not indicate some qualitative difference.

3. t-SNE (Van der Maaten & Hinton 2008) is a probabilistic approach that constructs a probability distribution of pairs of vectors in high-dimensional space such that closer points have a higher probability. It then embeds these points into a 2-dimensional space such that the equivalent probability distribution over pairs of 2 dimensional vectors is as similar to the original as possible … It is especially adept as pushing more similar points closer together in the 2-dimensional space and less similar points further from one another, revealing any natural clusters in the data. However … this method applied to our dataset fails to find such clusters, suggesting the availability of father's education is not exerting much influence on the vectors. (Personal communication, R. White, February 28, 2022)

In summary, the initial results of Little's MCAR test appeared to question whether the remaining missing data, particularly for Father's Level of Education, were MCAR. However, the results of these three additional analyses indicated that there was no clear patterning to the missing data, specifically for Father's Level of Education.

Multiple imputation procedures. Having determined this, the next step in the analysis and treatment of missing data was to use the multiple imputation (MI) feature in SPSS to impute missing values.

In SPSS, MI involves two major components: (1) analysis of missing data, and then (2) use of the output of that analysis as the basis for running MI. A YouTube video was used as a guide to analyzing missing data and to carry out the steps associated with each of these components (https://www.youtube.com/watch?v=ytQedMywOjQ). The procedures in Components 1 and 2 were followed for both of the data sets that resulted

from the removal of student records (i.e., *n*=69 and *n*=61data sets). Component 1 began with the opening of one of these two SPSS datasets. In the first step I opened the Analyze tab, selected Multiple Imputation, and then selected Analyzed Patterns. Then I selected all items (variables) I wish to include in this analysis (i.e., the seven IVs to be included in analysis for Research Question 3: five COVID items: 20 AAEIS items: and 34 items from SRE R and L scales). I selected 70 as the maximum number of variables displayed, and .01% as the maximum percent of missing values. I then clicked OK, which resulted in an output file of missing values and missing value patterns in that dataset. The results of these output files are included in Appendix C.2 as they provide additional insights into missing data patterns.

With that output file open, I opened the Transform tab, under Set Active Generator selected Mersenne Twist as the random number generator, and under Active Generator selected Fixed with the value set as the default. Then, I opened the Analyze tab again, selected Multiple Imputation and selected Input Missing Data Values. Then I selected the same items, selected 10 imputations (simulations) in light of the relatively small dataset, created and named a new dataset (i.e., New Imputed Data, with either *n*=69 or *n*=61), and clicked ok. The resulting output file contained the original dataset and the results for each of those 10 imputations. When using either of these newly imputed SPSS data files to conduct statistical analyses, SPSS presented the results of each of those 10 imputations, as well as pooled and averaged the results of those 10 imputations to generate sets of results for descriptive, correlational and regression analyses.

Preliminary analyses. Two sets of preliminary analyses were carried out to determine if the data collected using measures of EI were normality distributed and contained outliers.

Normality of response, by scale. Numerical methods have the advantage of making an objective judgement of normality, but are disadvantaged by sometimes not being sensitive enough at low sample sizes (i.e., not detecting violations of normality) and being overly sensitive to large sample sizes (i.e., very small deviations from normality are detected. Analyses that can be used for this include: stem-and-leaf plots, P-P plots, Q-Q plots, the Shapiro-Wilk test for samples smaller than 50, and the Kolmogorov-Smirnov test for larger sample sizes (Ghasemi & Zahediasi, 2012). Of these, both the Shapiro-Wilk and Kolmogorov-Smirnov tests were used due the sample size in this study (n=70), and Q-Q plots were used for graphical and visual analysis purposes, to determine the normality of data for the three measures of EI: (a) Funderburk's AAEIS; and (b) Petrides' TEIQue-SF.

In this study the TEIQue-SF was included in the online survey for Group B; the final sample size for this group also was small (n=42). Finally, the AAEIS was included in the online survey for both Group A and Group B; the sample size for the combined sample was greater than 50 (n=70). This is relevant because the K-S test is highly sensitive to extreme values and is not recommended for use with samples smaller than 50. However, the S-W test is the more appropriate test of normality with samples smaller than 50. Thus, both K-S and S-W tests were run to determine if the scores on these measures of EI were normally distributed. In Table 4.4, S-W test results indicated that

total scores on all three measures were normally distributed (i.e., more than 96% of scores fit a normal distribution pattern). In Table 4.4, K-S test results indicated that TEIQue-SF total scores were normally distributed, although the AAEIS total scores were not (i.e., more than 10% of AAEIS scores deviated from a normal distribution pattern). One possible reason for the K-S results for the AAEIS is that the AAEIS contains a smaller number of items (15) than the TEIQue-SF (30). Regardless, further analysis of normality for AAEIS scores appeared to be warranted.

Table 4.4

Results of Univariates Tests of Normality for Emotional Intelligence Measures (n=70)

	Kolmogorov-Smirnov (K-S)			Shapiro-Wilk (S-W)		
Measure	Statistic	df	Sig.	Statistic	df	Sig.
AAEIS (Funderburk, 2007)	.112	70	.030*	.974	70	.144
TEIQue SF (Petrides, 2009)	.090	42	.200	.963	42	.194

Notes. These results are for the one-sample K-S test and the S-W test, which determine if the observed distribution of total scores on each measure approximates a normal distribution of scores for the population. In the K-S test, if the null hypothesis is true, the statistical result was be small (i.e., the percent of cases deviating from a normal distribution is small). In the S-W test, if the null hypothesis is true, the statistical result will be large (i.e., the percent of cases fitting the normal distribution is large). In each test, if the level of significance is less than $p < .05$ (*), then the null hypothesis is rejected.

The Quantile – Quantile plot (Q-Q plot) and box plot also are used to visually check the extent to which data on dependent variables appear to normally distributed. The Q-Q plot is a scatterplot in which the distribution of observed scores are plotted against expected (or theoretical) scores, with the results presented across quantiles (percentages) in linear form (https://data.library.virginia.edu/understanding-q-q-plots/). A Box plot presentes the distribution of scores in the form of quartiles: the distribution of scores in

the middle quartiles for the box, while the distribution of scores in the bottom and top quartile are presented as lines referred to as whiskers. Outliers in a data set are presented as exteme scores above or below these whiskers. Although the mixed results on K-S and S-W tests warranted the use of Q-Q and box plots to examine the distribution of AAEIS total scores, these plots were prepared for all three EI measures.

The Q-Q plot for AAEIS total scores (Figure 4.1) and the box plot for AAEIS total scores (Figure 4.2, p. 145) appear to be reasonably consistent with S-W results in Table 4.3 (p. 137). The Q-Q plot results indicate that plotted points fall on or close to the line of best fit. In addition, the Box plot results indicate that only three of the 70 scores fell below the bottom quartile (whisker). These graphic results indicate that AAEIS scores reflect a nearly normal distribution.

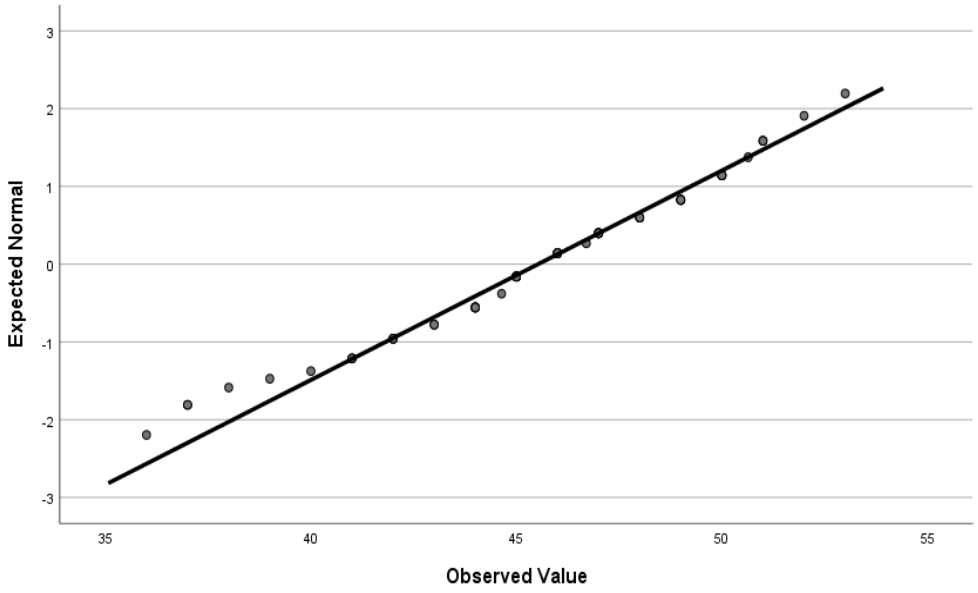


Figure 4.1. Q-Q plot for the distribution of AAEIS total scores.

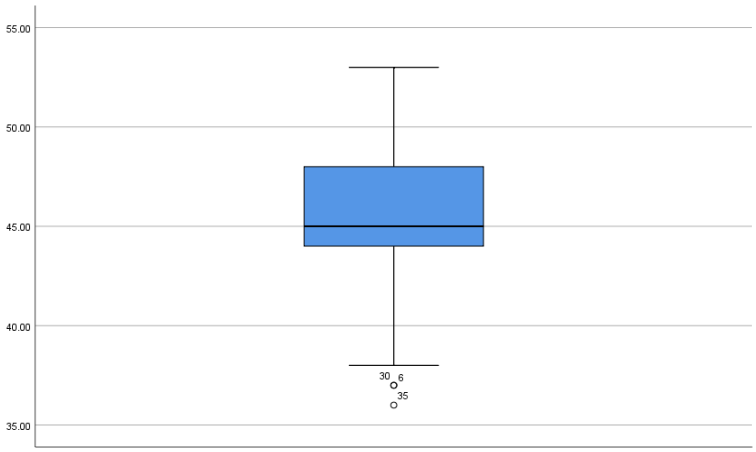


Figure 4.2. Box plot for the distribution of AAEIS total scores.

The Q-Q plot for TEIQue-SF total scores (Figure 4.3) and the box plot for TEIQue-SF total scores (Figure 4.4, p. 146) appear to be reasonably consistent with S-W results in Table 4.4 (p. 143). The Q-Q plot results indicate that plotted points fall on or

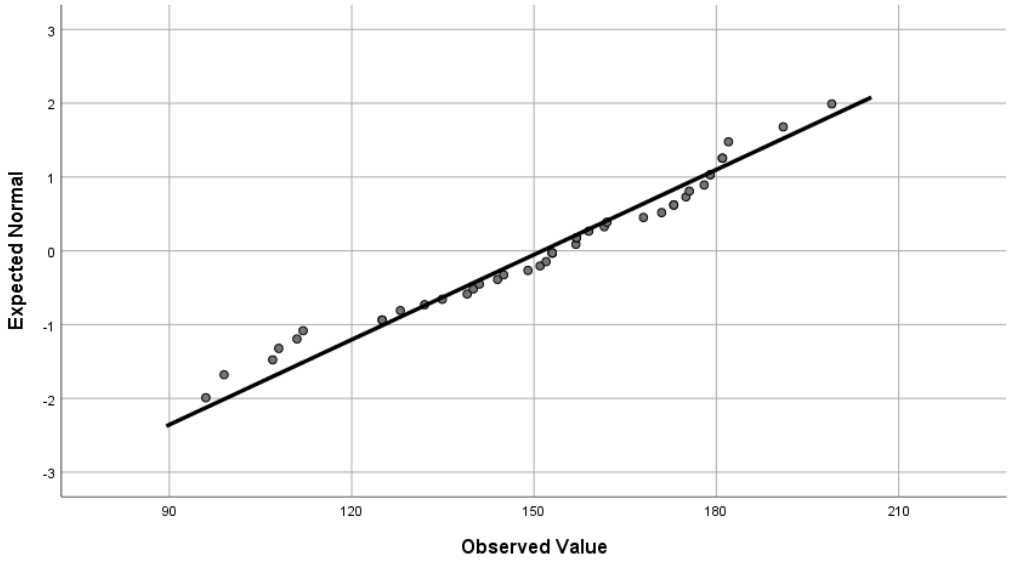


Figure 4.3. Q-Q plot for the distribution of TEIQue-SF total scores.

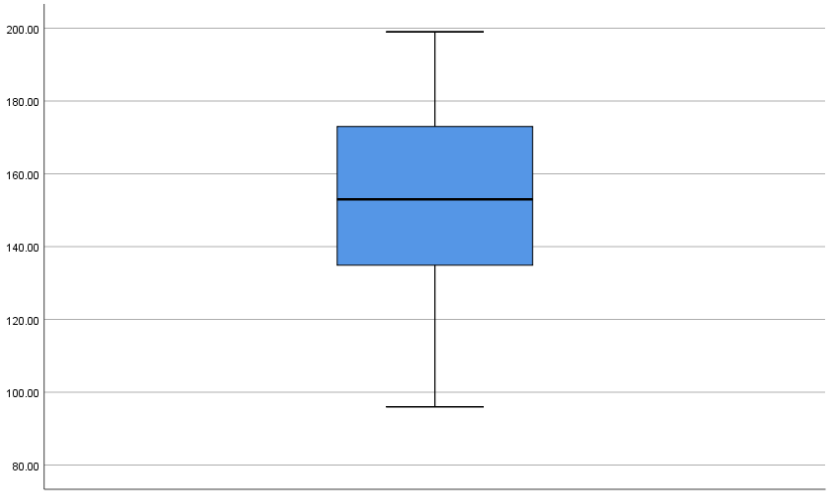


Figure 4.4. Box plot for the distribution of TEIQue-SF total scores.

close to the line of best fit. In addition, the Box plot results indicate that none of the 70 scores fell above the top quartile or below the bottom quartile (whisker). These graphic results indicate that TEIQue scores reflect a nearly normal distribution.

Analysis of outliers in measures of EI.

Univariate analyses. From a univariate perspective, the box plot for TEIQue-SF (Figure 4.4) did not indicate there were any scores that fell above the top or below the bottom quartile, although the box plot for the AAEIS (Figure 4.2, p. 145) indicated that three of the 70 scores fell below the bottom quartile.

Bivariate analyses. From a bivariate perspective, bivariate cleaning analyses were performed using the total scores of AAEIS and TEIQue-SF. A z-score greater than 3.29 indicates that score is 3.29 standard deviations above or below the mean, and therefore contains outliers. The results of these analyses indicated minimum or maximum z-scores for both measures did not fall above or below a z-score of 3.29 (Table 4.5, p. 147). These

Table 4.5

Z-Score Results of Bivariate Analyses of Outliers in Paired Measures of EI

Pair of Measures	N	Minimum z-score	Maximum z-score
AAEIS	42	-2.43659	1.77602
TEIQue-SF	42	-2.12585	1.82974

results indicated that there were no bivariate outliers in these paired sets of scores. Although the z-scores from the bivariate analysis of AAEIS and TEIQue-SF (Table 4.5) do not indicate outliers, a further analysis of the total scores for these measures of EI was conducted. In the resulting scatterplot, I observed what appeared to be several outliers (Figure, 4.5).

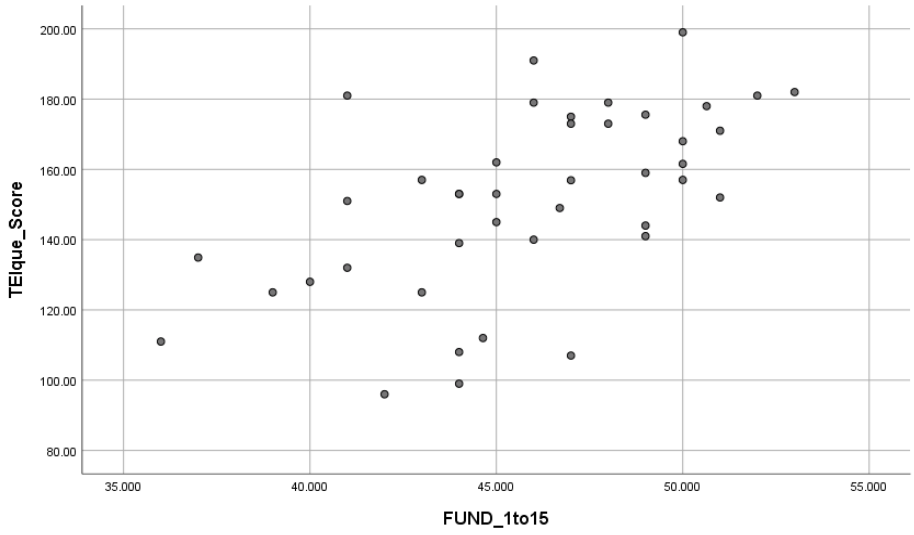


Figure 4.5. Scatterplot of AAEIS by TEIQue-SF scores.

Multivariate analyses. The final analysis of outliers was undertaken from a multivariate perspective, with specific attention to the relationship of AAEIS scores to scores on the independent variables included in regression analyses for Research Question 3. Four types of analyses were conducted: Mahalanobis distance, studentized residuals, leverage values, and Cook's distance. Only the first is used to identify outliers; the other three are used to identify participant responses and scores that are influential (https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/full/10.1002/cem.2692). Each of these analyses was conducted for the larger data set (n=69) and the smaller data set (n=61).

The results of these analyses for the larger data set are summarized in Table 4.6 (p. 149). The Mahalanobis distance analysis indicated there were no multivariate outliers in this data set. However, each of other three analyses indicated that several participant values appeared to influence the results of this regression analysis. Of these, two participants appeared to be influential in more than one of these analyses: P31 and P39. To further determine the extent to which these participants were influential, linear regression analyses were run for: (a) the imputed data set that included them (n=69); and (b) the imputed data set after they had been removed (n=67). The results of these two analyses differed somewhat, indicating that these participants appeared to influence these regression results for only one of the seven independent variables, notably Father's Level of Education. However, before removing P31 and P39 from this data set, their values for these IVs and DV were reviewed carefully Table 4.7 (p. 149).

Table 4.6

Results of Multivariate Outlier Analyses, Unimputed Data Set, n=69

Analysis	Apparent Outliers ID: Computed Value
Mahalanobis Distance[1]	none
Studentized Residuals[2]	*P31: 2.33368
Leverage Value[3]	none
Cook's Distance[4]	*P31: .24929 *P39: .30779

Notes: Four multivariate analyses were conducted in SPSS using Linear Regression, with seven IVs and AAEIS Total Scores as the DV. Results for the unimputed data set are summarized below.
1. Mahalanobis Distance. These results were: Minimum = 2/058, Maximum = 13.888, Mean = 6.767, and SD = 2.888.
2. Studentized Residuals. These results were: Minimum = - 1.408, Maximum = 2.334, Mean = .007, and SD = 1.013. The Studentized Residual value for P31 was 2.334, which was 2.3 SD above the mean.
3. Leverage. These results were: Minimum = .071, Maximum = .479, Mean = .233, and SD = .100. In general leverage values lie between 0 and (n-1)/n or, in this case .9855. None of these leverage values approached three times larger than this mean (.699) (11.1 - Distinction Between Outliers & High Leverage Observations | STAT 501 (psu.edu)). The largest leverage value of .479 is 2.06 times this average leverage value.
4. Cook's Distance. These results were: Minimum = .00001, Maximum = .308, Mean = .046, and SD = .067. Cook's Distance values for P31 and P39 were (a) were the only two values greater than .09, and (b) far greater than 4/69 = .058 (How to Identify Influential Data Points Using Cook's Distance - Statology).* These two student records appear to serve as outliers or as influential, so further analyses were run to determine whether their presence and absence would have a significant influence on regression results.

Table 4.7

Item Responses and Scale Scores for P31, P39, and P28

Variable	ID	Independent Variables						Dependent
	Age	Gender	No. of Terms	Student Engage.	Mother's Educ.	Father's Educ.	Family SES	AAEIS Total Score
P31	35	F	10	No	Some Coll.	Some Coll.	$25-44K	68
P39	60	F	4	Yes	GR 12 or <	GR 12 or <	$25-44K	61
P28	56	F	4	No	GR 12 or <	GR 12 or <	<$25K	48

This review indicated that none of these values vary from what would be expected in this study's accessible population. Rather, each is what is commonly considered to be an older, non-traditional student. In addition, both were females. Finally, it is not unusual that older female students would have higher AAEIS scores. In light of the results of the Mahalanobis analysis and of this review, a decision was made to retain P31 and P39 in this data set for further analyses.

The results of these analyses for the smaller data set are summarized in Table 4.8 (p. 151). The Mahalanobis distance and the leverage value analyses indicated that there were no multivariate outliers in this data set. However, two of the other analyses indicated that several participants appeared to influence the results of this linear regression analysis. Of these, three participants appeared to be influential in more than one of these analyses: P28, P31, and P39. To further determine the extent to which these participant values were influential, regression analyses were run for: (a) the imputed data set that included them (n=61); and (b) the imputed data set after they had been removed (n=58). The results of these two analyses differed only slightly, indicating that these three participants had a relatively small influence on these regression results. However, before removing P28, P31, and P39 from this data set, their values on these IVs and DV were reviewed carefully (Table 4.7, p. 149). This review indicated that none of these values also appeared to vary from what would be expected in the study's accessible population. Rather, all three of these participants are what is commonly considered to be an older, non-traditional students. In addition, all three were females. Finally, it is not unusual that older female students would have higher AAEIS scores.

Table 4.8

Results of Multivariate Outlier Analyses, Unimputed Data Set n=61

Analysis	Apparent Outliers ID: Computed Value
Mahalanobis Distance[1]	none
Studentized Residuals[2]	*P39: 2.1967
Leverage Value[3]	none
Cook's Distance[4]	*P39: .58279 *P31: .30612 *P28: .15452 S08: .09162 P01: .07300 P40: .06626

Notes: Four multivariate analyses were conducted in SPSS using Linear Regression, with nine IVs and AAEIS Total Scores as the DV. Results for the unimputed data set are summarized below.
1. Mahalanobis Distance. These results were: Minimum = 4.332, Maximum = 14.743, Mean = 8.640, SD = 2.837.
2. Studentized Residuals: These results were: Minimum = - 1.874, Maximum = 2.1967, Mean = .049, SD = 1.01. The Studentized Residual value for P39 was 2.197, which was slightly larger than 2 SD above the mean.
3. Leverage: These results were: Minimum = .180, Maximum = .614, Mean = .360, SD = .118. In general leverage values lie between 0 and (n-1)/n or, in this case .9836. All of these leverage values are less than two times this mean (.720). The largest leverage value of .614 is only 1.7 times this average leverage value.
4. Cook's Distance: These results were: Minimum = .000, Maximum = .583, Mean = .069, SD = .125. Cook's Distance values for P39, P31, P28, S08, P01, and P40 were greater than 4/61 = .0656 (How to Identify Influential Data Points Using Cook's Distance - Statology). Of these, P39, P31, and P28 were the only Cook's values greater than 0.1.
* These three student records appear to serve as outliers or as influential, so further analyses were run to determine whether their presence and absence would have a significant influence on regression results

In light of the results of the Mahalanobis analysis and of this review, a decision was made to retain P28, P31, and P39 in this data set for further analyses.

Descriptive Statistics, by Instrument

Description of results for COVID items. The responses on COVID-19 items are summarized in Table 4.9 (p. 153). The raw data (*n*=70) were used to prepare the distribution of responses, along with means and standard deviations, for each item and for this scale in Table 4.9. Items 1, 3 and 5 were negatively worded, and therefore reverse scored before calculating *M* and *SD*s. However, reverse scoring is not reflected in the distribution of responses for the raw data set. In addition, due to missing values within the raw data set, some participants were dropped from that data set, yielding two smaller data sets (*n*=69, and *n*=61). Multiple imputation was used to fill in the missing values in these imputed data sets, and subsequently, mean values were calculated for each item and for this scale for both of these imputed data sets. These descriptive statistics were calculated for each item and for the COVID scale. Students indicating higher stress levels, due to COVID 19 losses (i.e., jobs, loved ones, etc.).

Description of results for Funderburk's AAEIS items. The summary of responses to items in Funderburk's AAEIS scale are presented in Table 4.10, p. 156). For the two items in the Empathy subscale (one positively and one negatively worded), the mean response ranged from 3.1 to 3.4 (i.e., slightly above "Sometimes"). Of the four items in the Conflict Management subscale, one was positively worded and three were negatively worded. The mean response for all three negatively worded items ranged from 3.5 to 3.9 (i.e., above the midpoint between "Sometimes" and "Almost Always"). However, the mean response for the positively worded items was less than 2.5 (i.e., below the midpoint between "Rarely" and "Sometimes"). Of the three items in the

Table 4.9

Summary of Responses on COVID-19 Items, by Subsample and Sample

Items*	n	Distribution of Responses[2] SA	A	N	D	SD		M	SD
1. *The COVID-19 pandemic around the world does NOT really concern me									
Raw Data Set							MISS		
Group A	28	0	2	2	5	19	0	4.46	.92
Group B	42	3	2	1	15	21	0	4.17	1.17
Total	70	3	4	3	20	40	0	4.29	1.08
Imputed Data Sets							IMP		
n=69	69						0	4.28	
n=61	61						0	4.23	
2. The spread of COVID-19 across the U.S. has become a serious concern for me									
Raw Data Set							MISS		
Group A	28	18	6	1	1	2	0	4.32	1.19
Group B	42	20	14	1	3	3	1	4.10	1.22
Total	70	38	20	2	4	5	1	4.19	1.10
Imputed Data Sets							IMP		
n=69	69						1	4.17	
n=61	61						1	4.27	

Table 4.9 (cont.)

Items*	n	Distribution of Responses[2] SA	A	N	D	SD		M	SD
3. *No one close to me (family or community) has been seriously affected by COVID-19									
Raw Data Set							MISS		
Group A	28	9	5	2	5	7	0	2.86	1.65
Group B	42	11	9	6	10	6	0	2.79	1.44
Total	70	20	14	8	15	13	0	2.81	1.52
Imputed Data Sets							IMP		
n=69	69						0	2.83	
n=61	61						0	2.79	
4. COVID-19 has made my life very difficult									
Raw Data Set							MISS		
Group A	28	4	8	8	8	0	0	3.29	1.05
Group B	42	8	10	16	5	3	0	3.36	1.14
Total	70	12	18	24	13	3	0	3.33	1.10
Imputed Data Sets							IMP		
n=69	69						0	3.30	
n=61	61						0	3.26	

Table 4.9 (cont.)

Items*	n	Distribution of Responses[2] SA	A	N	D	SD		M	SD
5. *Emotionally, I've found it easy to cope with everything going on as a result of COVID-19									
Raw Data Set							MISS		
Group A	28	5	6	3	9	5	0	3.11	1.42
Group B	42	8	13	13	7	1	0	2.52	1.07
Total	70	13	19	16	16	6	0	2.76	1.24
Imputed Data Sets							IMP		
n=69	69						0	2.78	
n=61	61						0	2.77	
COVID Scale									
Raw Data Set									
Group A	28							17.96	3.61
Group B	42							17.30	2.43
Total Sample	70							17.46	3.22
Imputed Data Sets									
n=69	69							17.36	
n=61	61							17.32	

Notes. 1: Abbreviations under 'Distribution of Responses' stand for: SA = Strongly agree, A = Agree, N = Neutral, D = Disagree, SD= Strongly Disagree, and IMP = Imputed Value

* = These items were negatively worded and reverse scored before calculating frequencies, means, and SDs.

Table 4.10

Summary of Responses on Funderburk's AAEIS Items, by Subsample and for the Total Sample

Part A. Rating Scale Items

Panel / Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Empathy	*1. When I hear a rumor about someone, I usually tell someone else before I stop and think about how that person might feel.								
	Raw Data Set						MISS		
	Group A	28	2	5	7	14	0	3.18	.983
	Group B	42	3	10	9	20	0	3.10	1.000
	Total	70	5	15	16	34	0	3.13	.992
	Imputed Data Sets						IMP		
	n=69						0	3.12	
	n=61						0	3.11	
	11. When someone does not agree with me, I try to look at the situation from the other person's point of view.								
	Raw Data Set						MISS		
	Group A	28	0	1	16	11	0	3.36	.559
	Group B	42	1	7	18	16	0	3.17	.794
	Total	70	1	8	34	27	0	3.24	.711
	Imputed Data Sets						IMP		
	n=69						0	3.23	
	n=61						0	3.26	

Table 4.10 (cont.)

Panel Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Conflict Management	*3. When someone is messing with me, or getting on my nerves it usually ends up in a fight.								
	Raw Data Set						MISS		
	Group A	28	0	5	7	16	0	3.39	.786
	Group B	42	1	4	7	30	0	3.57	.770
	Total	70	1	9	14	46	0	3.50	.776
	Imputed Data Sets						IMP		
	n=69						0	3.52	
	n=61						0	3.49	
	6. When another person starts a fight or argument with me, I fight or argue back.								
	Raw Data Set						MISS		
	Group A	28	6	10	7	5	0	2.39	1.03
	Group B	42	9	11	19	3	0	2.38	.909
	Total	70	15	21	26	8	0	2.39	.952
	Imputed Data Sets						IMP		
	n=69						0	2.39	
	n=61						0	2.43	
	*10. If I don't like someone, I get other people to hate on them with me.								
	Raw Data Set						MISS		
	Group A	28	0	0	3	25	0	3.89	.315
	Group B	42	1	0	6	35	0	3.79	.565
	Total	70	1	0	9	60	0	3.83	.481
	Imputed Data Sets						IMP		
	n=69						0	3.83	
	n=61						0	3.85	

Table 4.10 (cont.)

Panel Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Conflict Management (cont.)	*15. When I see a fight, I say things out loud that keep the fight going.								
	Raw Data Set						MISS		
	Group A	28	0	1	4	23	0	3.79	.499
	Group B	42	0	0	3	38	1	3.93	.260
	Total	70	0	1	7	61	1	3.87	.380
	Imputed Data Sets						IMP		
	n=69						1	3.80	
	n=61						1	3.90	
Conflict Avoidance	2. Whenever someone is being rude to me, I think it is better for me to be quiet than to say.								
	Raw Data Set						MISS		
	Group A	28	2	5	16	5	0	2.86	.803
	Group B	42	7	7	23	5	0	2.62	.909
	Total	70	9	12	39	10	0	2.71	.870
	Imputed Data Sets						IMP		
	n=69						0	2.72	
	n=61						0	2.72	
	5. I would rather avoid defending myself, even if I feel bad.								
	Raw Data Set						MISS		
	Group A	28	6	13	9	0	0	2.11	.737
	Group B	42	19	7	14	2	0	1.98	1.000
	Total	70	8	27	16	19	0	2.03	.904
	Imputed Data Sets						IMP		
	n=69						0	2.01	
	n=61						0	2.03	

Table 4.10 (cont.)

Panel Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Conflict Avoidance (cont.)	*7. I prefer to avoid the situation whenever somebody is bothering me.								
	Raw Data Set						MISS		
	Group A	28	8	14	5	1	0	1.96	.793
	Group B	42	13	19	5	5	0	2.05	.962
	Total	70	21	33	10	6	0	2.01	.893
	Imputed Data Sets						IMP		
	n=69						0	2.00	
	n=61						0	1.97	
Self Control	4. When I am mad, I try to hide it.								
	*Raw Data Se*t						MISS		
	Group A	28	3	4	13	8	0	2.96	.940
	Group B	42	8	23	7	4	0	2.83	.853
	Total	70	11	27	20	12	0	2.88	.883
	Imputed Data Set						IMP		
	n=69						0	2.88	
	n=61						0	2.85	

Table 4.10 (cont.)

Panel Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Self-Control (cont.)	*13. I usually get angry quickly and do something crazy without thinking about it.								
	Raw Data Set						MISS		
	Group A	28	0	4	9	15	0	3.39	.737
	Group B	42	0	4	6	29	3	3.64	.643
	Total	70	0	8	15	44	3	3.54	.703
	Imputed Dataset						IMP		
	n=69						3	3.56	
	n=61						3	3.55	
Self & Social Awareness	*8. When I see two people talking and laughing, I think they are talking about me.								
	Raw Data Set						MISS		
	Group A	28	1	3	9	15	0	3.36	.826
	Group B	42	2	3	7	30	0	3.55	.832
	Total	70	3	6	16	45	0	3.47	.829
	Imputed Data Sets						IMP		
	n=69						0	3.46	
	n=61						0	3.48	
	*12. Before I get to know someone, I can tell what kind of person they are going to be.								
	Raw Data Set						MISS		
	Group A	28	7	12	7	2	0	2.14	.891
	Group B	42	2	25	8	7	0	2.48	.833
	Total	70	9	37	15	9	0	2.34	.866
	Imputed Data Sets						IMP		
	n=69						0	2.36	
	n=61						0	2.39	

Table 4.10 (cont.)

Panel Subscale	Items	*n*	Distribution of Responses[1] AN 1	R 2	S 3	AA 4		*M*	*SD*
Relationship Management	9. I am willing to get some of what I want and the other person get some of what they want in order to find an answer to a problem.								
	Raw Data Set						MISS		
	Group A	28	2	1	14	11	0	3.23	.833
	Group B	42	0	2	23	17	0	3.36	.577
	Total	70	2	3	37	28	0	3.31	.688
	Imputed Dataset						IMP		
	n=69						0	3.31	
	n=61						0	3.34	
	14. When I am not sure what someone is thinking or feeling, I feel comfortable asking them to tell me so that I can understand.								
	Raw Data Set						MISS		
	Group A	28	3	3	10	12	0	3.11	.994
	Group B	42	2	7	15	17	1	3.15	.872
	Total	70	5	10	25	29	1	3.13	.922
	Imputed Dataset						IMP		
	n=69						1	3.14	
	n=61						0	3.15	

Subtotal Scores, Items 1-15		
Raw Data Sets		
AAEIS Group A (n=28)	45.07	3.18
AAEIS Group B (n=42)	45.83	4.03
Total Sample (n=70)	45.53	3.71
Imputed Data Sets		
n=69	45.49	
n=61	45.56	

Table 4.10 (cont.)

Part B. Multiple Choice Items

Item	Sample	Distribution of Responses[2] a	b	c	d	Blank
16	Total (*n*=70)	55	0	13	1	1
	Imputed (*n*=69)	54	0	13	1	1
	(*n*=61)	49	0	11	1	0
17	Total (*n*=70)	22	27	1	19	1
	Imputed (*n*=69)	22	27	1	19	0
	(*n*=61)	19	25	0	17	0
18	Total (*n*=70)	42	7	1	19	1
	Imputed (*n*=69)	42	7	1	19	0
	(*n*=61)	36	6	1	17	0
19	Total (*n*=70)	14	32	14	9	1
	Imputed (*n*=69)	14	32	14	9	0
	(*n*=61)	13	27	12	9	0
20	Total (*n*=70)	0	19	10	40	1
	Imputed (*n*=69)	0	19	10	40	0
	(*n*=61)	0	18	9	34	0

Total Scores, Parts A & B (Items 1-20)		
Raw Data Sets		
Group A (*n*=28)	47.85	3.266
Group B (*n*=42)	48.57	4.326
Total Sample (n=70)	48.29	3.936
Imputed Data Sets		
n=69	48.29	3.936
n=61	48.33	3.906

Notes. 1: Abbreviations under 'Distribution of Responses' for Items in Part A. stand for: AN = Almost Never, R = Rarely, S = Sometimes, AA = Almost Always, MIS = Missing Value, and IMP = Imputed Value.

2: The underlined count in the frequency distribution of responses for each item reflects the correct response identified by Funderburk (2007).

* = These items were considered negatively worded by the External Panel, and reverse scored before calculating frequencies, means, and SDs.

Conflict Avoidance subscale, two were positively worded and one was negatively worded. Despite this difference in the direction of wording in these items, the mean response on all three items ranged between 1.9 to 2.9 (i.e., from just below "Rarely" to just below "Sometimes"). Of the two items in the Self-Control subscale, one item was positively worded and other negatively worded. The mean response to these two items was noticeably different: (a) for the positively worded item, the mean response was slightly below 3.0 (i.e., just below "Sometimes"); and (b) for the negatively worded item, the mean response was just below or above 3.4 (i.e., about at the midpoint between "Sometimes" and "Almost Always"). Of the two items in the Self and Social Awareness subscale, both items were negatively worded. Despite the fact that both items were worded in the same direction, the mean response to each was noticeable different: (a) for Item 8, which focused on themselves, the mean response was above 3.5 (i.e., at the midpoint between "Sometimes" and "Almost Always"); but (b) for Item 12, which focused on others, the mean response was below 2.5 (i.e., the midpoint between "Rarely" and "Sometimes"). Lastly, both of the items in the Relationship Management subscale were positively worded. The mean response for both of these items ranged from 3.1 to 3.35 (i.e., slightly above "Sometimes").

Description of results for Petrides' TEIQue-SF items. The summary of descriptive statistics for items in Petrides' TEIQue-SF are presented in Table 4.11 (p. 164). Of the 30 items in the Petrides' TEIQue-SF: (a) these items represent 15 dimensions of EI and therefore 15 pairs of items; (b) 15 items were positively worded and 15 were negatively worded (i.e., although some dimensions and pairs contained two

Table 4.11

Summary of Responses on Petrides' TEIque-SF (n=42)

Subscale	Items	Distribution of Responses[1] Completely Disagree 1	2	3	4	5	6	Completely Agree 7	IMP	*M*	*SD*
Well-being	*5. I generally don't find life enjoyable	2	2	2	4	5	7	19	1	5.56	1.79
	9. I feel that I have a number of good qualities.	2	1	1	2	5	8	22	1	5.90	1.63
	*12. On the whole, I have a gloomy perspective on most things	3	4	2	5	5	7	16	0	5.14	2.02
	20. On the whole, I'm pleased with my life.	4	3	2	7	9	8	9	0	4.76	1.90
	24. I believe I'm full of personal strengths.	0	2	1	5	3	11	20	0	5.90	1.43
	27. I generally believe that things will work out fine in my life.	0	1	3	6	8	8	16	0	5.60	1.43
	Subscale Score									32.86	
	Subscale, Mean Item Rating									5.48	
Self-Control	*4. I usually find it difficult to regulate my emotions	4	1	4	5	7	10	11	0	5.00	1.90
	*7. I tend to change my mind frequently	5	2	7	11	5	8	4	0	4.17	1.79
	15. On the whole, I'm able to deal with stress	2	1	3	9	10	11	6	0	4.93	1.54
	19. I'm usually able to find ways to control my emotions when I want to.	1	2	1	17	5	16	10	0	5.40	1.52
	*22. I tend to get involved in things I later wish I could get out of	2	7	4	6	7	7	9	0	4.57	1.93
	30. Others admire me for being relaxed.	2	2	2	7	7	11	11	0	5.19	1.70
	Subscale Score									29.26	5.80
	Subscale, Mean Item Rating									4.88	

Table 4.11 (cont.)

Subscale	Items	Distribution of Responses[1] Completely Disagree 1	2	3	4	5	6	Completely Agree 7	IMP	*M*	*SD*
Emotionality	1. Expressing my emotions with words is not a problem for me	4	2	4	4	10	8	10	0	4.86	1.91
	*2. I often find it difficult to see things from another person's viewpoint	1	0	3	6	7	12	13	0	5.52	1.45
	*8. Many times, I can't figure out what emotion I'm feeling	1	3	11	6	1	6	14	0	4.79	1.96
	*13. Those close to me often complain that I don't treat them right	1	1	0	3	1	11	25	0	6.21	1.37
	*16. I often find it difficult to show my affection to those close to me	5	5	3	2	3	9	15	0	4.90	2.25
	17. I'm normally able to "get into someone's shoes"	2	5	3	11	4	12	5	0	4.57	1.74
	23. I often pause and think about my feelings	3	2	2	6	5	11	13	0	5.21	1.85
	*28. I find it difficult to bond well even with those close to me.	2	3	2	3	6	9	17	0	5.45	1.83
	Subscale Score Subscale, Mean Item Rating									38.47 4.81	6.92
Sociability	6. I can deal effectively with people		1	1	1	6	7	12	13	1	5.56	1.45
	*10. I often find it difficult to stand up for my rights		3	3	3	4	7	8	14	0	5.05	1.96
	11. I'm usually able to influence the way other		2	4	3	13	7	5	8	0	4.57	1.73
	21. I would describe myself as a good negotiator		1	3	4	8	8	9	8	1	4.90	1.62
	*25. I tend to "back down" even if I know I'm right		1	3	5	9	8	5	11	0	4.88	1.71

Table 4.11 (cont.)

Subscale	Items	Distribution of Responses[1] Completely Disagree 1	2	3	4	5	6	Completely Agree 7	IMP	*M*	*SD*
Sociability (cont.)	*26. I don't seem to have any power at all over other people's feelings	5	2	7	8	8	6	6	0	4.29	1.86
	Subscale Score									29.24	6.89
	Subscale, Mean Item Rating									4.87	
Auxiliary[1]	3. On the whole, I'm a highly motivated person	1	2	0	6	7	10	16	0	5.62	1.55
	*14. I often find it difficult to adjust my life according to the circumstances	2	2	3	7	7	9	12	0	5.14	1.75
	*18. I normally find it difficult to keep myself motivated	4	1	4	6	5	11	11	0	5.00	1.91
	29. Generally, I'm able to adapt to new environments	1	0	1	5	7	14	14	0	5.74	1.33
	Subscale Score									21.50	5.26
	Subscale, Mean Item Rating									5.37	
	TEIQue-SF, Total Score									151.3	26.03
	TEIQue-SF, Mean Item Rating									5.04	

Notes. 1. Although Petrides did not assign these four Auxiliary Items to any Subscale and did not form them into a Subscale of their own, Subscale scores and Mean Item Ratings were calculated for descriptive reporting purposes.
* = These items were negatively worded and reverse scored before calculating frequencies, means, and SD.

positively or two negatively worded items) (Table 2.1, p. 49). In addition, on the basis of the psychometric properties, these 30 items were organized into four relatively distinct subscales, each of which contained six to eight items, although four items were not assigned to any subscale (i.e., Auxiliary Items).

The modified Likert scale used in the TEIQue-SF contained seven points, ranging from a low of 1 = Completely Disagree to a high of 7 = Completely Agree. Overall, the mean response per item ranged from a low of $x = 4.81$ for the Emotionality subscale to a high of $x = 5.48$ for the Well-Being subscale. For three of these four subscales, the mean item response was nearly equivalent, ranging from $x = 4.81$ to $x = 4.88$ (i.e., slightly above the response scale midpoint of 4). Thus, the higher mean item response on the Well-Being subscale was more than half a point higher. Although the four Auxiliary items do not represent a subscale, the mean item response on those items was $x = 5.375$, which is close to the mean item response for the Well-Being scale.

Lastly, mean item responses exhibited a reasonable degree of variability across positively and across negatively worded items. Among the 15 positively worded items, the lowest mean item response was found on items 11 (Emotionality subscale) and 17 (Sociability subscale): $x = 4.57$, while the highest mean item response was found on items 9 and 20 (Well-Being subscale): $x = 5.90$. Among the 15 negatively worded items, the lowest mean item response was found on Item 7 (Self-Control subscale): $x = 4.17$, while the highest mean item response was found on Item 13 (Emotionality subscale): $x = 6.21$.

Description of results for Klonoff and Landrine's SRE items. A summary of the descriptive statistics for items in Klonoff and Landrine's SRE scale are presented in Table 4.12 (p. 169). Following procedures established by Klonoff and Landrine's (1999), all items were positively score for the SRE instrument. The SRE contains 17 prompts designed to reflect different kinds of experiences of racism. Each prompt is followed by three questions. The first two questions pertained to the relative frequency of that experience within the past year (Recent) and on a lifetime basis (Lifetime), with possible responses ranging from 1 = Never to 6 = Almost All of the Time. The third question asks each participant to rate how stressful those experiences were (Stress Appraisal), with responses ranging from 1 = Not At All to 6 = Extremely. All 17 Recent items served as one subscale, all 17 Lifetime items a second, and all 17 Stress Appraisal items a third. Thus, the scores on each subscale could range from a low of 17 to a high of 102. Higher scores on the Recent and Lifetime subscales indicate more frequent exposure to racist experiences in the past year and over the course of a lifetime, respectively (Klonoff & Landrine, 1999; as cited in Greer, 2010). Overall, the average score on the 17 items in the Recent subscale was x = 32.7, and on the Lifetime subscale was 44.01. The mean ratings for items in each subscale varied moderately across the raw data set for Groups A and B (i.e., from a low of 1.24 to a high of 3.55 on a scale of 1-6). More specifically, the lowest mean rating for items in both subscales was found on Item 14: Recent subscale x = 1.24, and Lifetime subscale x = .146 (i.e., between Never = 1 and Once in a While = 2). For the Total Sample, the highest mean rating for items in both subscales was found on Item 5: Recent subscale x = 2.98, and Lifetime subscale x = .355 (i.e., between 3 = Sometimes,

Table 4.12

Summary of Responses on Schedule of Racist Events SRE, by Subscale

Part A. Items in the *Recent and Lifetime Subscales*	*n*	Distribution of Responses[1] N 1	OW 2	S 3	AL 4	M 5	AAT 6		*M*	*SD*
1. *How* many times have you been treated unfairly by *teachers and professors* because you are Black:										
Group A								MISS		
Recent: In the past year?	27	18	5	3	0	0	1	0	1.59	1.11
Lifetime: In your lifetime?	27	4	11	6	3	1	2	0	2.70	1.38
Group B										
Recent: In the past year?	39	25	8	2	0	2	2	0	1.77	1.40
Lifetime: In your lifetime?	38	13	10	4	5	4	2	0	2.55	1.59
Total										
Recent: In the past year?	66	43	13	5	0	2	3	0	1.70	1.29
Lifetime: In your lifetime?	65	17	21	10	8	5	4	0	2.62	1.50
Imputed Dataset[2]								*IMP*		
Recent	61							0	1.66	
Lifetime	61							0	2.62	
2. How many times have you been treated unfairly by your *employers, bosses and supervisors* because you are Black:										
Group A								MISS		
Recent: In the past year?	28	15	3	2	1	1	4	0	2.31	1.91
Lifetime: In your lifetime?	27	9	2	5	4	1	4	2	2.92	1.77
Group B										
Recent: In the past year?	39	25	4	4	4	2	0	0	1.82	1.27
Lifetime: In your lifetime?	37	13	2	9	6	4	3	0	2.86	1.68
Total										
Recent: In the past year?	67	40	7	6	5	3	4	0	2.02	1.57
Lifetime: In your lifetime?	64	22	4	14	10	5	7	2	2.80	1.70
Imputed Dataset								*IMP*		
Recent	61							0	1.90	
Lifetime	61							2	2.79	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
3. How many times have you been treated unfairly by your *coworkers, fellow students and colleagues* because you are Black:										
Group A								MISS		
Recent: In the past year?	27	14	2	4	1	2	4	0	2.52	1.92
Lifetime: In your lifetime?	28	9	6	1	5	4	3	0	2.59	1.59
Group B										
Recent: In the past year?	40	25	6	5	1	3	0	0	1.78	1.23
Lifetime: In your lifetime?	39	10	8	9	7	3	2	0	2.77	1.77
Total										
Recent: In the past year?	67	39	8	9	2	5	4	0	2.07	1.58
Lifetime: In your lifetime?	67	19	14	10	12	7	5	0	2.70	1.52
Imputed Dataset								*IMP*		
Recent	61							0	1.92	
Lifetime	61							0	2.69	
4. How many times have you been treated unfairly by people in *service jobs* (store clerks, waiters, bartenders, bank tellers, and others) because you are Black:										
Group A								MISS		
Recent: In the past year?	28	10	3	5	4	1	5	0	2.93	1.88
Lifetime: In your lifetime?	28	4	5	3	6	5	5	0	3.64	1.72
Group B										
Recent: In the past year?	39	17	6	3	6	4	3	0	2.56	1.74
Lifetime: In your lifetime?	39	8	9	5	6	5	7	0	3.18	1.69
Total										
Recent: In the past year?	67	27	9	8	10	5	8	0	2.72	1.80
Lifetime: In your lifetime?	67	12	14	8	12	10	12	0	3.37	1.71
Imputed Dataset								*IMP*		
Recent	61							0	2.67	
Lifetime	61							0	3.25	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
5. How many times have you been treated unfairly by *strangers* because you are Black?										
Group A								MISS		
Recent: In the past year?	26	3	7	5	3	3	5	0	3.42	1.72
Lifetime: In your lifetime?	26	1	4	9	4	3	5	0	3.73	1.48
Group B										
Recent: In the past year?	39	10	10	9	5	2	3	0	2.69	1.50
Lifetime: In your lifetime?	39	6	4	12	6	6	5	0	3.44	1.58
Total										
Recent: In the past year?	65	13	17	14	8	5	8	0	2.98	1.63
Lifetime: In your lifetime?	65	7	8	21	10	9	10	0	3.55	1.54
Imputed Dataset								*IMP*		
Recent	61							0	2.89	
Lifetime	61							0	3.41	
6. How many times have you been treated unfairly by *people in helping jobs* (doctors, nurses, psychiatrists, case workers, dentists, school counselors, therapists, social workers and others) because you are Black?										
Group A								MISS		
Recent: In the past year?	26	18	3	1	1	0	3	0	1.88	1.68
Lifetime: In your lifetime?	26	14	5	3	1	0	3	0	2.12	1.65
Group B										
Recent: In the past year?	39	20	10	4	2	2	1	0	1.95	1.31
Lifetime: In your lifetime?	37	14	5	7	6	4	1	0	2.57	1.53
Total										
Recent: In the past year?	65	38	13	5	3	2	4	0	1.92	1.46
Lifetime: In your lifetime?	63	28	10	10	7	4	4	0	2.38	1.60
Imputed Dataset								*IMP*		
Recent	61							0	1.92	
Lifetime	61							0	2.41	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
7. How many times have you been treated unfairly by *neighbors* because you are Black?										
Group A								MISS		
Recent: In the past year?	26	13	4	5	1	1	1	1	2.04	1.37
Lifetime: In your lifetime?	26	9	7	4	1	2	1	2	2.29	1.39
Group B										
Recent: In the past year?	39	22	8	4	3	2	0	0	1.85	1.20
Lifetime: In your lifetime?	37	18	6	4	5	2	2	0	2.27	1.57
Total										
Recent: In the past year?	65	35	12	9	4	3	1	1	1.92	1.27
Lifetime: In your lifetime?	63	27	13	8	6	4	3	2	2.28	1.49
Imputed Dataset								*IMP*		
Recent	61							1	1.90	
Lifetime	61							2	2.28	
8. How many times have you been treated unfairly by *institutions* (schools, universities, law firms, the police, the courts, the Department of Social Services, the Unemployment Office and others) because you are Black?										
Group A								MISS		
Recent: In the past year?	27	15	5	3	2	1	1	0	1.96	1.40
Lifetime: In your lifetime?	27	11	5	7	2	1	1	0	2.26	1.37
Group B										
Recent: In the past year?	40	25	7	2	2	1	3	0	1.90	1.53
Lifetime: In your lifetime?	38	13	9	4	5	2	4	1	2.62	1.68
Total										
Recent: In the past year?	67	40	12	5	4	2	4	0	1.93	1.47
Lifetime: In your lifetime?	65	24	14	11	7	3	5	1	2.47	1.56
Imputed Dataset								*IMP*		
Recent	61							0	1.80	
Lifetime	61							1	2.45	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
9. How many times have you been treated unfairly by *people that you thought were your friends* because you are Black?										
Group A								MISS		
Recent: In the past year?	26	17	6	1	1	0	1	0	1.62	1.17
Lifetime: In your lifetime?	26	12	8	2	1	0	3	0	2.20	1.67
Group B										
Recent: In the past year?	38	25	3	7	1	0	2	0	1.79	1.34
Lifetime: In your lifetime?	38	11	10	11	2	1	3	0	2.50	1.44
Total										
Recent: In the past year?	64	42	9	8	2	0	3	0	1.72	1.27
Lifetime: In your lifetime?	64	23	18	13	3	1	6	0	2.38	1.54
Imputed Dataset								*IMP*		
Recent	61							0	1.67	
Lifetime	61							0	2.34	
10. How many times have you been *accused or suspected of doing something wrong* (such as stealing, cheating, not doing your share of the work, or breaking the law) because you are Black?										
Group A								MISS		
Recent: In the past year?	25	15	4	2	3	0	1	0	1.88	1.36
Lifetime: In your lifetime?	28	9	6	4	4	3	1	0	2.59	1.55
Group B										
Recent: In the past year?	38	26	4	5	0	1	2	0	1.74	1.37
Lifetime: In your lifetime?	37	17	6	3	4	4	3	0	2.49	1.76
Total										
Recent: In the past year?	63	41	8	7	3	1	3	0	1.79	1.36
Lifetime: In your lifetime?	65	26	12	7	8	7	4	0	2.53	1.66
Imputed Dataset								*IMP*		
Recent	61							0	1.75	
Lifetime	61							0	2.47	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
11. How many times have people *misunderstood your intentions and motives* because you are Black?										
Group A								MISS		
Recent: In the past year?	26	10	6	5	1	0	4	0	2.50	1.74
Lifetime: In your lifetime?	25	6	6	5	2	2	4	0	3.00	1.78
Group B										
Recent: In the past year?	38	17	12	5	1	1	1	1	1.92	1.17
Lifetime: In your lifetime?	37	10	10	9	4	1	2	1	2.50	1.36
Total										
Recent: In the past year?	64	27	18	19	2	1	5	1	2.15	1.45
Lifetime: In your lifetime?	62	16	16	14	6	3	6	1	2.70	1.55
Imputed Dataset								*IMP*		
Recent	61							1	2.12	
Lifetime	61							1	2.64	
12. How many times did you want to *tell someone off for being racist but didn't say anything* because you are Black?										
Group A								MISS		
Recent: In the past year?	28	8	8	3	2	1	5	1	2.81	1.82
Lifetime: In your lifetime?	27	7	5	4	2	4	4	1	3.11	1.82
Group B										
Recent: In the past year?	38	17	9	3	2	2	3	2	2.22	1.57
Lifetime: In your lifetime?	37	9	6	7	6	2	5	2	3.02	1.67
Total										
Recent: In the past year?	66	25	17	6	4	3	8	3	2.47	1.70
Lifetime: In your lifetime?	64	16	11	11	8	6	9	3	3.06	1.73
Imputed Dataset								*IMP*		
Recent	61							3	2.39	
Lifetime	61							3	3.03	

Table 4.12 (cont.)

	n	Distribution of Responses: N 1	OW 2	S 3	AL 4	M 5	AAT 6		*M*	*SD*
13. How many times have you been *really angry about something racist that was done to you?*										
Group A								MISS		
Recent: In the past year?	26	11	5	4	3	1	1	1	2.24	1.42
Lifetime: In your lifetime?	27	7	6	5	5	0	2	2	2.64	1.43
Group B										
Recent: In the past year?	38	19	11	4	0	1	3	0	2.00	1.47
Lifetime: In your lifetime?	37	7	9	8	3	5	5	0	3.14	1.70
Total										
Recent: In the past year?	64	30	16	8	3	2	4	1	2.10	1.44
Lifetime: In your lifetime?	64	14	15	13	8	5	7	2	2.93	1.60
Imputed Dataset								*IMP*		
Recent	61							1	2.10	
Lifetime	61							2	2.96	
14. How many times were you *forced to take drastic steps* (such as filing a grievance, filing a lawsuit, quitting your job, moving away, and other actions) to deal with some racist thing that was done to you?										
Group A								MISS		
Recent: In the past year?	25	21	1	2	0	0	0	1	1.21	.575
Lifetime: In your lifetime?	26	20	3	1	0	0	0	2	1.20	.488
Group B										
Recent: In the past year?	38	33	2	1	2	0	0	0	1.26	.760
Lifetime: In your lifetime?	38	25	7	4	0	1	1	0	1.63	1.15
Total										
Recent: In the past year?	63	54	3	3	2	0	0	1	1.24	.688
Lifetime: In your lifetime?	64	45	10	5	0	1	1	2	1.46	.956
Imputed Dataset								*IMP*		
Recent	61							1	1.26	
Lifetime	61							2	1.49	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
15. How many times have you *been called a racist name like n_____, a coon, jungle bunny, or other names*?										
Group A								MISS		
Recent: In the past year?	26	13	7	1	3	1	1	0	2.04	1.42
Lifetime: In your lifetime?	26	10	5	3	4	1	3	0	2.62	1.74
Group B										
Recent: In the past year?	38	25	6	4	0	2	1	0	1.71	1.27
Lifetime: In your lifetime?	39	11	12	3	5	3	5	0	2.79	1.75
Total										
Recent: In the past year?	64	38	13	5	3	3	2	0	1.84	1.34
Lifetime: In your lifetime?	65	21	17	6	9	4	8	0	2.72	1.73
Imputed Dataset								*IMP*		
Recent	61							0	1.75	
Lifetime	61							0	2.62	
16. How many times have you *gotten into an argument or a fight about something racist that was done to you or to someone else?*										
Group A								MISS		
Recent: In the past year?	26	15	3	3	2	0	3	0	2.15	1.71
Lifetime: In your lifetime?	26	13	4	2	3	1	3	0	2.40	1.78
Group B										
Recent: In the past year?	40	30	7	1	1	0	1	0	1.43	.984
Lifetime: In your lifetime?	37	17	9	3	4	2	2	0	2.22	1.53
Total										
Recent: In the past year?	66	45	10	4	3	0	4	0	1.71	1.36
Lifetime: In your lifetime?	63	30	13	5	7	3	5	0	2.29	1.63
Imputed Dataset								*IMP*		
Recent	61							0	1.64	
Lifetime	61							0	2.25	

Table 4.12 (cont.)

		Distribution of Responses								
	n	N	OW	S	AL	M	AAT		*M*	*SD*
		1	2	3	4	5	6			
17. How many times have you been *made fun of, picked on, pushed, shoved, hit, or threatened with harm* because you were Black?										
Group A								MISS		
Recent: In the past year?	24	16	3	3	0	0	1	1	1.60	1.69
Lifetime: In your lifetime?	25	13	7	2	0	0	2	1	1.87	1.39
Group B										
Recent: In the past year?	39	34	0	3	1	0	1	0	1.36	1.03
Lifetime: In your lifetime?	37	19	6	6	2	1	3	0	2.16	1.57
Total										
Recent: In the past year?	63	40	3	6	1	0	2	1	1.45	1.09
Lifetime: In your lifetime?	62	32	13	8	2	1	5	1	2.05	1.50
Imputed Dataset								*IMP*		
Recent	61							1	1.44	
Lifetime	61							1	2.05	
Group A										
Subscale Score, *Recent*									35.41	17.60
Subscale Score, *Lifetime*									43.73	18.71
Group B										
Subscale Score, *Recent*									30.98	13.11
Subscale Score, *Lifetime*									44.46	19.51
Total										
Recent Score									32.70	15.20
Recent, Mean Item Rating									1.92	
Lifetime Score									44.01	18.77
Lifetime, Mean Item Rating									2.58	
Total, Imputed Dataset								*IMP*		
Recent	61							1	32.77	
Lifetime	61							1	43.73	

Table 4.12 (cont.)

Part B. Items in the *Stress Appraisal Subscale*	*n*	Distribution of Responses: NAA					EX	MISS	*M*	*SD*
		1	2	3	4	5	6			
1. How many times have you been treated unfairly by *teachers and professors* because you are Black?	70	27	9	2	8	11	8	5	2.89	1.94
2. How many times have you been treated unfairly by your *employers, bosses and supervisors* because you are Black?	70	24	3	5	5	10	15	8	3.31	2.12
3. How many times have you been treated unfairly by your *coworkers, fellow students and colleagues* because you are Black?	70	22	5	6	13	9	9	6	3.17	1.87
4. How many times have you been treated unfairly by people in *service jobs* (store clerks, waiters, bartenders, bank tellers, and others) because you are Black?	70	21	9	8	7	6	14	5	3.19	1.97
5. How many times have you been treated unfairly by *strangers* you are Black?	70	18	8	10	7	8	13	6	3.28	1.92
6. How many times have you been treated unfairly by *people in helping jobs* (doctors, nurses, psychiatrists, case workers, dentists, school counselors, therapists, social workers and others) because you are Black?	70	34	4	5	3	7	10	6	2.61	2.00
7. How many times have you been treated unfairly by *neighbors* because you are Black?	70	32	4	9	5	2	8	10	2.42	1.81
8. How many times have you been treated unfairly by *institutions* (schools, universities, law firms, the police, the courts, the Department of Social Services, the Unemployment Office and others) because you are Black?	70	30	6	6	6	8	7	7	2.63	1.88
9. How many times have you been treated unfairly by *people that you thought were your friends* because you are Black?	70	25	8	9	9	3	7	8	2.64	1.74

Table 4.12 (cont.)

		Distribution of Responses								
	n	NAA 1	2	3	4	5	EX 6		*M*	*SD*
10. How many times have you been *accused or suspected of doing something wrong* (such as stealing, cheating, not doing your share of the work, or breaking the law) because you are Black?	70	24	1	8	4	5	19	9	3.36	2.16
11. How many times have people *misunderstood your intentions and motives* because you are Black?	70	21	10	8	6	5	9	11	2.87	1.83
12. How many times did you want to *tell someone off for being racist but didn't say anything* because you are Black?	70	19	7	6	7	6	15	10	3.32	1.98
13. How many times have you been *really angry about something racist that was done to you?*	70	19	3	10	5	9	14	10	3.39	1.95
14. How many times were you *forced to take drastic steps* (such as filing a grievance, filing a lawsuit, quitting your job, moving away, and other actions) to deal with some racist thing that was done to you?	70	39	6	4	6	1	4	10	1.92	1.51
15. How many times have you *been called a racist name like n_____, a coon, jungle bunny, or other names*?	70	28	5	5	7	5	14	6	2.97	2.07
16. How many times have you *gotten into an argument or a fight about something racist that was done to you or to someone else?*	70	31	8	3	6	5	10	7	2.62	1.96
17. How many times have you been *made fun of, picked on, pushed, shoved, hit, or threatened with harm* because you were Black?	70	33	3	4	3	6	10	9	2.64	2.06

Table 4.12 (cont.)

		Distribution of Responses							
	n	NAA					EX	*M*	*SD*
		1	2	3	4	5	6		
Total									
Stress Appraisal Score								49.20	24.67
Stress Appraisal, Mean Item Rating								2.89	

Notes. 1. Within Part A, for the Recent and Lifetime subscales, the abbreviations for response scale options should be interpreted as follows: N = Never, OW = Once in a While, S = Sometimes, AL = A Lot, M = Most of the Time, and AAT = Almost All of the Time. 2. Due to the large number of missing responses in all three SRE subscales, decisions were made to: (a) drop the SRE from the *n*=69 data set; (b) remove eight participants from that data set, resulting in the *n*=61 data set; (c) remove Self-Appraisal subscale items from the *n*=61 data set; and (d) fill in remaining missing values in the SRE Recent and Lifetime subscales using multiple imputation methods. For this reason, only descriptive results for the *n*=61 imputed data set are reported here. 3. With these decisions in mind, within Part B, only descriptive results for the *n*=70 raw data set are reported here.

and 4 = A Lot). Further, on all 17 pairs of items in the Recent and Lifetime subscales, the mean ratings for items in the Lifetime subscale were higher than for items in the Recent subscale. For the Total Sample, the smallest differences in mean ratings on paired Recent – Lifetime items were: .22 (Item 14) and .36 (Item 7), and the largest differences in these mean ratings were .92 (Item 1), .88 (Item 15), and .83 (Item 13).

The Stress Appraisal subscale was treated differently than the Recent and Lifetime subscales due to the large number of number of missing responses in the Self Appraisal subscale (Table 4.2, p. 135). Thus, multiple imputation was not used to fill missing responses in the Self-Appraisal subscale, and scores on this subscale were not included in regression analyses for Research Question 3. However, responses to items in the Self Appraisal subscale also were treated differently due to the use of a different response scale for items in this subscale: 1 = Not At All, and 6 = Extremely. Higher scores on the Self Appraisal scale suggest a substantial degree of stress associated with race-related experiences (Klonoff & Landrine, 1999; as cited in Greer, 2010). Overall, the average score on the Self Appraisal subscale was $x = 49.2$. The mean ratings for items in this subscale varied moderately across the raw data set for the Total Sample, from a low of 1.92 (where 2 = Once in a While) to a high of 3.39 (where 3 = Sometimes, and 4 = A Lot). The mean ratings on items in the Self-Appraisal scale was $x=2.89$. In this subscale the lowest mean rating was found on Item 14: $x = 1.92$, and highest mean ratings were found on Items 2, 6, 10, and 13 (i.e., all were above 3.3).

Correlations Among Subscales, by Instrument

Correlation refers to the nature of the relationship between two variables. When both variables are measured using interval or ratio scales, the Pearson Product-Moment correlation is used to determine the strength and direction of the relationship between variables. However, when both variables are measured using ordinal scales, the Spearman-Rank (hereafter, Spearman's) correlation is used for this purpose. In this study, the COVID scale, AAEIS (Items 1-15), TEIQue-SF, and SRE all used ordinal measurement scales, so only Spearman correlation values were calculated and reported here. Items 16-20 in the AAEIS were measured using an interval scale (i.e., as multiple-choice items), so they are not included in these analyses.

To run Spearman's correlation, the data sets must meet three assumptions:

- Assumption #1**:** Both two variables were measured on a continuous and/or ordinal scale; that is, you can have: (a) two continuous variables; (b) two ordinal variables; or (c) one continuous and one ordinal variable;
- Assumption #2: Your two variables represent paired observations; and
- Assumption #3: There needs to be a monotonic relationship between the two variables.

You can check this assumption by preparing a scatterplot and visually inspecting the graph (https://statistics.laerd.com/statistical-guides/spearmans-rank-order-correlation-statistical-guide.php). As both AAEIS and TEIque-SF items were measured using an ordinal scale, and observations on each pair of subscales were included in these

correlation analyses, Assumptions #1 and #2 were met. To check Assumption #3, scatterplots for each pair of subscales within each EI measure were prepared and reviewed. Those scatterplots indicate that Assumption #3 was met for the TEIQue-SF (see Appendix C.4, p. 415), but was not met for the AAEIS (see Appendix C4.). The scatterplot for all 15 pairs of TEIQue-SF subscales indicate that none of these relationship appeared to be linear or curved, so none can be considered monotonic (https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/supporting-topics/basics/linear-nonlinear-and-monotonic-relationships/). However, due to the importance of the AAEIS to this study, these Spearman correlation analyses were included here, and the violation of this third assumption was noted as a limitation in Chapter 5.

In this section, Spearman's correlation analyses were reported for subscales within the AAEIS, TEIQue-SF, and SRE (i.e., R and L subscales only). The items in the COVID scale were not analyzed in this way because they awee used only as a check the possible influence of the pandemic on participants (i.e., as possible history-related threat).

Correlation results for the AAEIS subscales. Based on results of the External Panel, scores were calculated for the six subscales in the AAEIS (Items 1-15) (Table 4.10, p. 156). Spearman's correlation analyses were conducted to determine the strength and direction of relationships among the scores on those subscales (Table 4.13, p. 184).

Among the results reported in Table 4.13, of the correlation values for the 15 pairs of AAEIS subscales, 12 were positive and three were negative, although all but one would be considered very weak (i.e., $r < 0.20$). The only statistically significant

Table 4.13

Results of Spearman's Correlation Analyses for AAEIS Subscales (n=70)

Subscales		Empathy	Management	Conflict Avoidance	Conflict Self-Control	Self & Social Awareness	Relationship Management
Empathy	*r*		- .030	.008	.167	.005	.306 *
(*2 items*)	p		*.803*	*.946*	*.168*	*.970*	*.010*
Conflict Manage	*r*			.039	- .064	.125	.128
(*4 items*)	p			*.749*	*.600*	*.304*	*.290*
Conflict Avoidance	*r*				.108	.003	- .162
(3 items)	p				*.374*	*.983*	*.180*
Self-Control	*r*					.185	.054
(*2 items*)	p					*.126*	*.659*
Self & Social	*r*						.115
Awareness	p						*.344*
(*2 items*)							
Relationship	*r*						
Management	p						
(*2 items*)							

Notes. *r* = Spearman's correlation value. p = probability of that *r* value, with *n*=70. * = statistically significant at p < .05

correlation found was between the Empathy subscale and the Relationship Management subscale: r = .306 (p = .01), both of which were deemed to be healthy dimensions of EI by the External Panel. The next largest correlation value was r = .185. Of the three negative correlation values found, the strongest negative correlation was between the Conflict Avoidance and Relationship Management subscale: r = - .162 (p=.180). One inter-pretation of this correlation is that Relationship Management requires that both persons in the relationship consider each other's point of view, whereas in Conflict Avoidance, either or both persons in the relationships may be unable or unwilling to do this for the sake of avoiding conflict. Weak negative correlations were found between the Conflict Management and Self-Control subscale (r = - .064; p=.600), and between the Conflict Management and Empathy subscale (r = - .03; p=.803). In summary, weak correlation values for relationships among the six subscales within the AAEIS suggest that the dimensions of EI identified by the Expert Panel were reasonably separate and distinct.

Correlation results for TEIQue-SF subscales. Spearman's correlation analyses were conducted to determine the strength and direction of the relationship among the scores on those four subscales (Table 4.14 p. 186). The four TEIQue-SF subscales were positively and moderately-to-strongly correlated to each other. Five of these six correlations were statistically significant. The strongest of these positive correlation were found between the Well-Being and Emotionality subscales: r = .745 (p = .000), and the Self-Control and Emotionality subscales: r= .678 (p=.000). The magnitude of the correlations among TEIQue-SF subscales is greater than was found among AAEIS

subscales (Table 4.13, p. 184).

Table 4.14

Results of Spearman's Correlation Analyses for TEIQue-SF Subscales[1] (n=42)

Subscales		Well-Being	Self-Control	Emotionality	Sociability
Well-Being	*r*		.614**	.745**	.594**
(*6 items*)	p		*.000*	*.000*	*.000*
Self-Control	*r*			.678**	.288
(*6 items*)	p			*.000*	*.065*
Emotionality	*r*				.518**
(*8 items*)	p				*.000*

Notes. *r* = Spearman's correlation value. p = probability of that *r* value, with *n*=42. 1. The TEIQue-SF includes 30 items, although only 26 were assigned to these four subscale. The four items that were not are refered to as Auxiliary Items, and because they are more-or-less independent items, they were not included in this analysis.
* = statistically significant at p < .05. **. Correlation is significant at the 0.01 level (2-tailed).

Correlation results for SRE subscales. Spearman's correlation analyses were conducted to determine the strength and direction of the relationship among the scores on the three subscales in the SRE (Table 4.15). The SRE subscales were positively and strongly correlated to each other. The strongest significant correlation was between the Lifetime and the Stress Appraisal subscales: *r* = .770 (p = .000), and the next strongest was between the Recent and the Lifetime subscales: *r*=.749 (p=.000).

Table 4.15

Results of Spearman's Correlation Analyses for SRE Subscales (n=70)

Subscales		Recent	Lifetime	Stress Appraisal
Recent	*r*		.749**	.571**
	p		*.000*	*.000*
Lifetime	*r*			.770**
	p			*.000*

Notes. *r* = Spearman's correlation value. p = probability of that *r* value, with *n*=70.
* = Statistically significant at p < .05; and ** = Statistically significant at p < 0.01 level (2-tailed).

Reliability of Measures

This section contains the results of reliability testing for measures central to this study: a second measure of EI (TEIQue-SF) and the SRE. These tests were limited for several reasons. First, the validity of the TEIQue-SF, and SRE were established in previous studies (e.g., TEIQue: Petrides, 2009; SRE: Klonoff & Landrine, 1999). For this reason, only the reliability of these measures in this study was calculated. Second, because Research Question 2 focuses on the reliability and validity of the AAEIS, these results were not reported here, but rather in that section.

Results of reliability for the TEIQue-SF. Cronbach's alpha was used to determine the internal consistency of the 30 items within the TEIQue-SF for the sample in Group B (*n*=42). The resulting standardized Cronbach's alpha value was .899, which is considered to be in the *good* range (https://stats.oarc.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/).

Results of reliability for the SRE. Cronbach's alpha was used to determine the internal consistency of the 17 items within two of the SRE scales for the total sample (*n*=70). The standardized Cronbach's alpha value for the SRE Recent (R) scale was .914, and for the SRE Lifetime (L) scale was .938. Both of these alpha values fall within the *excellent* range (https://stats.oarc.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/) Unfortunately SPSS was unable to calculate Cronbach's alpha values using the slightly smaller imputed data set (*n*=61).

Results for Research Question 1

Research Question 1 is stated as follows: What are the features of emotional intelligence among African-American college students at a public state college in Central Florida as determined by:

a. Funderburk's AAEIS;

b. Petrides' TEIQue-Short Form (SF); and

c. Klonoff and Landrines' SRE?

For (1a), results were reported for the entire sample (*n*=70), (1b) results were reported for Group A (*n*=28), and for (1c), results were reported for Group B (*n*=42).

Results for Research Question 1a. Descriptive results for the AAEIS Total Score (Items 1-20), the items measured on a rating scale (Items 1-15, where 1 = Almost Never to 4 = Almost Always), the five multiple choice items (Items 16-20), and each of the six subscales identified by the External Panel are summarized in Table 4.16 (p. 190). These results were prepared for the total sample (*n*=69), as well for the male (*n*=16) and female (*n*=53) segments of that sample.

For the total sample, the largest Mean Item Ratings were found for the Conflict Management subscale (x = 3.4), Relationship Management subscale (x = 3.21), and Empathy subscale (x = 3.18). Of these, items in the Conflict Management subscale tended to focus on assertive and/or aggressive responses to conflict, while items in the Empathy subscale tended to focus on a willingness to consider another's thoughts and feelings (i.e., as in perspective taking), and items in the Relationship Management subscale tended to focus on being responsive to another's interests on an active or

interactive basis. Thus, the items in the former subscale appear to reflect a distinctly different dimension of EI than the items in latter two subscales. Same time, the lowest Mean Item Rating was found for the Conflict Avoidance subscale (x = 2.47), followed by the Self & Social Awareness subscale (x = 2.92). It also is noteworthy that the difference in Mean Item Ratings for the Conflict Management and Conflict Avoidance subscales was 0.93, which is almost equivalent to one full point on this four-point rating scale. The descriptive results for male participants (*n*=16) and female participants (*n*=53) are similar to those for the total sample (i.e., there were minor differences in the order and magnitude of Mean Item Ratings). For male participants, the largest Mean Item Ratings were found on the Conflict Management and Empathy subscales (x = 3.31), followed by Relationship Management (x = 3.25). For the larger subsample of female participant, the largest Mean Item Ratings were found on Conflict Management (x = 3.42), Relationship Management (x = 3.20), and Empathy (3.13). This was true for subscales with the lowest Mean Item Ratings: Conflict Avoidance (Male x = 2.42, and Female x = 2.48), and Self & Social Awareness (Male x = 2.97, and Female x = 2.90). This description of results might be interpreted as indicating that there was little or no difference in Mean Item Ratings for male and female participants, although that is not entirely true (Table 4.16, p.190). These results indicate that there were modest differences in Mean Item Ratings for male and female participants on two subscales: Self Control (Male x = 3.20, and Female x = 2.95; difference = 0.25), and Empathy (Male x = 3.31, and Female x = 3.13; difference = 0.18). On both subscales, the Mean Item Rating for males was greater than

Table 4.16

Results for the Total Sample on the AAEIS (n=69)

	Males				Females				Total Sample			
	n	Min-Max[1]	x^2	SD	n	Min-Max[1]	x^2	SD	n	Min-Max[1]	x^2	SD
Total Score	16	39 - 55	48.85	4.28	53	41 - 57	48.13	3.87	69	39 - 57	48.29	3.94
Score, Items 1-15	16	37 - 51	45.98	3.71	53	36 - 53	45.41	3.80	69	36 - 53	45.54	3.74
Score, Items 16-20	16	0 - 5	2.88	1.45	53	1 - 5	2.72	1.06	69	0 - 5	2.75	1.16
Subscale Scores[3]												
Empathy Subscale (2)	16	5 - 8	6.62	1.31	53	3 - 8	6.26	1.29	69	3 - 8	6.35	1.29
Mean Item Rating			3.31				3.13				3.18	
Conflict Mgmt. Subscale (4)	16	10 - 15	13.25	1.29	53	9 - 16	13.70	1.26	69	9 – 16	13.59	1.27
Mean Item Rating			3.31				3.43				3.40	
Conflict Avoid. Subscale (3)	16	5 - 10	7.25	1.29	53	4 - 12	7.45	1.47	69	4 - 12	7.41	1.43
Mean Item Rating			2.42				2.48				2.47	
Self-Control Subscale (2)	16	4 - 8	6.41	1.11	53	3 - 8	5.90	1.28	69	3 - 8	6.01	1.24
Mean Item Rating			3.20				2.95				3.00	
Self & Social Aware (2)	16	4 - 8	5.94	1.12	53	3 - 8	5.79	1.18	69	3 - 8	5.83	1.16
Mean Item Rating			2.97				2.90				2.92	
Relationship Mgmt. (2)	16	4 - 8	6.50	1.41	53	4 - 8	6.40	1.20	69	4 - 8	6.42	1.24
Mean Item Rating			3.25				3.20				3.21	

Notes. 1: Min-Max refers to the minimum (smallest) and maximum (largest) score on that set of items.
2: Mean (x) scores were calculated for the entire set of items, and were not adjusted for that number of items, as is sometimes done for ordinal scales.
3: Subscale scores include only Items 1-15. The number in (parens) after each subscale refers to the number of items in that subscale. Mean Item Ratings were calculated by dividing each Subscale Score by the number of items in that subscale.

for females, although there may be a number of possible explanations for this (e.g., sample sizes; characteristics of males and females who chose to participate voluntarily).

Results for Research Question 1b. Descriptive results for the TEIQue-SF Total Scores from responses to the 30 Likert-type scale items (Completely Disagree = 1, and Completely Agree = 7), each of the four subscales are summarized in Table 4.17 (p. 192). These results were prepared for the total sample (*n*=69), as well for the male (*n*=11) and female (*n*=31) segments of that sample.

For the total sample, the largest Mean Item Rating was found for the Well-Being subscale (x = 5.48). The Mean Item Ratings for the remaining subscales were 4.88 or 4.81, which were .40 and .47 smaller than the Mean Item Rating for the Well-Being subscale. The Mean Item Rating for the four Auxiliary Items was 5.38, a review of the Mean Item Rating for each of these four items (Table 4.11, p. 164) indicates there was noticeably higher Mean Item Rating for two positively worded Auxiliary Items (i.e., 5.62 and 5.74). The descriptive results for male participants (*n*=11) and female participants (*n*=31) are similar to those for the total sample (i.e., there were minor differences in the magnitude of Mean Item Ratings). Mean Item Ratings for both male and female participants were highest on the Well-Being subscale (Male x = .539, and Female x = 5.51), and lowest on the Emotionality subscale (Male x = 4.64, and Female x = 4.87).

Results for Research Question 1c. Part c. of Research Question 1 is somewhat different than Parts a. and b., primarily because unlike the AAEIS and TEIQue-SF, the SRE is not a direct measure of EI. However, the SRE is designed to measure accumulated exposure to and experience of different types of racism on both a recent (R) and lifetime

Table 4.17

Results for the Total Sample on the TEIQue-SF (n=42)

	Males				Females				Total Sample			
	n	Min-Max[1]	x^2	SD	n	Min-Max[1]	x^2	SD	n	Min-Max[1]	x^2	SD
Total Score	11	107 - 179	147.36	27.86	31	96 - 199	152.77	25.69	42	96 - 199	151.35	26.04
Subscale Scores[3]												
Well-Being Subscale (6)	11	21 - 42	32.36	7.47	31	16 - 42	33.05	7.20	42	16 - 42	32.87	7.19
Mean Item Rating			5.39				5.51				5.48	
Self-Control Subscale (6)	11	17 - 37	28.64	5.61	31	14 - 39	29.48	5.95	42	14 - 39	29.26	5.81
Mean Item Rating			4.77				4.91				4.88	
Emotionality Subscale (8)	11	19 - 47	37.09	8.70	31	28 - 50	38.97	6.27	42	19 - 50	38.48	6.92
Mean Item Rating			4.64				4.87				4.81	
Sociability Subscale (6)	11	21 - 36	28.63	4.98	31	12 - 42	29.47	7.51	42	12 - 42	29.25	6.89
Mean Item Rating			4.77				4.91				4.88	
Auxiliary Items (4)	11	9 - 26	20.64	5.16	31	9 - 28	21.80	5.34	42	9 - 28	21.50	5.26
Mean Item Rating			5.16				5.45				5.38	

Notes. 1: Min-Max refers to the minimum (smallest) and maximum (largest) score on that set of items.
2: Mean (x) scores were calculated for the entire set of items, and were not adjusted for that number of items, as is sometimes done for ordinal scales.
3: Subscale scores include 26 of the 30 Items. Four items were not assigned to subscales (Auxiliary Items). The number in (parens) after each Subscale and after Auxiliary Items refers to the number of items in it. Mean Item Ratings were calculated by dividing each Subscale Score by the number of items in that subscale; this was done for Auxiliary Items for comparison purposes even though those four items do not serve as a Subscale.

(L) basis, as indicated in descriptive results presented in Table 4.12 (p. 169). These experiences could have had some influence on participants' emotions as well as upon their EI, so the relationship of the SRE R and L subscale scores to AAEIS subscales and to TEIQue-SF subscales were explored.

The results of the Spearman correlation analysis involving AAEIS scores and SRE-R and SRE-L subscale scores using the imputed data set (*n*=69) are summarized in Table 4.18 (p. 194). Overall, there were very weak correlations between the AAEIS total scores, scores for Items 1-15 (rating scale), and scores for Items 16-20 (multiple choice) and both the SRE-R or SRE-L subscale (i.e., all values ranged between - .115 and .042). To calculate Spearman correlation coefficients for the relationship of TEIQue-SF scale and subscale scores to SRE-R and SRE-L subscale scores, a new data set was prepared. The data set for Group B (*n*=42) was modified in light of missing SRE responses. First, five participants were removed reducing this size of the data set to *n*=37. Second, multiple imputation was used to fill in the smaller number of missing values for items in the SRE-R and SRE-L subscales. Spearman correlation coefficients were calculated using this imputed data set. The results of this analysis are summarized in Table 4.19 (p. 195).

The results in Table 4.18 (p. 194) are similar to those presented in Table 4.17 (p. 192) all of the correlations for TEIQue-SF Total Score, scores for any of the TEIQue-SF subscales, and the score for Auxiliary Items to SRE-R and SRE-L subscale scores were very weak; none were statistically significant. These correlation coefficients ranged from - .124 (Emotionality Subscale to SRE-R) to .125 (Sociability Subscale to SRE-L).

Table 4.18

Results of Spearman's Correlation Analyses for AAEIS and SRE Subscale Scores (n=69)[1]

AAEIS		SRE-R	SRE-L
Total Score	*r*	- .115	.027
	p	*.370*	*.834*
Score, Items 1-15	*r*	- .084	- .036
	p	*.505*	*.786*
Score, Items 16-20	*r*	- .080	.042
	p	*.520*	*.734*

Notes. *r* = Spearman's correlation value. 1. Imputed data were used for this analysis.
p = probability of that *r* value, with *n*=69. * = statistically significant at p < .05

when viewed as a whole, these results are very similar to those reported for the AAEIS – SRE relationships (Table 4.18).

Results for Research Question 2

Research question two is stated as follows: To what extent is Funderburks' (2007) measure of emotional intelligence, developed specifically for African-American populations, valid and reliable for African-American college students at a public state college in Central Florida?

Reliability of the AAEIS. Several analyses were conducted to determine the reliability of items within the AAEIS. First, a Cronbach's alpha analysis was conducted for all 20 items within the AAEIS. This analysis was conducted using the *n*=69 and *n*=61unimputed data sets, primarily because the option to analyze pooled data within these imputed data sets was not available in SPSS. The resulting alpha level for those items in the *n*=69 data set was .585, and for the n=61 data set was .595 These alpha values fall below the acceptable range of at least .70 suggested by Nunnally (1978).

Table 4.19

Results of Spearman's Correlation Analyses for TEIQue-SF and SRE Subscales (n=37)

TEIQue-SF		SRE-R	SRE-L
Total Score	*r*	- .109	- .029
	p	*.523*	*.864*
Well-Being Subscale	*r*	- .044	- .033
	p	*.798*	*.849*
Self-Control Subscale	*r*	- .075	- .027
	p	*.662*	*.874*
Emotionality Subscale	*r*	- .124	- .023
	p	*.469*	*.894*
Sociability Subscale	*r*	.060	.125
	p	*.727*	*.465*
Auxiliary Items	*r*	- .031	- .120
	p	*.858*	*.482*

Notes. *r* = Spearman's correlation value. 1. Imputed data were used for this analysis.
p = probability of that *r* value, with *n*=37. * = statistically significant at p < .05

In addition, to determine how these 20 items functioned within this scale and data set, Corrected Item-Total Correlations and Alpha-if-Item-Deleted analyses were conducted using the *n*=69 data set. The results of these analyses are summarized in Table 4.20 (p. 197). For the Corrected Item-Total analysis, one website offered the following interpretation: "If the alpha coefficient was LESS THAN .75 and there were items with a Corrected Item-Total Correlation of LESS THAN .30, then delete those items and rerun the Cronbach's alpha analysis" (https://www.scalestatistics.com/cronbachs-alpha.html). In this case, the alpha value was less than .75 (i.e., .585), and 16 of the 20 items in the AAEIS had Corrected Item-Total Correlation values less than .30 (i.e., each was below .26). These results call into question the reliability of AAEIS and its items.

For the Alpha-if-item-Deleted results in Table 4.20 (p. 197), five items had values which deviated more than 0.03 from the alpha value of 0.585 for the full scale. Only one item increased reliability when deleted: (Item 6) α = .629 (i.e., an increase of 0.044). The remaining four items decreased reliability when deleted by the following magnitude (in descending order): (Item 20) α= .106; (Item 17); α = .099; (Item 18); α = .071; and (Item 19) α= .063. In summary, only one item increased or decreased reliability by more than 0.1, and that was only by 0.106, so from an internal consistency perspective, items in the AAEIS did not appear to detract from this.

Validity of the AAEIS. The validity of the AAEIS was explored in two ways. The first involved a comparison of AAEIS and TEIQue-SF scores and subscale scores for the purpose of estimating the concurrent validity of the AAEIS. The second involved an exploratory factor analysis (EFA) of Items 1-15 in AAEIS for the purpose of estimating the construct validity of the AAEIS. The results of this factor analysis were presented for the purpose of describing the underlying factor structure of the AAEIS. In addition, these EFA results were compared to: (a) the dimensions of EI models which Funderburk consulted when constructing the AAEIS; and (b) the dimensions of EI which the External Panel identified (Table 3.2, p. 116).

Evidence pertaining to concurrent validity. One way of estimating or establishing the validity of a new measure of a psychological construct is to compare scores on that measure to scores obtained using a second, established and valid measure of that construct from the same sample (https://www.statology.org/concurrent-validity/).

Table 4.20

Results of Corrected Item – Total and Alpha-If-Item-Deleted Analyses for AAEIS Items (n=69)

Item	Corrected Item-Total Correlation Values	Alpha-If-Item Deleted[1] Values	Change
1	.032	.597	.012
2	- .048	.603	.018
3	.246	.566	- .019
4	.042	.593	.008
5	.090	.587	.002
6	- .211	.629	.044
7	- .048	.605	.020
8	.231	.568	- .017
9	.224	.570	- .015
10	.046	.587	.002
11	.195	.573	- .012
12	.049	.591	.006
13	.205	.572	- .013
14	.083	.588	.003
15	.259	.573	- .012
16	.213	.570	- .015
17	.584	.486	- .099
18	.481	.514	- .071
19	.461	.522	- .063
20	.584	.479	- .106

Note. 1: Change refers to the increase (+) or decrease (-) relative to alpha = .585.

This involves an analysis of the strength of the relationship between the scores on the established and new scales, in this case the TEIQue-SF and the AAEIS. Due to uncertainty about the manner and extent to which these two instruments measured the same or similar dimensions of EI, the strength of relationship was determine for scores on each full scale as well as for scores on the AAEIS to each of the TEIQue-SF subscales

(Table 4.21, p. 199). The best indicator of the concurrent validity of the AAEIS is the strength of its relationship between the TEIQue-SF: $r = .608$; $p < .000$ (Murphy & Davidshofer, 1998). Although there appear to be few sources which indicate either the minimum *r* value needed to support a claim of concurrent validity or a framework to indicate whether this *r* value should be considered weak, to be moderate in strength.

Further, the strength of the correlation between AAEIS Total Scores and scores on each of the TEIQue-SF subscales was stronger than $r = .525$ ($p < .000$), with the exception of the TEIQue-SF Self-Control subscale ($r = .287$, $p < .065$). This pattern was found for the relationship of AAEIS Items 1-15 to TEIQue-SF Total and Subscale scores, but not for AAEIS Items 16-20 and TEIQue-SF Total and Subscale scores.

The strength of the relationship between TEIQue-SF Total Scores and scores on each of the AAEIS subscales also was calculated. The strongest of these correlations was between scores on the TEIQue-SF and on the Relationship Management subscale ($r = .556$, p. < 000). The next strongest of these correlation values, all of which were statistically significant, were between TEIQue-SF Total scores and: the Self & Social Awareness subscale ($r = .399$, $p < .011$), the Self-Control subscale ($r = .372$, $p < .015$), and the Empathy subscale ($r = .328$, $p < .034$). The External Panel agreed that items in three of these four subscales reflected health/adaptive dimensions of EI (Table 3.2, p. 116); the exception to this were items in the Self-Control subscale (Table 3.2 and Table 3.3, p. 118). Of the two items in this subscale, all three External Panelists agreed that Item #13 reflected an unhealthy aspect of EI, and therefore should be considered negatively worded and reverse scored. However, Panelist #2 argued that the other item

Table 4.21

Correlations of AAEIS Scale and Subscale Scores to TEIQue-SF Scale and Subscale Scores as an Index of Criterion Validity (n=42)

		TEIQue-SF					
AAEIS		Total Score	Well-Being	Self-Control	Emotionality	Sociability	Auxiliary Items
Total Score	*r*	.608	.529	.287	.543	.528	.636
	p	.000**	.000**	.065	.000**	.000**	.000**
Items 1-15	*r*	.592	.528	.294	.512	.525	.596
	P	.000**	.000**	.059	.001*	.000**	.000**
Items 16-20	*r*	.185	.119	.176	.202	.027	.308
	P	.241	.455	.266	.199	.865	.047*
Subscales[1]							
Empathy (2)	*r*	.328	.341	.074	.326	.385	.252
	P	.034*	.027	.643	.035*	.012*	.107
Conflict Manage. (4)	*r*	- .013	- .092	- .080	.054	.027	.073
	P	.935	.561	.616	.736	.865	.647
Conflict Avoidance (3)	*r*	.242	.263	.016	.095	.244	.270
	P	.122	.093	.919	.548	.119	.083
Self-Control (2)	*r*	.372	.267	.246	.473	.231	.238
	P	.015*	.088	.116	.002**	.141	.130
Self & Social Aware. (2)	*r*	.390	.295	.341	.259	.278	.511
	p	.011*	.058	.027*	.097	.075	.001**
Relationship Manage. (2)	*r*	.556	.541	.331	.452	.550	.528
	P	.000**	.000**	.032*	.003*	.000**	.000**

Notes. 1 = The numbers in parentheses indicate the number of items in each AAEIS subscale.
* = statistically significant at p < .05; and ** = statistically significant at p < .01 (two-tailed).

the Self-Control subscale, Item #4, should be considered healthy/adaptive aspects of EI from an Afrocentric, but not a Eurocentric perspective (Table 3.4, p. 119). Lastly, the weakest relationship between TEIQue-SF Total Scores and AAEIS subscale scores were for the Conflict Management subscale ($r = -.013$, $p < .935$). Of the four items in this subscale, External Panelists agreed on the conceptual dimension and direction of three of them (i.e., Items 3, 10, and 15), all of which were negatively worded and reverse scored. Item #6 was the only positively worded item in this subscale, and although Panelists #1 and #2 agreed on this, Panelist #3 was "uncertain" (Table 3.2, p. 116).

On a more detailed and exploratory basis, a review of the correlation of AAEIS subscale scores to TEIQue-SF subscale scores indicates that the strongest correlations were for the AAEIS Relationship Management subscale, where four of the five correlation values were greater than $r = .450$ ($p < .003$); the exception to this pattern was for the correlation to the TEIQue Self Control Subscale ($r = .331$, $p < .032$). The next strongest correlations were found for the AAEIS Self & Social Awareness Subscale and TEIQue Auxiliary Items ($r = .511$, $p < .001$), the AAEIS Self-Control Subscale and the TEIQue Emotionality Subscale ($r = .473$, $p < .002$), and the AAEIS Empathy Subscale and the TEIQue Sociability Subscale ($r = .385$, $p < .012$). The weakest correlations were found between the AAEIS Conflict Management subscale and TEIQue-SF subscales, with values ranging between $r = .073$ (Auxiliary Items) and $r = -.092$ (Well-Being subscale). In general, these results suggest that the AAEIS Conflict Management subscale measures a dimension of EI not found in the design and structure of the TEIQue-SF.

Lastly, although one might anticipate or expect there to be a significant correlation between the AAEIS Self-Control subscale and TEIQue-SF Self-Control subscale, this correlation value was relatively weak (r = .246; p < .116).

However, of the six items in the TEIQue-SF Self-Control subscale, only two (i.e., Items #4 and #19) appear to be conceptually related to the two control-of-emotions items in the AAEIS subscale. Within each pair, there is one positively worded item (AAEIS: Item #4, and TEIQue: Item #19) and one negatively worded item (AAEIS:Item #13, and TEIQue: Item #4). The size of sample which completed both EI scales (n=42), the small number of control-of-emotions items in each subscale, and the change in the direction of wording in those items in each subscale makes it difficult to further analyze and interpret response patterns on these items with any clarity.

Evidence pertaining to construct validity. The second method used to explore the validity of the AAEIS involved the use of Exploratory Factor Analysis (EFA). These EFA analyses were conducted in SPSS using the n=69 unimputed data and Varimax rotation.

Results from the six-factor EFA. For the first EFA, a six-factor solution was used, because the External Panel identified six relatively distinct sets of items or subscales within the AAEIS (Table 3.2, p. 116). It was appropriate to test the extent to which Panelist comments and EFA results may coincide. Table 4.22 (p. 202) presents the overall results of this analysis. Of these six factors, five had Eigenvalues greater than 1, although the Eigenvalue for Factor 6 approached 1 (.959). The Cumulative Variance explained by the five factors with Eigenvalues greater than 1 was 57.43%, and for the full

Table 4.22

Overall Results of the Six-Factor Exploratory Factor Analysis for AAEIS Items 1-15 (n=69)

		Rotated Variance Explained	
Factor	Eigenvalue	Increment	Cumulative
1	2.656	16.708	16.708
2	2.130	12.233	28.941
3	1.630	11.499	40.440
4	1.248	9.001	49.441
5	1.182	7.986	57.427
6	.959	7.941	65.368

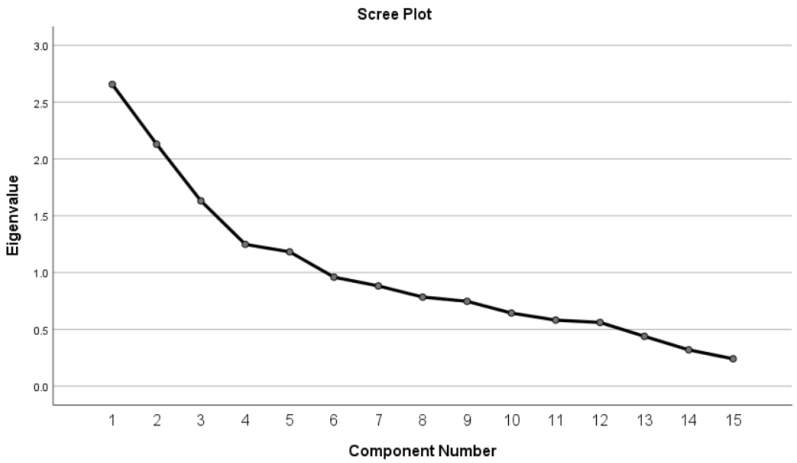


Figure 4.6. Scree plot for six-factor exploratory factor analysis of AAEIS Items 1-15.

six-factor model was 65.37%. The scree plot for this six-factor solution is presented in Figure 4.6 and indicates at least five relatively distinct factors. The results of the analysis of item loadings on these six factors are summarized in Table 4.23 (p. 203).

The comparison of the results of this six-factor EFA to the Conceptual Dimensions of the AAEIS identified by the External Panel yielded mixed results. The closest match between

Table 4.23

Selected Results of the Six-Factor Exploratory Factor Analysis Compared to Design Features of the AAEIS (n=69)

		Results from Exploratory Factor Analysis (6 Factors)[1]				Conceptual Dimensions (from Goleman, 1998; and External Panel) [1]	Degree of Match Between Items, Factor Loadings, and Conceptual Dimensions[2]
Item Information		Primary Loading		Additional Loading[4]			
Number	Wording[3]	Factor	Loading	Factor	Loading		
1	-	6	.941	3	.350	A. Social Awareness: Empathy	No Match: Separate Factors
11	+	4	.554	2	.543	A. Social Awareness: Empathy	
2	+	1	.843			B. Relationship Mgmt.: Conflict Avoid.	Partial Match: Factor 1: Items 2, 5, and partial match for Item 7
5	+	1	.773			B. Relationship Mgmt.: Conflict Avoid.	
7	-	3	.516	1	-.439	B. Relationship Mgmt.: Conflict Avoid.	
3	-	3	.567	1	.417	C. Relationship Mgmt.: Conflict Mgmt.	Partial Match: Factor 3: Items 3, 10, and 15 Factor 1: Items 6 (negative loading),partial match for Item 3 (negative wording)
6	+	1	-.580	5	-.376	C. Relationship Mgmt.: Conflict Mgmt.	
10	-	3	.723			C. Relationship Mgmt.: Conflict Mgmt.	
15	-	3	.679	2	.328	C. Relationship Mgmt.: Conflict Mgmt.	
4	+	1	.657			D. Self-Mgmt.: Self-Control	No Match: Separate Factors
13	-	6	.724	4	-.337	D. Self-Mgmt.: Self-Control	
8	-	2	.807			E. Self & Social Aware.: Self-Assessment	No Match: Separate Factors
12	-	5	.889			E. Self & Social Aware.: Self-Assessment	
9	+	4	.792			F. Relationship Mgmt.: Comm../Collab.	No Match: Separate Factors
14	+	2	.707			F. Relationship Mgmt.: Comm../Collab.	

Notes. 1. A six-factor solution was used because it represented the manner in which items were assigned to conceptual dimensions by the External Panel (Table 3.2, p. 116)

2. 'Degree of Match' indicates that at least two items within that subscale had primary and/or additional loadings on the same factor.

3. This reflects the manner in which items were assigned a positive/negative direction was determined by the External Panel (Table 3.2).

4. 'Additional Loading' was used an item had an additional factor loading greater than .30 on a factor other than the primary factor (e.g., Item 11 had a primary loading on Factor 4, and additional loading on Factor 2, greater than .30).

EFA results and Conceptual Dimension was found for the items in the Conflict Avoidance subscale: Items #2 and #5 loaded on Factor 1, and Item #7 had an additional loading on Factor 1. The next closest match was for items in the Conflict Management subscale: three of these four items loaded on Factor 3 (Items #3, 10, and 15), while Item #6 had a primary loading and Item #3 had a secondary loading on Factor 1. The remaining four Conceptual Dimensions and subscales contained two items, and none of those pairs of items loaded on the same factor. Thus, as is fairly common, the conceptual dimensions used to develop items and reflected in items, in this case the AAEIS, did not match very well to the underlying factor structure revealed by this EFA. Thus, the evidence in Table 4.23 (p. 203) does not sufficient to support the construct validity of the AAEIS, it does not rule out its construct validity. Given this, additional ways of analyzing and interpreting these EFA results must be considered.

For the items in the Conflict Avoidance and Conflict Management subscales (i.e., 7 of the 15 items in the AAEIS), an alternative analysis of these EFA results (Table 4.23) appears to offer a simpler and clearer interpretation. All positively worded items in these two subscales loaded on a single factor (Factor 1), and all negatively worded items in these two subscales also loaded on a single factor (Factor 3). Only one additional item loaded on Factor 1 (Item #4), and no additional items loaded on Factor 3. Even though Item #4 appears as is if may be conceptually related to negatively worded Conflict Avoidance items, External Panelists did not agree on whether Item #4 should be considered positively or negatively worded (Table 3.2, p. 116). Despite those mixed Panel responses, this item was treated as a positively worded item during data preparation

and analysis. Thus, its loading on Factor 1 with the other positively worded renders this consistent with an analysis and interpretation based on the direction of item wording.

A review of the EFA results for the pair of items in each of the other four AAEIS subscales serves as a further test of this analysis and interpretation (e.g., Was one item in each subscale negatively worded, and the other positively worded?). As indicated in Table 4.23 (p. 203), this pattern does hold for items in the Empathy and Self-Control subscales, but not for items in the Self & Social Awareness subscale, both of which are negatively worded, or for the Relationship Management subscale, both of which are positively worded (Table 4.23). However, a more careful analysis of the wording of the items in those two subscales (Table 4.10, p. 156) indicates that the items in each pair may reflect and therefore could measure different dimensions of EI.

Finally, of the eight items not included in the Conflict Avoidance and Conflict Management subscales, this analysis and interpretation appears to offer some understanding of the factor loadings for those items. The two items that load on Factor 6 were both negatively worded (Items 1 and 13), and the two items that loaded on Factor 4 were both positively worded (Items 9 and 11). Of the two items that loaded on Factor 2, one was positively worded (Item 14) and one was negatively worded (item 8). However, an analysis of the wording of these two items indicates that each may reflect and therefore could measure a related dimension of EI (i.e., from the perspective of Attribution Theory, Item 8 [negatively worded] may reflect an unhealthy or hostile attribution, while Item 14 [positively worded] may reflect a more healthy or realistic attribution (Harvey & Martinko, 2010).

In summary, the results of the six-factor EFA do not correspond to the conceptual dimensions and subscales of the AAEIS in a clear and coherent manner. However, the analysis and interpretation of EFA results for the AAEIS based on the direction of item wording is partially supported by the evidence in Table 4.23 (p. 203). However, it is important to note that each of these four AAEIS subscales consist of only two items, and this small number of items limits analyses and interpretations of the psychometric properties of these subscales and items.

Results from the five-factor EFA. When an EFA was conducted without predetermining the number of factors, the results are nearly identical to those reported for the six-factor solution (Table 4.22, p. 202, and Figure 4.6, p. 202). In this analysis, five factors with Eigenvalues greater than 1 emerged, and on a cumulative basis, they explained 57.42% of the variance or variability in participant responses on AAEIS Items 1-15. In light of these results, an EFA with a five-factor solution was conducted in an attempt to better understand the underlying factor structure of these AAEIS items (i.e., rather than test the extent to which this factor structure reflected the conceptual dimensions used to construct or subscales in the AAEIS) .

First, Table 4.24 (p. 207) presents the overall results of this analysis. Of these five factors, all had Eigenvalues greater than 1. The Cumulative Variance explained by these five factors was 58.97%, The scree plot for this five-factor solution is nearly identical to the scree plot for the six-factor solution (Figure 4.6, p. 202).

The results of the analysis of item loadings on these five factors are summarized in Table 4.25 (p. 208). An inductive approach was used to help determine how items with

Table 4.24

Overall Results of the Five-Factor Exploratory Factor Analysis for AAEIS Items 1-15 (n=69)

		Rotated Variance Explained	
Factor	Eigenvalue	Increment	Cumulative
1	2.656	16.803	16.803
2	2.130	12.489	29.292
3	1.630	12.137	41.429
4	1.248	9.324	50.753
5	1.182	8.221	58.974

primary and additional loadings on each factor might be related to each other (i.e., what those items might have in common). Six items had factor loadings greater than .3 on Factor 1. Of these, Items 2, 4, and 5 loaded only on Factor 1 (i.e., each with a loading greater than 0.625), while Items 6 and 7 had a primary but negative loading on this factor, and Item 3 had an additional loading on this factor. Three attributes of these items appeared to be relevant to these items. First, all six items appear to reflect a direct or indirect (inferred) experience of what might be termed negative emotions: (Item 2) someone being rude to them; (Item 4) when I am mad; (Item 5) if I feel bad; (Item 6) when someone argues or fights with them; (Item 7) when someone is bothering me; and (Item 3) when someone is getting on my nerves. Second, four of these six items stated or implied the presence of one or more people who were in conflict with the subject in that item (e.g., Item 2: being rude to; Item 3: messing with; Item 6: fighting with; Item 7: bothering). In addition, Item 5 implies this by referring to the need to defend themselves. Only Item 4 does not state or imply this. Third, each of these six items appeared to reflect

Table 4.25

Summary of Factor Loadings from the Rotated Matrix for the Five-Factor Solution[1]

	Loadings, by Factors				
Item	1	2	3	4	5
1				.484	.617
2+	.804				
3-	.391	.617			
4-	.627				
5-	.792				
6+	- .590	-.369			
7-	- .497	.401	-.321		
8			.818		
9				.741	
10		.738			
11			.519	.578	
12		.430			-.424
13					.674
14			.689		
15		.626	.358		

Note. 1. This summary includes only factor loadings > .3.

either of two modes of response to those people and emotions: (a) conflict avoidance (Items 2, 4, 5, and 7); or (b) conflict engagement (3 and 6). It would be relatively simple if all items in (a) had been scored in one direction, and in (b) had been scored in the other direction. However, on the basis of External Panel responses (Table 3.2, p. 116), the item scoring for these items was as follows: positively worded and scored = Items 2, 4, 5, and 6; and negatively worded and scored = Items 3 and 7. Thus, although Item 7 reflected conflict avoidance, the negative loading for this item suggests that it was mis-scored (i.e., it should have been positively scored like Items 2, 4, and 5). Similarly, although Item 3

reflects conflict engagement, the negative loading for this item suggests that also was mis-scored (i.e., it should have been negatively scored like Item 7). These factor analysis results and this more detailed analysis of them suggest that all six of these items could belong in one subscale. However, this would be appropriate only if (a) all conflict avoidance items and (b) all conflict engagement items were be scored in opposite directions and in a manner which reflects *Conflict Avoidance* as the underlying factor apparent in Factor 1. It is noteworthy that these items contributed to the greatest confusion and disagreement among members of the External Panel (Table 3.2, p. 116; Table 3.3, p. 118), including perspectives on the role of racio-ethnic and situation-specific conditions regarding what can or should be considered healthy/adaptive vs. unhealthy emotional responses (Table 4.34, p. 119).

Six items had factor loadings greater than 0.3 on Factor 2 (Table 4.25, p. 208). Of these, Item 10 loaded only on Factor 2, while Items 3, 12, and 15 had a primary positive loading on this factor. Further, Item 7 had an additional positive loading and Item 6 had an additional negative loading on this factor. Three attributes of these items appeared to be relevant to these items. First, four of the six items appear to reflect a direct or indirect (inferred) experience of what might be termed negative emotions: (Item 3) someone is messing with me; (Item 6) another person starts a fight with me; (Item 7) someone is bothering me; and (Item 10) I don't like someone. Second, five of these six items stated the presence of another people who was in conflict with the subject in that item (e.g., Item 3, 10, and 12: someone; Item 6: another person; Item 7: somebody). However, Item 15 does not indicate how many others may be involved. Third, five of these six items

appeared to reflect one of two modes of response to those people and emotions: (a) conflict engagement (Items 3, 6, 10, and 15); and (b) conflict avoidance (Item 7). Item 12 does not appear to reflect either; rather, as pointed out by External Panel members, it reflects a faulty assessment of others (i.e., a so-called snap judgement).

On the basis of External Panel responses (Table 3.2, p. 116), the item scoring for these items was as follows: healthy/adaptive and positively worded/scored = Item 6; and unhealthy and negatively worded/reverse scored = Items 3, 7, 10, 12, and 15. The results of this EFA are reasonably clear as to why three of these items loaded on the same factor (Items 3, 10, and 15). The primary loading for each was on Factor 2, and each loading was greater than 0.6. All three emphasized conflict engagement, and an aggressive response to conflict. Members of the External Panel agreed that all three of items reflected unhealthy aspects of EI and should be reverse scored.

The strength and direction of the loading on Items 6, 7, and 12 (Table 4.25, p. 208), along with their wording and scoring, were a bit less clear, so each required further analysis. Of these, Items 6 and 7 also had primary and negative loadings on Factor 1. Like Items 3, 10, and 15, Item 6 was identified by External Panel members as a Conflict Management (or conflict engagement) item. Further, Item 6 appears to reflect the same attributes as the three items discussed above. However, Panel members did not agree on the direction and scoring of Item 6, although two agreed that it should be positively scored (Table 3.2, p. 116), so it was scored that way. This scoring appears to be reflected in and may account for the negative loading of Item 6 on Factor 2 (i.e., as discussed in the analysis and interpretation for Factor 1), and suggests that Item 6 should have been

reverse scored. Item 7 was identified by Panel Members as a Conflict Avoidance item (Table 3.2 p. 116). However, Panel members did not agree on the direction and scoring of Item 7, although two agreed that it should be negatively scored (Table 3.2), so it was scored that way. This scoring appears to be reflected in and may account for the positive loading of Item 7 on Factor 2 (i.e., if it been positively scored, this item may have had a negative loading on Factor 2). Thus, the results summarized in Table 4.25 (p. 208) may be seen as clarifying not only the underlying dimension of EI reflected in Items 6 and 7, but also improving upon the manner in which these items should be viewed and scored. The remaining item which loaded on Factor 2 was Item 12. Panel members agreed this was unhealthy from an EI perspective, and therefore this item should be reverse scored. On these characteristics, the loading of Item 12 on Factor 2 appears to be consistent with that of the other five items (i.e., taking into account the explanation for Items 6 and 7, above). However, Item 12 was the only item not to reflect either (a) conflict engagement, or (b) conflict avoidance. Rather, as noted above, Item 12 reflects a faulty assessment of others: "Before I get to know them, I can tell what kind of person they are going to be." Thus, this item does not reflect or imply conflict with another, and appears to be less related, if not unrelated conceptually, to the other five items which load on Factor 2.

In summary, EFA results in Table 4.25 indicate that (a) all self-control and conflict avoidance items and (b) all conflict engagement items should be scored in opposite directions and in a manner which reflects *Self-Control and Conflict Engagement* as the emphasis of Factor 2. As noted for Factor 1, Items 6 and 7 contributed to the greatest confusion and disagreement among members of the External Panel (Table 3.2, p.

116; Table 3.3, p. 118), including perspectives on the role of racio-ethnic and situation-specific conditions regarding what can or should be considered healthy/adaptive vs. unhealthy emotional responses.

In light of the analyses of items with loadings on Factors 1 and 2, it became apparent that these factors were related, and that there was a simpler interpretation of these items and factors. Specifically, it was apparent that the four self-control and conflict avoidance items loaded on Factor 1: Items 2 and 7 reflected feeling better about avoiding conflict with another (normal scoring), while Items 4 and 5 reflected feeling worse when avoiding conflict (reverse scoring).

Further, all five conflict engagement items loaded on Factor 2. In this simpler interpretation, supported by item wording, factor loadings, and scoring, only the four items with loadings on Factor 1 which reflected self-control and conflict avoidance would be retained for Factor 1, and serve as a four-item subscale for Factor 1 (i.e., thereby dropping Items 3 and 6, which loaded on Factor 2). Further, only the five items with loadings on Factor 2 which reflected conflict engagement as the underlying dimension for that factor would be retained, and serve as a five-item subscale aligned with Factor 2 (i.e., thereby dropping Item 7, which loaded on Factor 1). The results of this inductive analysis of Factors 1 and 2, including a summary of this simpler interpretation, are presented in Table 4.26 (p. 214).

Five items had factor loadings greater than 0.3 on Factor 3 (Table 4.25, p. 208). Of these, Items 8 and 14, loaded only on Factor 3 (i.e., each with a loading greater than 0.685). For the other items, Item 11 and 15 had an additional positive loading on this

Table 4.26

Summary of EFA Results for AAEIS Items 1-15 Using a Five-Factor Solution (n=69)

Factor Information		Item Loading Information		Item Scaling Information		Item Scoring Information		Comments/Explanation
Factor	Underlying Factor	Items with Loadings[1]	Loading[2]	Retained for This Factor		Final Direction of Wording/Scoring[3]		
				Yes	No	Normal	Reverse	
1	Self-Control and	2	.804*	x		X		
	Conflict Avoidance	5	.792*	x			x	
		4	.627*	x			x	
		6	-.590*		x			remove from Factor 1
		7	-.497*	x		X		retain for Factor 1; change direction of scoring
		3	.391		x		x	remove from Factor 1
2	Conflict Engagement	10	.738*	x			x	retain for Factor 2
		15	.626*	x			x	retain for Factor 2
		3	.617*	x			x	retain for Factor 2
		12	.430*	x			x	retain for Factor 2
		7	.401		x	X		remove from Factor 2
		6	-.369	x			x	retain for Factor 2; change direction of scoring
3	Willingness to	8	.818*	x			x	
	Understand Others	14	.689*	x		X		
		11	.519	x		X		retain for Factors 3 & 4
		15	.358		x		x	remove from Factor 3
		7	-.321		x			remove from Factor 3: weakest factor loading
4	Willingness to be	9	.741*	x		X		
	Responsive to Others	11	.578*	x		X		retain for Factors 3 & 4
		1	.484	x			x	retain for Factors 4 & 5
5	Loss of Self-Control	13	.674*	x			x	
		1	.617*	x			x	retain for Factors 4 & 5
		12	-.424		x		x	remove from Factor 5: not consistent with Items 1 & 13

Notes. 1. All items with a factor loading equal to or greater than +/- 0.30 are listed, but in descending order based on the magnitude of those loading.
2. Each loading reflects the direction and scoring of this item as presented in Table 3.2 (p. 116). * indicates Items with a sole or primary loading on that factor.3. The Final Wording/Direction reflects: (Positive) healthy/adaptive aspects of EI; and (Negative) unhealthy aspects of EI. However, this is somewhat unclear for Factors 1 & 2 due to differences in Panelist ratings and presented in Table 3.2 (p. 116), Table 3.3 (p. 118), and Table 3.4 (p. 119).

factor, while Item 7 had the only negative loading on this factor. Two attributes of these items appeared to be relevant to this analysis. First, four of these five items stated the presence of one or more people (e.g., Item 7: somebody; Item 8: two people; Items 11 and 14: someone). The remaining item, Item 15, implied this (i.e., when I see a fight). Second, two items reflect a willingness to understand what others may be thinking and/or feeling. Items that reflect this were Items 11 (consider someone's point of view) and 14 (ask someone about this), both of which Panel members agreed reflected healthy/adaptive aspects of EI and therefore which were positively scored (Table 3.2, p. 116).

The remaining items do not reflect this willingness: Item 8 (project what others are thinking), Item 15 (support a fight), and Item 7 (avoid the situation). Panel members agreed that these three items reflected unhealthy aspects of EI and therefore which were reverse scored (Table 3.2).

In summary, EFA results in Table 4.25 (p. 208) indicate that (a) three items focused on one's willingness to understand what others are thinking/feeling (Items 8, 11, and 14)and (b) two did not (Items 7 and 15). The items in (a) should be scored in a manner which reflects a *Willingness to Understand Others* as the emphasis of Factor 3. Of the two items that did not focus on one's willingness to understand others, Item 7 had stronger loadings on Factor 1 (Conflict Avoidance) and Factor 2 (Conflict Engagement). The loading of Item 7 on Factor 3 was the weakest of these three loadings and the weakest of all five item loadings on Factor 3 (Table 4.25, p. 208). Similarly, Item 15 had a stronger loading on Factor 2, and was the next weakest of the item loadings on Factor 2 (Table 4.25). Thus, only the three items with loadings on Factor 3 that reflected a

willingness to understand as the underlying dimension for this factor would be retained, and serve as a three-item subscale aligned with Factor 3 (i.e., dropping Items 7 and 15). The results of the inductive analysis of Factor 3, taking into consideration the results for Factors 1 and 2, are presented in Table 4.26 (p. 213). Three items had factor loadings greater than 0.3 on Factor 4 (Table 4.25, p. 208). Of these, Item 9 was the only item which loaded solely on Factor 4 (loading = 0.741), the primary loading for Item 11 was on this factor (loading = 0.578), and Item 1 had additional positive loading on this factor (i.e., Item 11 also loaded on Factor 3, and Item 1 also loaded on Factor 5). Panel members agreed on the direction and scoring of these items: positively worded and scored = Items 9 and 11; and negatively worded and scored = Item 1. In addition, two of these items constituted the Empathy subscale: Items 1 and 11 (Table 3.2, p. 116). Three attributes of these items appeared to be relevant to this analysis. First, all three items stated the presence of another person (i.e., other person or someone). Second, two of these items stated some form of problem (Item 9) or disagreement (Item 11); this was less apparent in Item 1 (spreading rumors). Third, two of these items focused on a willingness to be responsive to another person's thoughts and feelings (Items 9: willing for both to get some of what they want; and Item 11: willing to look at a situation from another's point of view). Item 1, which was negatively worded and reverse scored, was indicative of someone who was not willing to be responsive of another person's thoughts and feelings. In summary, EFA results in Table 4.25 (p. 208) indicate that (a) two items focused on one's willingness to be responsive to what others were thinking/feeling, and

(b) one did not, so these items should be scored in opposite directions and in a manner which reflects *Willingness to be Responsive to Others* as the emphasis of Factor 4.

The relationship between Factor 4 and Factor 3 is apparent in that items in both factors pertained to taking the thinking and feeling of another into consideration. However, the apparent difference between these two factors is subtle: the items which loaded on Factor 3 appear to emphasize a person's willingness to understand another person's thinking and feeling, while the items which loaded on Factor 4 went beyond this to include their willingness to be responsive to another's thinking and feeling (e.g., Item 9: work together to solve a problem; Item 1: avoid spreading rumors). Item 11 appears to reflect aspects of both a willingness to understand and to be responsive, so it not surprising that it loaded on both of these factors (Table 4.26, p. 213). For the final factor, three items had factor loadings greater than 0.3 on Factor 5 (Table 4.25, p. 208). Of these, Item 13 was the only item which loaded solely on Factor 5 (loading = 0.674), the primary loading for Item 1 was on this factor (loading = 0.617), and Item 12 had additional negative loading on this factor (i.e., Item 1 also loaded on Factor 4, and Item 12 also loaded on Factor 2). Panel members agreed on the direction and scoring of these items: all were negatively worded and reverse scored. Three attributes of these items appeared to be relevant to this analysis. First, Item 1 and 12 stated the presence of another person (i.e., someone). Item 12 did not, although this may or may not be implied (e.g., they may or may not have gotten angry at someone else). Second, two of these three items appear to reflect a loss of control over one's feelings and/or thinking: (Item 13) get angry quickly; and (Item 1) [acting] before I stop and think about it. This is not apparent in Item

12 (i.e., before I get to know someone). Third, two of these items suggest that a loss of control over one's feelings and/or thoughts can lead one to act impulsively: (Item 13) do something crazy; and (Item 1) spread a rumor. As with the first two attributes, this is not apparent in Item 12, which had the weakest factor loading on Factor 5 (loading = -0.424). Rather, Item 12 focuses on knowing what someone else may be like before getting to know them (i.e., faulty assessments or attributions that may imply some lack of mental control, but not any impulsive action). In light of these differences between Item 12 and the other two items which loaded on Factor 5, at best it is unclear how Item 12 fits this factor, and at worst Item 12 does not fit this factor (e.g., it is an artifact of forcing all 15 AAEIS items into a 5-factor solution). In summary, EFA results in Table 4.25 (p. 208) indicate that Items 1 and 13 focused on some loss of control over one's feelings and/or thinking which contributed to some kind of impulsive act, which reflects *Loss of Self Control* as the emphasis of Factor 5. Item 1 appears to reflect aspects of both a willingness to be responsive (Factor 4) and a loss of self-control (Factor 5), so it not surprising that it loaded on both of these factors (Table 4.26, p. 213).

Overall, the results of this five-factor EFA for AAEIS provided reasonable clarity about the dimensions of EI which underlie these 15 items (Table 4.26). The two factors with the largest eigenvalues, the greatest percent of explained variance, and the largest number of items were Factors 1 and 2. These two factors featured two very different responses to situations involving conflict: (Factor 1) Self-Control and Conflict Avoidance; and (Factor 2) Conflict Engagement. A simpler approach to the retention of items for each of these factors involved: (a) assigning items which loaded on Factor 1 and

which featured wording that reflected conflict engagement (Items 3 and 6) to the subscale for Factor 2; and (b) assigning the item which loaded on Factor 2 and which featured wording that reflected self-control and conflict avoidance (Item 7) to the subscale for Factor 1 (Table 4.26, p. 213).

The factors with the next largest eigenvalues, percent of explained variance, and number of items were Factors 3 and 4. As in the results for Factors 1 and 2, there was some overlap in the item(s) which loaded on these two factors: Item 11 loaded on Factors 3 and 4. However, the difference between Factor 3 and Factor 4 seemed to be more subtle and one of degree: (Factor 3) a willingness to understand the perspective (thinking and feelings) of others; and (Factor 4) a willingness to move beyond understanding (an internal process) and be actively responsive to their perspective (an observable process). After removal of Item 7, Factor 3 consisted of three items, and Factor 4 three items, although Item 11 loaded on and was associated with both factors.

The last of the factors in this analysis was Factor 5, and three negatively worded items loaded on this factor. However, only Items 1 and 13 appeared to feature both a loss of control of thinking/feeling and involvement in impulsive actions. Item 12 did not reflect either of these attributes, but did load more strongly on Factor 2, so it was assigned to the subscale associated with Factor 2.

As a whole, four of these five factors focused on self-in-relationship. Factors 1 and 2 focused on self-in-relationship to others in situations involving conflict. Although the relative scoring of items associated with each of these two factors is clear, which factors can or should be considered healthy vs. unhealthy dimensions of EI is less clear as

was pointed out by Panel members (Table 3.2, p. 116). For example, Panelist 2 suggested that Self-Control and Conflict Avoidance (e.g., which may be adaptive for disempowered, marginalized group members) and Conflict Engagement (e.g., when defending one's self does not imply lack of self-control) may be, at least in part, racio-ethnic and situation specific (Table 3.3, p., 118). Factors 3 and 4 appear to focus on self-in-relationship to others in what Panel members considered to be healthy from an EI perspective (i.e. Willingness to Understand and to be Responsive to Others). Only Factor 5 did not appear to focus primarily on self-in-relationship; rather it appeared to focus on one's control and loss of control of their thinking, feeling, and/or acting (i.e., more of a focus on self). These appear to capture the dimensions of the EI construct that underlie and that are reflected in AAEIS Items 1-15, and provide evidence of construct validity for an instrument designed to measure those dimensions.

Preliminary Analyses and Additional Data Preparation for Research Question 3

Two data sets were prepared for Research Question 3: (a) this first had an *n*=69, and included seven independent variables (i.e., none of the subscales from the SRE); and (b) the second had an *n*=61, and included nine independent variables (i.e., the R and L subscales in the SRE). Although multiple imputation was used to fill in missing data points in each of these data sets, those imputed data sets could not be used in SPSS analyses for Research Question 3, so unimputed data sets were used in these analyses. Multiple regression was selected as the data analysis strategy for Research Question 3. To ensure that the *n*=69 and *n*=61 data sets were ready for this kind of data analysis, a number of steps had to be taken. Two of these involved analyses pertaining to the

presence of outliers and multicollinearity. In addition, a number of regression assumptions had to be checked: correct specification of the independent and dependent variables; correct specification of the independent variable in the regression model; reliable measurement of independent variables; constant variances of the residuals (homoscedasticity); independence of residuals; normality of residuals (Cohen et al., 2003).

Outlier analysis. In general, there are three types of outlier analysis: univariate, bivariate, and multivariate. These analyses are used to determine if there appear to be any extreme and/or influential values within a data set. Using the full data set (*n*=70), the results of univariate outlier analyses were reported for the two measures of EI in this study, the AAEIS (Figure 4.2, p. 145) and TEIQue-SF (Figure 4.4, p. 146). For the AAEIS, there appeared to be three outliers, and for the TEIQue, none. Again, using the full data set, the statistical results of a bivariate outlier analysis of AAEIS and TEIQue-SF scores indicated that there were no bivariate outliers (Table 4.5, p. 147), although a review of the scatterplot for these scores indicated that there may be several (Figure 4.5, p. 147). Finally, multivariate outlier analysis was conducted both the *n*=69 and *n*=61 data sets, and two outliers were found in the former (Table 4.6, p. 149), and three in the latter (Table 4.8, p. 151). In light of these results for the AAEIS, a further review of the three apparent AAEIS outliers was carried out, and none were found to be unusual or inappropriate for the study sample (Table 4.7, p. 149). In addition, SPSS' Regression Analysis was used to run a case-wise diagnostic analysis for each data set. The output of this analysis for the *n*=69 data set and for the n=61 data set, for AAEIS Total scores as

the dependent variable and the selected independent variables, did not include a table of results, which indicates that none of the standard residual values were greater than + / - 3.0. The results of these analyses indicated that these data sets did not contain any outliers which needed to be removed.

Multicollinearity. This occurs when two or more independent variables are highly correlated with each other. This leads to problems with understanding which independent variable contributes to the variance explained in the dependent variable, as well as technical issues in analyzing, as well as reporting and interpreting results for, a multiple regression model (https://statistics.laerd.com/spss-tutorials/multiple-regression-using-spss-statistics.php). According to Cohen et al. (2003), VIF values are used as indicators of multicollinearity, with VIF values greater than 10 indicating the presence of multicollinearity. Thus, smaller VIF values serve as an indicator of the absence of multicollinearity. Two VIF analyses were conducted, one for the *n*=69 unimputed data set, and the second the *n*=61 unimputed data set. The results from the former analysis are summarized in Table 4.27 (p. 222). None of those VIF values were greater than 2, so there was no threat due to multicollinearity in the *n*=69 data set. The results from the latter analysis are summarized in Table 4.28 (p. 222). None of those VIF values were greater than 4.7, so there also was no threat due to multicollinearity in the *n*=61 data set.

Correct specification of the dependent variable and independent variables. In general, the correct specification of a regression model is a fundamentally important step in any regression analysis. Two of the more common problems associated with this step involve: (a) the inclusion of one or more independent variables (IVs) that are irrelevant

Table 4.27

Results of Multicollinearity Analysis with AAEIS Total Scores as the Dependent Variable, n=69

	Collinearity Statistics	
Independent Variables	Tolerance	VIF
Age	.824	1.21
Gender	.860	1.16
Number of Terms Completed	.836	1.20
Student Engagement	.853	1.17
Mother's Highest Level of Education	.698	1.43
Father's Highest Level of Education	.700	1.43
Familial SES	.696	1.44

Table 4.28

Results of Multicollinearity Analysis with AAEIS Total Scores as the Dependent Variable, n=61

	Collinearity Statistics	
Independent Variables	Tolerance	VIF
Age	.628	1.59
Gender	.820	1.22
Number of Terms Completed	.468	2.13
Student Engagement	.723	1.38
Mother's Highest Level of Education	.576	1.73
Father's Highest Level of Education	.562	1.78
Familial SES	.509	1.965
SRE - Recent	.309	3.23
SRE - Lifetime	.216	4.62

from the perspective of theory and/or prior research; and (b) the exclusion of one or more IVs that are relevant from either perspective (Allen, 1997).

This study focuses on: (a) psychometric properties of the AAEIS as the only measure of EI designed for use with African-American adolescents, as well as (b) the use of the AAEIS and TEIQue-SF to shed light on EI and related characteristics of the

accessible population in this study, African-American college students. Unfortunately, as discussed in Chapter 2, the theoretical framework used to design and validate the AAEIS was not well described. Further, the AAEIS had been used in only one previous study (Funderburk, 2007). Finally, only about 12 studies of EI and related characteristics pertinent to this accessible population were found in an in-depth review of the literature. Thus, the information that could be derived from prior theory and research that may have been relevant to this study was limited. This has implications for this regression assumption in that although extensive efforts were made to conduct a wider review of theory and of research relevant to EI, there was limited guidance for this study to be found in the literature. Although features of EI theories and prior research studies were included in the design of this study (e.g., age, gender, parental education and SES), this was primarily an early exploratory study. In studies of this kind, it is difficult, if not impossible, to determine whether either of the model specification problems posed by Allen (1997) are apparent in this study. Thus, for the purposes of this study, this assumption may be considered either irrelevant or met.

Reliable measurement of dependent and independent variables. Reliability refers to the consistency of measures. In this study, all variables were measured once, so internal consistency is the only type of reliability that can be estimated (i.e., estimates of stability and equivalence were not possible). However, internal consistency can be estimated only when there are two or more items in the scale used to measure a particular variable, and cannot be estimated for variables measured using only a single item.

For Research Question 3, the *n*=69 and *n*=61 data sets contain two single-item, nominal IVs (Gender, and Student Engagement). There is no procedure for estimating the internal consistency of these measures, so no reliability estimates can be reported. Further, these data sets contained an ordinal dependent measure (AAEIS), and several ordinal IVs (Mother's and Father's Level of Education, Familial SES, and SRE-R and SRE-L scores). However, of these, Mother's and Father's Level of Education, and Familial SES also were single-item measures, so there is no way to estimate the internal consistency of any of those measures. Internal consistency could be estimated only for the remaining three multi-item ordinal measures. However, SPSS does not include procedures for calculating Cohen's weighted kappa, a common test of reliability for multi-item ordinal measures (https://www.ibm.com/support/pages/does-spss-provide-internal-consistency-measure-ordinal-variables). In the absence of this, Cronbach's alpha was used to estimate the reliability of these three ordinal measures. Those results were as follows: for the SRE-R, alpha = .920; and for the SRE-L, alpha = .944; both values fall toward the high end of the acceptable range. Finally, these data sets also contain two interval independent variables (Age, and Number of Semesters). However, both of these were single-item measures so, as above, reliability could be not be estimated for them.

Cronbach's alpha was used to estimate the internal consistency of responses on the AAEIS, and on the SRE-R and SRE-L subscales. The Cronbach's alpha value for the 20-item AAEIS using the *n*=69 data set was .585., and for the *n*=61 data set was .595. These alpha values fall below the acceptable range of at least .70 suggested by Nunnally

(1978). In light of these Cronbach's alpha values, the AAEIS is not as reliable as it could or should be, and this represents a study limitation to be discussed in Chapter 5.

Linear relationship between independent and dependent variables. There are two aspects of this assumption: (a) the relationship of the entire set of IVs to the dependent variable; and (b) the relationship of each IV to this dependent variable (https://www.youtube.com/ watch?v=BioR3Ovk3PU). The former can be examined using a plot of observed versus predicted residuals, while the latter requires the review of a plot for each bivariate relationship. The latter can be a plot of observed versus predicted values (e.g., P-P plots), or a plot of residual versus predicted values (i.e., a scatterplot).

For (a) the regression analysis of the relationship of the DV, AAEIS Total Scores, to the set of IVs was conducted twice. The first analysis was run using the *n*=69 data set, and included seven IVs as predictors of AAEIS Total Scores. As SPSS was unable to run this analysis using pooled data from multiple imputation, a decision was made to have SPSS insert sample mean values for any missing responses. This was done to avoid the elimination of cases with one or more missing values, which would have decreased the sample in this analysis from 69 to 34 (i.e., nearly a 50% reduction in sample size). The scatterplot plot generated by this analysis is presented in Figure 4.7 (p. 226). This scatterplot indicated that there was no systematic patterning to the relationship between these residual and predicted values.

The second analysis was run using the *n*=61 data set, and included nine IVs as predictors of AAEIS Total Scores. As with the previous analysis, SPSS insert sample mean values for any missing responses.

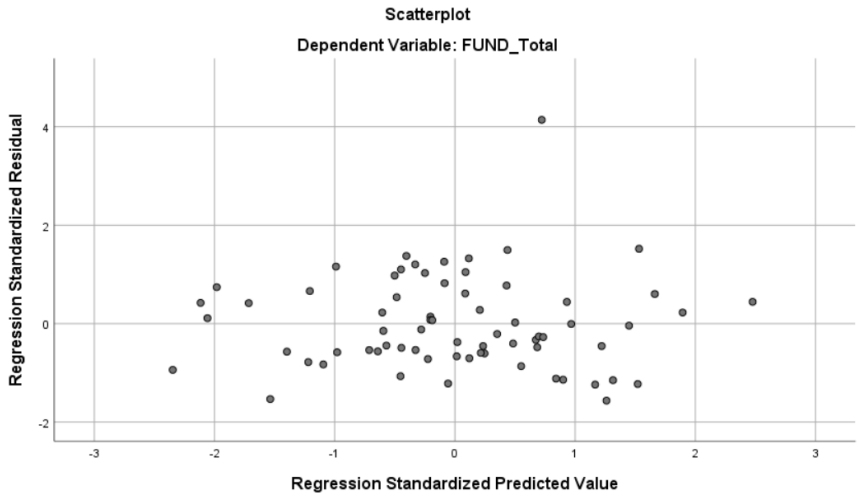


*Figure 4.7***.** Scatterplot of residual versus predicted values from the linear regression analysis of the relationship between seven IVs and AAEIS Total Scores as the DV (*n*=69).

The scatterplot generated by this analysis is presented in Figure 4.8. This plot also indicated that there was no systematic patterning to the relationship between these residual and predicted values. On the basis of these analysis and scatterplots, the linearity assumption was met.

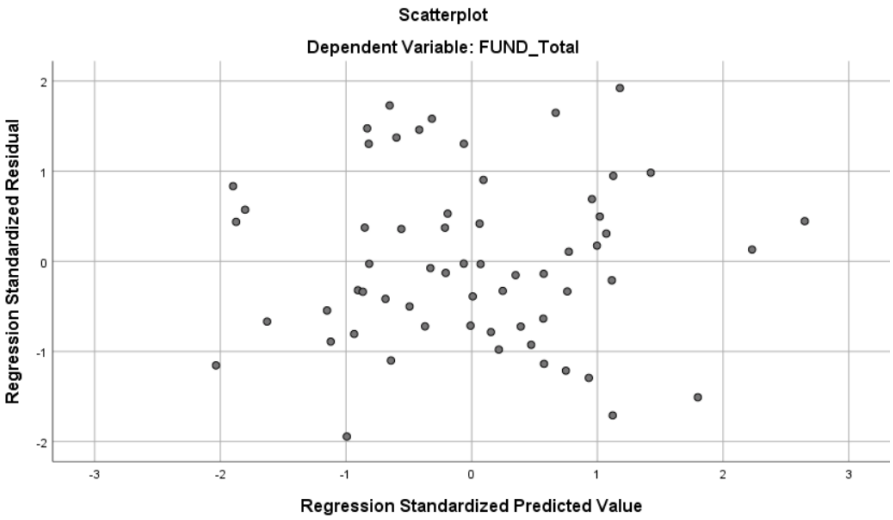


Figure 4.8. Scatterplot of residual versus predicted values from the linear regression analysis of the relationship between nine IVs and AAEIS Total Scores as the DV (*n*=61).

Normality of residuals. This analysis is used to determine whether the residuals in a regression model are normally or nearly normally distributed. This is one of the main assumptions in linear regression analysis, because if the residuals are not normally distributed, then model inferences may be invalid (i.e., model predictions and confidence intervals). There are multiple ways to test for this (https://www.codingprof.com/5-ways-to-check-the-normality-of-residuals-in-r-examples/), including the use of histograms, as well as Kolmogorov-Smirnnov and Shapiro-Wilk tests.

Of these, the SPSS linear regression option was used to generate a histogram of the residual by predicted values for the *n*=69 data set with seven IVs and AAEIS Total Scores as the DV. In this analysis, the option of filling in missing values with the sample mean was used. The results of this analysis are presented in Figure 4.9 (p. 228). The distribution presented in this figure indicates that these residuals were nearly normally distributed, with the exception of what appears to be one extreme value. These visual results are supported by the results of univariate Kolmogorov-Smirnnov and Shapiro-Wilk tests of normality of AAEIS Total Scores for the *n*=69 data set (Table 4.29, p. 228).

The SPSS linear regression option also was used to generate a histogram of the residual by predicted values for the *n*=61 data set. The option of filling in missing values with the sample mean was used. These results are presented in Figure 4.10 (p. 229). The distribution in this figure indicates these residuals are nearly normally distributed. These visual results are supported by results of univariate Kolmogorov-Smirnnov and Shapiro-Wilk tests of normality of AAEIS Total Scores for the *n*=61 data set (Table 4.29). Overall, the results of these analyses indicate that the Normality assumption was met.

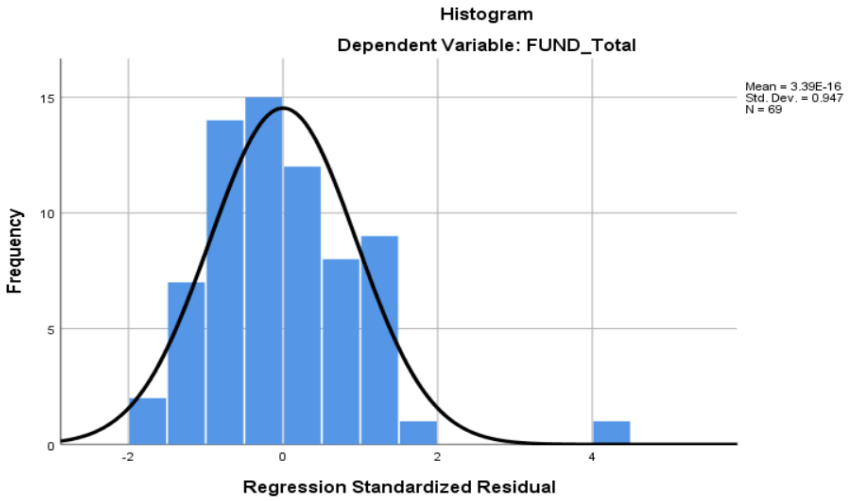


Figure 4.9. Histogram depicting the distribution of residuals for the *n*=69 data set.

Table 4.29

Results of Univariate Tests of Normality of AAEIS Data (Funderburk, 2007), n=69 and n=61

		Kolmogorov-Smirnov (K-S)			Shapiro-Wilk (S-W)		
Measure	*n*	Statistic	Df	Sig.	Statistic	df	Sig.
AAEIS	69	.131	62	.01*	.920	62	.001*
AAEIS	61	.125	56	.03*	.970	56	.181

Notes. In the K-S test, if the null hypothesis is true, the statistical result wil be small (i.e., the percent of cases deviating from a normal distribution is small). In the S-W test, if the null hypothesis is true, the statistical result will be large (i.e., the percent of cases fitting the normal distribution is large). In each test, if the level of significance is less than $p < .05$ (*), then the null hypothesis is rejected.

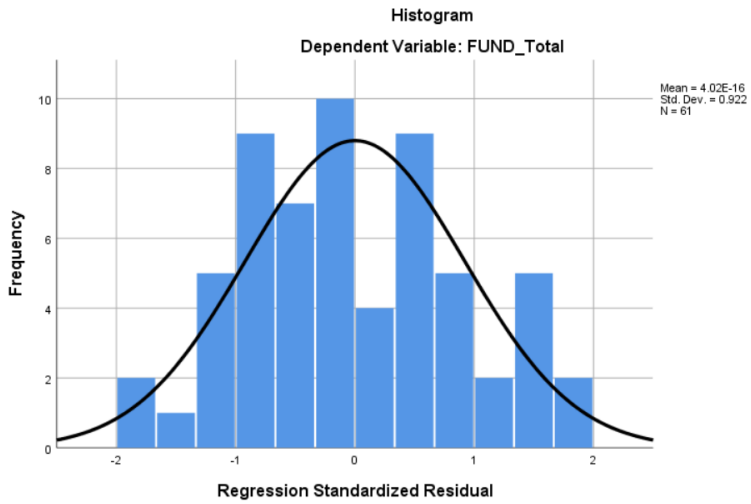


Figure 4.10. Histogram depicting the distribution of residuals for the *n*=61 data set.

Independence of residuals. The Durbin-Watson statistic is used to detect autocorrelation of the residuals in a linear regression analysis. In general, Durbin-Watson values fall between 0 – 4, with a value of 2 reflecting no autocorrelation, a value between 0 – 2 reflecting some degree of positive autocorrelation, and a value between 2-4 reflecting some degree of negative autocorrelation. In general, a Durbin-Watson test statistic between 1.5 – 2.5 is deemed acceptable. (https://www.statology.org/durbin-watson-test/). However, tables of critical values have been developed for determining whether a Durbin-Watson statistic falls within the lower and upper limit of acceptable values (https://online.stat.psu.edu/stat501/sites/stat501/files/14outliers/durbinwatson.pdf). In SPSS, the Durbin-Watson statistic is an option in Linear Regression analysis. As in previous analyses, for the *n*=69 sample, the SPSS option which fills in any missing values in the DV or IVs with sample means was used. The Durbin-Watson results from the analysis using this data set was 1.44, which fell outside the generally accepted

range of Durbin-Watson test statistic values. However, in the table of critical values noted above, the lower and upper limits for *n*=70 and 6 IVs was 1.313 and 1.611. Further, this lower limit decreases when the n size decreases (e.g., to 69) as well as when this number of IVs increases (e.g., to 7), suggesting that this Durbin-Watson statistic does fall within an acceptable range.

The Durbin-Watson results from the analysis of the *n*=61 data set was 1.138, which fell outside the generally accepted range. The results of these analyses indicated that these data were positively autocorrelated. However, using this same table of critical values, the lower and upper limits for *n*=60 and six IVs 1.248 and 1.598. Although this table does not contain lower and upper limits for nine IVs, as the number of IVs increases, this lower and upper limit decreases by approximately 0.04 for each IV, suggesting that the lower limit for nine IVs would be approximately 1.128. Using this extrapolated lower limit, it also appears as if this Durbin-Watson statistic falls within an acceptable range. In summary, although the Durbin-Watson statistic for the *n*=69 and *n*=61 data sets were positively autocorrelated, both statistical values appear to fall within an acceptable range, indicating that the Independence of Residuals assumption was met.

Homoscedasticity. The final regression assumption pertains to the extent to which there is homogeneity of variance in residual values, i.e., homoscedasticity. In SPSS, this is tested by generating unstandardized and Studentized residual values using linear regression, and then graphing the two sets of values in a scatterplot. If there is homoskedasticity, the plotted values will be reasonably equally distributed. However, if there is a discernable pattern to these plotted values (e.g., a funnel or fan shape), then this

is referred to as heteroskedasticity. In regression analyses, heteroskedasticity is a major concern because it invalidates statistical tests of significance which assume that the modeling errors all have the same variance. This assumption was tested using both the *n*=69 and *n*=61 data sets. As in previous analyses, SPSS was unable to run this analysis using pooled data from multiple imputation, so a decision was made to have SPSS insert sample means for any missing responses. In SPSS, linear regression analysis was used to calculate unstandardized residuals and Studentized residuals, and then to plot the relationship between these two sets of residuals in a graph. The graph of these results is presented in Figure 4.11. No clear pattern is apparent in this graph, so the *n*=69 data sets meets the regression assumption pertaining to homoscedasticity.

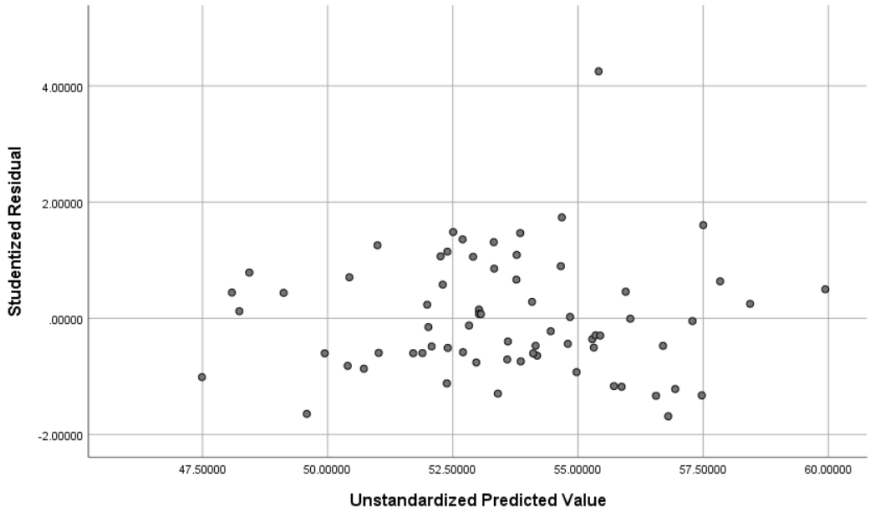


Figure 4.11. Graph of the relationship between unstandardized and Studentized residuals (*n*=69).

The graph of the *n*=61 results is presented in Figure 4.12. No clear pattern is apparent in this graph, so the *n*=61 data set meets the regression assumption pertaining to homoscedasticity.

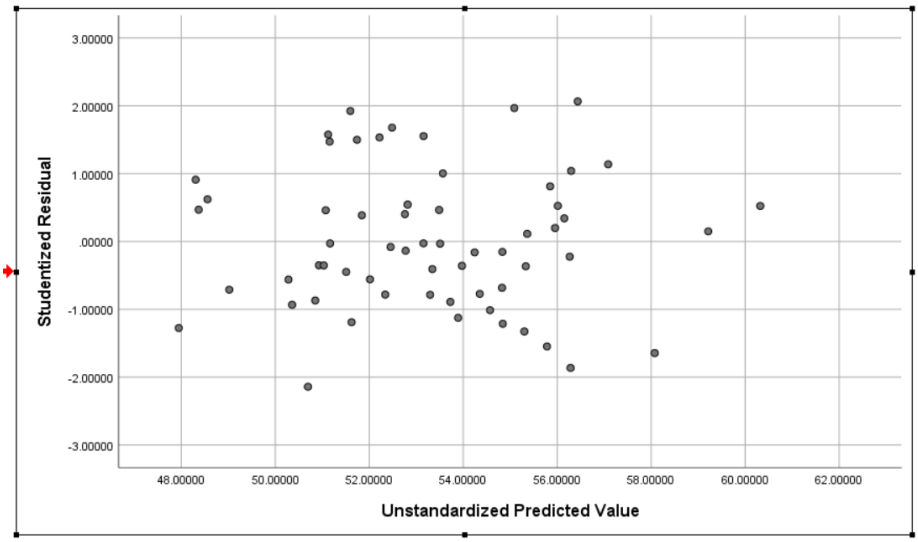


Figure 4.12. Graph of the relationship between unstandardized and Studentized residuals (*n*=61).

Additional data preparation for Research Question 3. Of the linear regression analyses for part (a) of this research question, the first analysis used the *n*=69 data set, with AAEIS Total Scores as the DV, and seven IVs. The second analysis used the *n*=61 data set, with AAEIS Total Scores as the DV, and nine IVs. These same two analyses were conducted for part (b) of this research question. For these analyses, seven of the nine IVs were in numeric form as continuous variables, so no further steps were needed to prepare the values for these analyses. However, Gender and Student Engagement were categorical variables, so each was converted to numeric form using dummy coding and was assigned a value of one or zero (Table 4.30, p. 233).

Table 4.30

Dummy Coding Scheme for Categorical Variables included in Analyses for Research Question 3

Variables & Coded Values	X_2	X_4
Gender		
Male	0	
Female	1	
Student Engagement at EFSC		
No		0
Yes		1

Post-hoc power analysis. Post hoc power analysis is used to estimate the actual power of an observed effect based on the final sample size and parameter estimates for a given data set. Many scientists recommend using post hoc power as a follow-up analysis, particularly if a finding is nonsignificant.

Post hoc power analyses for Research Question 3a. The G*Power program was used to conduct these post hoc power analyses. Consistent with Research Question 3a, this first post hoc power analyses were conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with AAEIS Total Scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 69, and number of IVs = 7. The SPSS option for imputing missing values with sample means was used. The results of this analysis indicated that the level of power (1-beta) = .5739.

This level of power falls below the recommended levels of .80 and even .70 (https://www.statisticssolutions.com.) In this case, the level of power appears to be influenced by the relatively large number of IVs (7) for a sample of this size (*n*=69). One of the few ways of adjusting this post hoc level of power is to reduce the number of IVs.

To determine which of those seven IVs had little, if any, influence on the DV, AAEIS total scores, a Linear Multiple Regression analysis was conducted using all seven IVs. The results of that analysis are presented in Table 4.31 (p. 235). The results indicated that, overall, this regression model resulted in R = .367, and R^2 = .135. However, these results also indicated that only three of the IVs had t values greater than 1.0 and an accompanying p value of $p < 0.2$. In descending order, these IVs were: Father's Level of Education (t = 1.999, p = .05), Age (t = 1.774, p = .081), and Number of Terms Completed (t = 1.445, p = .154). A decision was made to retain only these three IVs for the regression analysis for the n=69 data set. When G*Power was used to calculate the power of the regression model which included only those three IVs, the level of post hoc power increased to .749, a more acceptable level. On the basis of these results, the regression analysis for Research Question 3a using the n=69 data set included only three of the seven IV identified in this analysis.

The G*Power program was used to conduct the second set of post hoc power analyses (Table 4.32, p. 236). These post hoc power analyses also were conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with AAEIS Total Scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, n = 61, and number of IVs = 9. The SPSS option for imputing missing values with sample means was used. The results of this analysis indicated that the level of power (1-beta) = .4443. This level of power is noticeably lower than the level of power for the n-=69 data set when seven IV were included.

Table 4.31

Results of Multiple Linear Regression Analysis, for AAEIS Total Scores and Seven Independent Variables (n=69)

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
		B	Std. Error	ß	t	Sig.	Lower Bound	Upper Bound
	(Constant)	43.567	4.741		9.189	.000	34.087	53.048
	Age	.118	.066	.225	1.774	.081	-.015	.251
	How many terms have you completed at EFSC?	.459	.318	.179	1.445	.154	-.176	1.094
	Mothers Level of Education	.368	.898	.058	.410	.683	-1.427	2.164
	Fathers Level of Education	2.183	1.092	.279	1.999	.050	-.001	4.366
	Gender	-.731	2.180	-.044	-.336	.738	-5.090	3.627
	Student Engagement	.105	2.193	.006	.048	.962	-4.280	4.489
	SES Please indicate your current household income in U.S. dollars:	-.849	.831	-.135	-1.021	.311	-2.511	.814

Table 4.32

Results of Multiple Linear Regression Analysis, for AAEIS Total Scores and Nine Independent Variables (n=61)

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
		B	Std. Error	ß	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	41.370	4.861		8.511	.000	31.611	51.129
	Age	.120	.062	.264	1.924	.060	-.005	.245
	Gender	-.835	2.114	-.056	-.395	.695	-5.080	3.410
	How many terms have you completed at EFSC?	.318	.297	.141	1.069	.290	-.279	.915
	Student Engagement in items 8-10	.838	2.114	.053	.396	.694	-3.407	5.083
	Mother's Level of Education	.969	.814	.176	1.190	.240	-.666	2.604
	Father's Level of Education	1.628	1.030	.232	1.581	.120	-.439	3.695
	SES: Current household income (USD)	-.069	.786	-.012	-.088	.930	-1.647	1.509
	SRE-R_Score	-.048	.074	-.112	-.649	.519	-.196	.100
	SRE-L_Score	.045	.061	.130	.730	.468	-.078	.168

As in the post hoc power analysis for the *n*=61 data set, the level of power appears to be adversely influenced by the larger number of IV (9) for a sample of this size. As previously, holding sample size constant, level of power may be adjusted by reducing the number of IVs. To determine which of those nine IVs had little, if any, influence on the DV, AAEIS total scores, a Linear Multiple Regression analysis was conducted using all nine IVs. The results of that analysis are presented in Table 4.32 (p. 236). The results indicated that, overall, this regression model resulted in R = .430, and R^2 = .185. However, these results also indicated that only two of the IVs had t values greater than 1.0 and an accompanying p value of p < 0.2. These IVs were: Age (t =1.924, p = .06), and Father's Level of Education (t = 1.581, p = .12). In light of these results, a decision was made to retain these two IVs for the regression analysis for the *n*=61 data set. When G*Power was used to calculate post hoc power for the regression model which included only two IVs, the level of post hoc power increased to .755, an acceptable level. On the basis of these results, the regression analysis for Research Question 3a using the *n*=61 data set included only two of the nine IV identified in initial plans for this analysis.

Post hoc power analyses for Research Question 3b. Consistent with Research Question 3b, these post hoc power analyses were conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with TEIQue-SF scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 42, and number of IVs = 9. The results of this analysis indicated that the level of power (1-beta) = .2784. This level of power falls well below the recommended levels of .80 (https://www.statisticssolutions.com.) In this case, the level of power appears to be

influenced by the relatively large number of IVs (9) for a sample of this size (*n*=42). One of the few ways of adjusting this post hoc level of power is to reduce the number of IVs. To determine which of those nine IVs had little, if any, influence on the DV, TEIQue-SF Total Scores, a Linear Multiple Regression analysis was conducted using all nine IVs. The results of that analysis are presented in Table 4.33 (p. 239). The results indicated this regression model resulted in R = .498, and R^2 = .248. These results indicated that only one of the IVs had a t value greater than 1.0 and a p value of p < 0.2: Age (t = 2.128, p = .041). A decision was made to retain this one IV for the regression analysis for the *TEIQue-SF (n*=42*)* data set. When G*Power was used to calculate post hoc power for the regression model which included one IV, the level of post hoc power increased to .6877. On the basis of these results, the regression analysis for Research Question 3b using the *n*=42 data set included only one of the nine IV identified in initial plans for this analysis.

Results for Research Question 3

Research question three is stated as follows: To what extent are demographic, experiential, and other background factors of these African-American college students related to their EI scale and subscale scores as measured by:

a. Funderburk's AAEIS; and
b. Petrides' TEIQue-SF?

Results for Research Question 3.a. Two Linear Multiple Regression analyses were conducted using SPSS. The first analysis used the *n*=69 data set, AAEIS Total Scores as the DV, and the three IVs identified in the previous section: Father's Highest Level of Education, Age, and Number of Terms Completed. The results of this analysis are presented in (Table 4.34, p. 240). This regression analysis indicated that the level of

Table 4.33

Results of Multiple Linear Regression Analysis, for TEIQue-SF Total Scores and Nine Independent Variables (n=42)

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	ß			Lower Bound	Upper Bound
1	(Constant)	51.157	6.734		7.597	.000	37.440	64.873
	Age	.122	.057	.382	2.128	.041	.005	.238
	Gender	-2.105	1.804	-.217	-1.167	.252	-5.780	1.570
	How many terms have you completed at EFSC?	-.044	.287	-.027	-.152	.880	-.627	.540
	Student Engagement	2.308	2.200	.175	1.049	.302	-2.173	6.788
	Mother's Education	.474	.667	.139	.711	.482	-.885	1.833
	Father's Education	-.662	1.000	-.146	-.662	.513	-2.698	1.374
	SES: Current household income (USD)	.098	.676	.027	.145	.885	-1.279	1.476
	SRE_R Score	-.106	.094	-.305	-1.126	.269	-.297	.086
	SRE_L Score	.004	.061	.017	.068	.946	-.120	.128

Table 4.34

Model Summary for Multiple Regression Analysis of the Relationship of Three IVs to AAEIS Total Scores (n=69)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.342[a]	.117	.076	6.757	.117	2.874	3	65	.043

variance in the DV explained by these three IVs was .117 (F = 2.874, p = .043), which statistically significant at the p = .05 level. The contribution of each IV to the results in Table 4.34 are summarized in Table 4.35. Of the three IVs, only Father's Level of Education significantly contributed to the variance in AAEIS Scores (*t* = 2.191, p = .032). The lower and upper 95% confidence intervals for B, the unstandardized coefficient, were [.180, 3.893]. In the unimputed data set (*n*=69), the mean for Father's

Table 4.35

Results of Multiple Regression Analysis of the Relationship of Three IVs to AAEIS Total Scores (n=69)

Factors	Unstandardized Coefficients		ß	t	p	95% Confidence Intervals for B	
	B	Std. Error				Lower Bound	Upper Bound
Constant	42.363	3.901		10.861	.000	34.574	50.153
Father's Level of Education	2.037	.929	.260	2.191	.032*	.180	3.893
Age	.117	.063	.225	1.896	.062	-.006	.241
No. of Terms	.492	.304	.192	1.619	.110	-.115	1.100

Notes. * = significant at p < .05

Level of Education was 2.56 (SD = 1.25), represents 36 of the 69 participants due to missing responses. In the data set derived from multiple imputation, this mean was 2.53. For every 1-unit increase in Father's Level of Education, there is on average a 2.04 point increase in AAEIS Total Scores (B= 2.037).

For Research Question 3.a, the second Linear Multiple Regression analyses was conducted using SPSS. Used the *n*=61 data set, AAEIS Total Scores as the Age. The results of this analysis are presented in Table 4.36 (p. 241) and Table 4.37 (p. 242).

Table 4.36

Model Summary for Multiple Regression Analysis of the Relationship of Two IVs to AAEIS Total Scores (n=61)

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.350[a]	.123	.092	5.853	.123	4.048	2	58	.023

Note. a. Predictors: (Constant), Fathers Level of Education, Age.

The results of the regression analysis indicated that the level of variance in the DV explained by these two IVs was .123 (F = 4.048, p = .023), which was statistically significant at the p = .05 level. The relative contribution of each IV to these results are summarized in Table 4.37. Of those two IVs, only Father's Level of Education was found to significantly contribute to an explanation of the variance in AAEIS Scores (*t* = 2.415, p = .019). The lower and upper 95% confidence internals were [.359, 3.837]. In the unimputed data set (*n*=61), the mean for Father's Level of Education was 2.50 (SD =

Table 4.37

Results of Multiple Regression Analysis of the Relationship of Two IVs to AAEIS Total Scores (n=61)

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Intervals for B	
		B	Std. Error	ß	t	p	Lower Bound	Upper Bound
1	(Constant)	44.874	3.073		14.603	.000	38.723	51.026
	Father's Level of Education	2.098	.869	.299	2.415	.019*	.359	3.837
	Age	.096	.054	.220	1.773	.082	-.012	.205

Notes. * = significant at p < .05

1.22), although this represents only 32 of the 61 participants due to missing responses. In the data set derived from multiple imputation, this mean was 2.53. Finally, in the presence of the other IV, for every 1-unit increase in Father's Level of Education, there is on average an associated 2.10 point increase in AAEIS Total Scores (B= 2.098).

Results for Research Question 3.b. For this research question, a third Linear Multiple Regression analyses was conducted using SPSS. This analysis used the *n*=42 data set, TEIQue-SF Total Scores as the DV, and the one IV identified in the previous section: Age. The results of this analysis are presented in Table 4.38 and Table 4.39 (p. 243). The results of this regression analysis indicated that the level of variance in TEIQue-SF Scores explained by this IV was .121 (F = 5.487, p = .024), which was statistically significant at the p = .05 level. Additional results pertaining to this IV are summarized in Table 4.39. Consistent with results in Table 4.38, the contribution of Age to an explanation of the variance in TEIQue-SF Scores was statistically significant

Table 4.38

Model Summary for Multiple Regression Analysis of the Relationship of One IV to TEIQue-SF Total Scores (n=42)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.347[a]	.121	.099	24.72139	.121	5.487	1	40	.024

a. Predictors: (Constant), Age

Table 4.39

Results of Multiple Regression Analysis of the Relationship of One IV to TEIQue-SF Total Scores (n=42)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	128.202	10.594		12.101	.000	106.790	149.614
	Age	.664	.284	.347	2.342	.024	.091	1.237

a.Dependent Variable: TEIque Score

(*t* = 2.342, p = .024). The lower and upper 95% confidence intervals for B were [.091, .1237]. Further, in the unimputed data set, the mean for Age was 34.86 (SD = 13.61; Range = 18 - 63). As there were no missing responses, there is no difference between the mean in the unimputed and imputed data sets. Finally, for every 1-unit increase in Age, there is on average an associated .67 increase in TEIQUe-SF Total Scores (B= .664).

Summary. To maintain a reasonable level of power in analyses for Research Question 3 (power = approximately .75), a series of preliminary linear regression analyses were conducted. For Research Question 3a, with AAEIS Total Scores as the

DV, the results of the preliminary analysis for the *n*=69 data set led to the identification of three IVs to be included in the first of the final regression analyses: Father's Level of Education, Age, and Number of Terms Completed. The results of this regression analysis indicated: (a) this model explained 11.7% of the variance in AAEIS Total Scores, and (b) only Father's Level of Education made a statistically significant contribution to an explanation of the variance in AAEIS Total Scores ($F = 2.874$, $p = .043$). The results of the preliminary analysis for the *n*=61 data set led to the identification of two IVs to be included in the second of the final regression analyses for Research Question 3a: Father's Level of Education and Age. The results of this regression analysis indicated: (a) this model explained 12.3% of the variance in AAEIS Total Scores; and (b) only Father's Level of Education made a statistically significant contribution to an explanation of the variance in AAEIS Total Scores ($F = 4.048$, $p = .023$).

For Research Question 3b, with TEIQue-SF Scores as the DV, the results of the preliminary analysis for the *n*=42 data set led to the identification of one IV to be included in the final regression analyses: Age. The results of this regression analysis indicated: (a) this model explained 12.1% of the variance in TEIQue-SF Scores, and (b) that Age made a statistically significant contribution to an explanation of the variance in these Scores ($F = 5.487$, $p = .024$).

Results of Additional Exploratory Analyses

For Research Question 2, analyses of the dimensions of the AAEIS derived for this sample (Tables 4.10, p. 152, and 4.26, p. 209) , coupled with Petrides' own analyses of the dimensions of the TEIQue-SF (Table 2.1, p. 49) indicate that these two instruments

appear to measure several common dimensions of EI (i.e., Petrides' factors: Self-Control, Sociability, and Emotionality), as well as several unique dimensions of EI (i.e., Petrides factor: Well-Being; and Auxiliary Items: Self-Motivation and Adaptability). The analyses for Research Questions 1 and 3 included two measures of EI: Funderburk's AAEIS, and Petrides' TEIQue-SF. In those analyses, descriptive and regression analyses were conducted using each of these as a separate and distinct measure of EI. When these two EI instruments were treated separately, each offered some unique insights in salient characteristics and dimensions of EI for the sample in this study. However, what is less clear from these analyses is whether certain items in the AAEIS and certain items in the TEIQue-SF reflect common psychometric properties, specifically for the sample in this study. Thus, to further explore the characteristics of EI for this sample and to determine which, if any, items from each instrument held relevant psychometric properties, specifically reflected the same underlying dimensions of EI, a decision was made to conduct one Exploratory Factor Analysis (EFA) ,with Varimax Rotation, to include items 1-15 from the AAEIS and all 30 items from the TEIQue-Sf (i.e., all rating scale items). The results of this EFA are summarized in Table 4.40 (p. 246). This EFA identified a total of 12 factors with an Eigenvalue greater than 1, with a cumulative explained variance of 78.05%. In addition, nine factors had an Eigenvalue greater than 1.5, with a cumulative explained variance of 64.68%. Further, five factors had an Eigenvalue greater than 2, with a cumulative explained variance of 43.22%. Finally, the single strongest factor, Factor 1, had an Eigenvalue of 10.97, and cumulative explained variance of 10.9%. The results for all 12 factors reflect the EFA objective of maximizing explained

Table 4.40

Results of EFA for AAEIS Items 1-15 and TEIQue-SF Items: Factors, Eigenvalues, and Variance Explained (n=69)

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.970	24.379	24.379	10.970	24.379	24.379	4.912	10.915	10.915
2	4.357	9.682	34.061	4.357	9.682	34.061	4.362	9.693	20.607
3	3.388	7.529	41.591	3.388	7.529	41.591	3.967	8.815	29.422
4	2.748	6.107	47.698	2.748	6.107	47.698	3.472	7.717	37.139
5	2.559	5.687	53.385	2.559	5.687	53.385	2.738	6.085	43.224
6	1.998	4.439	57.824	1.998	4.439	57.824	2.706	6.013	49.237
7	1.787	3.970	61.794	1.787	3.970	61.794	2.431	5.403	54.640
8	1.746	3.879	65.673	1.746	3.879	65.673	2.364	5.254	59.894
9	1.668	3.706	69.379	1.668	3.706	69.379	2.154	4.786	64.679
10	1.438	3.195	72.574	1.438	3.195	72.574	2.139	4.752	69.432
11	1.331	2.959	75.533	1.331	2.959	75.533	1.966	4.369	73.801
12	1.132	2.515	78.048	1.132	2.515	78.048	1.911	4.248	78.048

Note. This table includes only the results for factors with an Eigenvalue greater than 1.0.

variance, while the results for one and five factors reflect the EFA objective of identifying the smallest number of most powerful factors. This EFA also generated a rotated component matrix for items from these two EI measures which loaded on these 12 factors, suppressing all loadings less than 0.3. These results are presented in Table 4.41, p. 248. A review of the factor loadings presented in Table 4.41 (p. 248) revealed that for Factors 1 – 5, between four and eight items had the largest or primary factor loading on each factor, while fewer items had a primary factor loading on Factors 6 – 12.
In light of this, the Items with a primary factor loading for Factors 1-5 and 6-12 are identified in Table 4.42 (p. 250). This table also includes an attempt to identify the dimensions of EI reflected in the items which loaded on each of these factors.

Factor 1 had the largest Eigenvalue (10.97) and contributed the largest percentage of explained variance in the rotated matrix (10.9%). It is noteworthy that all six of the items with a primary loading on Factor 1 were found in the TEIQue-SF: Items 3, 9, 18, 20, 24, 27 (Table 4.42). Further, all six items (i.e., including Item 18 after reverse scoring), pertained to a cluster of what appear to be broad, healthy dimensions of EI. Within the TEIQue-SF, Items 9 and 24 both reflect the dimension identified by Petrides as *positive sense of self-concept/esteem,* while Items 3 and 18 reflects the dimension identified as *personal motivation*. In addition, Item 20 reflects the dimension identified as *enjoys life*, and Item 27 reflects the dimension identified as *perspective on life* and reflects optimism. Further, it is noteworthy that these six items focus on one's self, and not on self-in-relationship. Of these, the emphasis on self is found in few items within the AAEIS (e.g., Factor 5 in Table 4.26, p. 213), in part because so many items in

Table 4.41

Results of EFA for Selected AAEIS and TEIQue-SF Items: Rotated Component Matrix (n=69)

Rotated Component Matrix[a]

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
Q20_1							.838					
Q20_11			.798									
Q20_3				-.321						.604		
Q20_6				.483				-.369	-.349			
Q20_10										.847		
Q20_15						.718						
Q20_2				-.832								
Q20_5				.668		.367						
Q20_7	.333				.373		.376					
Q20_4				.695								
Q20_13								.742				
Q20_8			.724									
Q20_12	.353									.322		.689
Q20_9												.701
Q20_14			.576					.333				
Q27_5	.603	.625										
Q27_9	.439						.365		.386			
Q27_12	.305		.670						-.308			
Q27_20	.713	.468										
Q27_24	.549				.332	.338						
Q27_27	.624								.514			
Q27_4		.367	.571						.342		.392	
Q27_7											.749	
Q27_15		.697						.389				
Q27_19		.566		-.338								
Q27_22					.352		-.471					.381
Q27_30									.818			
Q27_1		.662		.313								
Q27_2					-.618							
Q27_8	.388	.469								.387		

Table 4.41 (cont.)												
Q27_13								.772				
Q27_16			.367		.720							
Q27_17		.313	.593									
Q27_23		.862										
Q27_28	.382				.714							
Q27_6	.343	.545				.413						
Q27_10				.614		.477						
Q27_11	.364		.336	.438							-.498	
Q27_21		.563					.321					.385
Q27_25				.320	-.370		.645					
Q27_26	.315								.335	-.356	.355	
Q27_3	.837											
Q27_14			.510			.411						
Q27_18	.782											
Q27_29	.401					.728						

Notes. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. This rotation converged in 24 iterations,. Q20 refers to item numbers in the AAEIS, and Q27 refers to item numbers in the TEIQue-SF

the AAEIS focus on self-in-relationship (Table 3.2, p. 116, and Table 4.26, p. 213). In summary, the results of the EFA for this sample of AA college students (*n*=42), revealed that Factor 1 reflected a cluster of healthy dimensions of EI; this could only be identified through the use of an EI instrument which included items to measure these dimensions, such as the TEIQue-SF, but not the AAEIS.

Factor 2 had the second largest Eigenvalue (4.36) and contributed the second largest percentage of explained variance in the rotated matrix (9.7%). As in Factor 1, it is noteworthy that all eight of the items with a primary loading on Factor 1 were found in the TEIQue-SF: Items 1, 5, 6, 8, 15, 19, 21, and 23 (Table 4.42, p. 250). Further, all eight items (i.e., including Items 5 and 8 after reverse scoring), pertained to a cluster of healthy dimensions of EI. Within the TEIQue-SF, Items 8 and 23 both reflect the dimension

Table 4.42

Results of EFA for Selected AAEIS and TEIQue-SF Items: Primary Item Loadings, by Factor (n=69)

Factor	Item Scoring[1]	AAEIS Items[2]	TEIQue-SF Items[2]	Apparent EI Dimensions
1	Normal Reverse		3, 9, 20, 24, 27 18	TEIQue-SF: Factor = Well Being (9, 20, 24, 27); Aux. Items = Personal Motivation (3, 18)
2	Normal Reverse		1, 6, 15, 19, 21, 23 5, 8	TEIQue-SF: Factors = Emotionality (1, 8, 23); Sociability (6, 21); Self-Control (15, 19); and Well Being (5)
3	Normal Reverse	11, 14 8	17 4, 12, 14	AAEIS: Factor = Willingness to Understand Others (all) TEIQue-SF: Factors = Self-Control (4); Well Being (12); Emotionality (17); Aux. Items = Adjust to Life Circumstances (14)
4	Normal Reverse	2, 6 4, 5	10	AAEIS: Factors = Self-Control/Conflict Avoidance (2, 4, 5), Conflict Engagement (6) TEIQue-SF, Factor = Sociability (10)
5	Normal Reverse	7	2, 16, 28	AAEIS Factor = Self-Control/Conflict Avoidance (7) TEIQue-SF: Factor = Emotionality (all)
6	Normal Reverse	15	29	AAEIS: Factor = Conflict Engagement (15); TEIQue-SF: Aux Items = Adaptability (29)
7	Normal Reverse	1, 7	22, 25	AAEIS: Factors = Self-Control/Conflict Avoidance (7); Loss of Self-Control (1) TEIQue-SF: Factor = Self-Control (22); Sociability (25)
8	Normal Reverse	13	13	AAEIS: Factor = Loss of Self Control (13) TEIQue-SF: Factor = Emotionality (13)
9	Normal Reverse		30	TEIQue-SF: Factor = Self Control (30)
10	Normal Reverse	3, 10	26	AAEIS: Factor = Conflict Engagement (3, 10) TEIQue-SF: Factor = Sociability (26)
11	Normal Reverse		11, 7, 26	TEIQue-SF: Factors = Self-Control (7); Sociability (11, 26)
12	Normal Reverse	9 12		AAEIS Factors = Willingness to be Responsive to Others (9); Conflict Engagement (12)

Notes. 1. For the AAEIS, items that were normal and reversed scored are identified in Table 3.2 (p. 116) and Table 4.26, p. 213). However, changes in scoring for Items 6 and 7 were recommended in Table 4.26. For the TEIQue-SF, items scored that were normal and reversed scored were identified by Petrides and his colleagues (Scoring the TEIQue | London Psychometric Laboratory). 2.When an item loaded on more than one factor, and those loadings differed by less than .005, that item was listed for both of those factors. Thus, AAEIS Item 7 was listed for Factors 5 and 7, and TEIQue-SF Item 26 was included for Factors 10 and 11.

identified by Petrides as *in touch with my feelings*. Like these items, four of the other items which loaded on this factor tended to focus on an individual's recognition of and processing of their own emotions: Item 19 reflects the dimension *self-regulate emotions*, Item 15 reflects the dimension *cope with stress*, Item 1 reflects the dimension *express*

emotions, and Item 5 reflects the dimension *enjoy life* (i.e., which may follow from self-regulation, coping ability, and/or expression). However, Items 6 and 21 reflects the dimension identified as *deal with others*. Although these two items may be seen as an extension and outward expression of the dimensions apparent in the other six items, these two items shift the focus of EI from self to self-in-relationship (i.e., negotiate and deal effectively with others). In summary, the results of the EFA for this sample revealed that Factor 2 also reflected a cluster of healthy dimensions of EI, specifically those which pertained primarily to their own emotions (6 items) and secondarily to dealing constructively with others (2 items). For the former, this could only be identified through the use of an EI instrument which included items to measure these dimensions, such as the TEIQue-SF, but not the AAEIS. However, Item 9 in the AAEIS resembles Items 6 and 21 in the TEIQue-SF, emphasizing the ability to negotiate with others. Despite this apparent similarity, Item 9 loaded on Factor 12, rather than Factor 2, in this EFA.

Factor 3 had the next largest Eigenvalue (3.388) and contributed the next largest percentage of explained variance in the rotated matrix (8.8%). Four items from the TEIQue-SF had a primary loading on this factor: 4, 12, 14, and 17. However, unlike Factors 1 and 2, three items from the AAEIS also loaded on this factor: 8, 11, and 14 (Table 4.42, p. 250). It is not entirely clear how these seven items may be related, although it does appear as if these items reflect two distinctly different dimensions of EI. Items 8, 11, and 14 in the AAEIS, and Item 17 in the TEIQue-SF all pertain to a *willingness to understand other people's viewpoint* (Table 4.26, p. 213). These items reflected what is considered to be a healthy dimension of EI, one that emphasizes self-in-

relationship. On the other hand, TEIQue-SF Items 4, 12, and 14 were all negatively worded items that focus on one's own emotions. Item 4 reflects the dimension of EI identified by Petrides as *self-regulate emotions*. This is the negatively worded item which Petrides paired with the positively worded Item 19, which loaded on Factor 2. Item 12 reflects the dimension of EI identified as *perspective on life*. Once again, this is the negatively worded item which Petrides paired with the positively worded item 27, which loaded on Factor 1. In both instances, the positively and negatively worded items for the same dimension loaded on different factors. Finally, Item 14 reflects the dimension of EI identified as *adjust to life circumstances*, although this item emphasizes the difficulty in doing so. In summary, it appears as if the items with a primary loading on Factor 3 reflected two different dimensions of EI: (a) four items reflect a healthy dimension of EI which emphasizes self-in-relationship and features one's willingness to understand others; and (b) three negatively worded items reflect unhealthy dimensions of EI which emphasize one's own emotions.

Factor 4 had an Eigenvalue of 2.748 and contributed 7.7% percent to explained variance in the rotated matrix. Four items from the AAEIS had a primary loading on this factor: 2, 4, 5, and 6. All four of these items loaded on Factor 1 in the five-factor EFA for AAEIS Items (Table 4.26, p. 213). In addition, Item 10 in the TEIQue-SF also loaded on this factor. All five of these items emphasize self-in-relationship, and four items pertained to how individuals react to conflict and/or stand up for themselves. In the TEIQue-SF, Item 10, which is negatively worded, focuses on difficulty in standing up for one's self. In the AAEIS, Item 2 focuses on avoiding conflict when someone is being rude to them,

while Item 6 focuses on responding to conflict in an aggressive manner (i.e., argue or fight back). Although a change to reverse scoring was recommended for Item 6 in Table 4.26, p. 213), there was no change in scoring prior to this EFA, which makes the interpretation of these results more complicated (e.g., if Item 6 had been reverse scored prior to this analysis, it may not have loaded on Factor 4). Items 4 and 5 are negatively worded. Like Item 2, Item 5 focuses on avoiding conflict, although in this item, the person avoids it even if they feel bad when doing so. Lastly, Item 4 is the only one of these five items that does reflect an explicit response to conflict. It focuses on hiding it when they are mad (e.g., regulating or suppressing raw or strong emotions). In summary, the results of the EFA for this sample revealed that Factor 4 reflected a complex dimension of EI, specifically those which pertained how a person acts on their emotions, whether in response to their own raw emotions or in the context of conflict with others: in the form of avoidance (AAEIS Items 2, 4, and 5), assertiveness (TEIQue-SF Item 10), or aggression (AAEIS Item 6). This could only be identified through the use of an instrument which included items to measure these aspects of EI, in this case items in the AAEIS (i.e., as there was only two items in the TEIQue-SF which measured aspects of this, Items 10 and 25, only one of which loaded on this factor).

Factor 5 had an Eigenvalue of 2.559 and contributed 6.08% percent to explained variance in the rotated matrix. Four items had a primary loading on this factor, and all four of those items were reverse scored. This included Items 2, 16, and 28 in the TEIQue-SF. All three of these TEIQue-SF items are part of the Emotionality Subscale, but each reflects a different dimension of EI. Item 2 is negatively worded and focuses on the

difficulty of seeing things from *other peoples' viewpoint*. Items 16 is negatively worded, and focuses on the difficulty in *expressing emotions*. Item 28 is negatively worded and focuses on the difficulty of bonding with or *relating to others*. As can happen in EFA analyses, items with negative wording can load on the same factor even when the items have different emphases (i.e., in this case, different dimensions of EI).

In addition, the only item from the AAEIS which had a primary loading on this factor was Item 7. This item emphasizes Self-Control/Conflict Avoidance and pertains to how one reacts to avoid conflict. Although like the TEIQue-SF items, this item was reverse scored, the EFA results for the AAEIS appeared to support a recommendation that the scoring for Item 7 be changed from reverse to normal scoring (Table 4.26, p. 213). Thus, if Item 7 has been reverse scored before this EFA, this item may not have loaded on this factor.

In summary, the results of the EFA for this sample revealed that Factor 5 reflected at least one, and possibly two, dimensions of EI. The three items from the TEIQue-SF were included by Petrides in the Emotionality Subscale, and all were negatively worded and reverse scored. However, the dimension of EI reflected in each of these items differed. Thus, it appears as if the direction of item wording and scoring, rather than apparent similarities in the dimension(s) of EI, are reflected in these items loading on this factor. Item 7 from the AAEIS also was reverse scored, although results from the EFA of AAEIS items suggests that it should not have been, and therefore its loading on this factor may be an artifact of that reverse scoring (Table 4.26, p. 213). The fact that Item 7

emphasizes Conflict Avoidance, an aspect of EI not featured in any of the three TEIQue-SF items, supports this interpretation.

Factor 6 had an Eigenvalue of 1.998 and contributed 6.01% percent to explained variance in the rotated matrix. Only two items had a primary loading on this factor, one from the AAEIS and one from the TEIQue-SF. In the AAEIS, this was Item 15. In the five-factor EFA for AAEIS Items (Table 4.26, p. 213), Item 15 emphasized Conflict Engagement and pertains to how one reacts to escalate conflict. It was negatively worded and reverse scored. In the TEIQue-SF, Items 29 was a positively worded Auxiliary Item which focuses on *adjusting to life circumstances.* The fact that there are only two items, and that there are difference in the direction of the wording and scoring of these two items, makes it more difficult to interpret how these items may be related. For example, it is possible, that a meaning reversal (reverse scoring) for Item 15 in the AAEIS could lead someone to react/respond to a conflict in another manner which reflected some form of adjustment.

In summary, the results of the EFA for this sample revealed that Factor 6 reflected two dimensions of EI, specifically those which pertained to how a person responds to a hostile situation (AAEIS Item 15), and adapts to a new environment (TEIQue-SF Item 29). Both items focus on one's ability to adapt and respond to challenging conditions in their environment, although there are other items in both the AAEIS and TEIQue-SF which reflect this broader interpretation.

Factor 7 had an Eigenvalue of 1.787 and contributed 5.40% percent to explained variance in the rotated matrix. Four items had a primary loading on this factor, and all

four of those items were reverse scored. This included Items 1 and 7 in the AAEIS; of these, Item 7 also loaded on Factor 5 in this EFA. In the AAEIS, Item 1 emphasizes Loss of Self-Control and pertains to how one reacts to rumors about others. Item 7 emphasizes Self-Control/Conflict Avoidance and pertains to how one reacts to avoid conflict. In addition, Items 22 and 25 in the TEIQue-SF also loaded on Factor 7. In the TEIQue-SF, Item 22 which is negatively worded, focuses on *mental clarity* (i.e., as it pertains to decisions to become involved in things). In the TEIQue-SF, Item 25 which is negatively worded, focusses on *standing up for yourself* (i.e., a tendency to 'back down').

In summary, there are at least two ways of interpreting the loading of these four items on this factor. The first interpretation is that as in Factor 5, all four items are negatively worded. However, unlike Factor 5, there are four items which loaded on this factor, which provides greater opportunity to compare and interpret the emphasis or meaning of each item from the perspective of EI. Two of these items, Item 1 in the AAEIS and Item 22 in the TEIQue-SF both appear to emphasize some type of regret after making what appear to be impulsive decisions (Item 1: spreading rumors about another; Item 22: getting involved in things). This aspect of EI is not given explicit attention in the dimensions of EI apparent in the AAEIS (Table 3.2, p. 116, and Table 4.26, p. 213), and is given limited attention in the dimensions of EI in the TEIQue-SF (i.e., one *mental clarity* item). The remaining two items, Item 7 in the AAEIS and Item 25 in the TEIQue-SF both appear to emphasize a person's unwillingness to stand up for themselves (Item 7: avoid situations when someone is bothering them; Item 25: tend to 'back down' even when a person knows they are right). This dimension of EI is given prominent attention

in the AAEIS in Self-Control and Conflict Avoidance items (Table 3.2, p. 116, and Table 4.26, p. 213), and is reflected one or two of the dimensions of EI embedded in the TEIQue-SF: *stand up for myself* and possibly aspects of *self-regulate emotions* that pertains to self-control. It is unclear if and how these two aspects of EI may be related conceptually (regret over apparently impulsive decisions, and not standing up for one's self).

Factor 8 had an Eigenvalue of 1.746 and contributed 5.25% percent to explained variance in the rotated matrix. Both of the items that had a primary loading on this factor were negatively worded and reverse scored. In the AAEIS, Item 13 focuses on getting angry quickly and acting crazy, which reflects a Loss of Self-Control (Table 4.26, p. 213). In the TEIQue-SF, Item 13 is included in the Emotionality Subscale and reflects the EI dimension of *relating to others*, specifically others complaining when that person does not treat them right. There might be some common EI emphasis in these two items (e.g., from the AAEIS perspective, acting impulsively; and from the TEIQue-SF perspective, acting without consideration for others). However, the fact that there are only two items, one focusing on self and the other on self-in-relationship, with each reflecting a different aspects of EI, makes it difficult to identify or suggest such a commonality with any clarity and confidence. At the same time, as with Factors 5 and 7, it is possible that these items loaded on this factor because they were both negatively worded and reverse scored.

Factor 9 had an Eigenvalue of 1.668 and contributed 4.78% percent to explained variance in the rotated matrix. Only one item had a primary loading on this factor: Item 30 in the TEIQue-SF. This item was positively worded, focuses on self, and is included in

Petrides' Self-Control Subscale. It focuses on *coping with stress*, specifically appearing to have a relaxed approach or demeanor. Few items in either measure of EI were related to this aspect of EI (i.e., none in the AAEIS, and only Item 15 in the TEIQue-SF). Given this, and the Eigenvalue and explained variance associate with this Factor and Item, it appears as if this item measures a unique and relevant aspect of EI for this sample.

Factor 10 had an Eigenvalue of 1.438 and contributed 4.75% percent to the explained variance in the rotated matrix. Three items had a primary loading on this factor, and all three of these items were negatively worded and reverse scored (i.e., as in Factors 5, 7, and 8). These included Items 3 and 10, both of which pertained to Conflict Engagement (Table 3.2, p. 116, and Table 4.26, p. 213). Item 26 in the TEIQue-SF also loaded on this factor. This item was part of Petrides' Sociability Subscale, reflects the dimension entitled *influence others*, and focuses on the perception of powerlessness over others' feelings. Although these two AAEIS items reflect the same dimension of EI, it is less clear if this TEIQue-SF item is related to them in some way (e.g.., a felt inability to interact with others in constructive ways). However, as with previous factors, it also is possible that these items loaded on this factor because they were all negatively worded and reverse scored. Finally, within these two measures of EI, there is only one other item which reflects this dimension of EI in the TEIQue-SF (Item 11), but that item is positively worded. On the other hand, there appeared to be a total of five Conflict Engagement items in the AAEIS (Table 4.26). In addition to Items 3 and 10, these included Items 6, 12, and 15. It is noteworthy that of these, Items 12 and 15 had a primary loading on other factors in this EFA: Item 15 loaded on Factor 6, and Item 12

loaded on Factor 12 (below). Of these five Conflict Engagement items, only Item 6 was not reverse scored, although results in Table 4.26 (p. 213) suggest that it should have been. If Item 6 had been reverse scored, it is possible that it would have loaded on the same factor as Items 3 and 10, although this is a matter of speculation. In light of its normal scoring, Item 6 loaded on Factor 4 (i.e., with Conflict Avoidance items).

Factor 11 had an Eigenvalue of 1.331 and contributed 4.37% percent to explained variance in the rotated matrix. All three of the items which had a primary loading on this factor were found in the TEIQue-SF: Items 7, 11, and 26. Two of these items focus on self-in- relationship and are included in Petrides' Sociability Scale; both reflect the dimension of EI called *influence others*. However, Item 11 was scored normally, and Item 26 was reverse scored. Item 11 focuses on influence on others' feelings, while Item 26 focuses on powerlessness over others' feelings. The remaining item, Item 7, focuses on self and is included in Petrides' Self-Control Subscale; it reflects the dimension of EI referred to as *mental clarity*. This item focuses on indecisiveness and is negatively worded so it was reverse scored. Although Items 11 and 26 reflects the same dimension of EI, it is less clear how Item 7 may be related to them (e.g., Does mental clarity serve as a precursor to or correlate of one's ability to influence the feelings of others?). Similarly, although Items 7 and 26 were negatively worded and reverse scored, Item 11 was not, so direction of wording and scoring does not appear to serve as an clear explanation for these items loading on the same factor. In summary, although there is some clarity about why pairs of these items load on the same factor (i.e., dimensionality, direction), it is less clear how or why all three items do so.

Factor 12 had an Eigenvalue of 1.132 and contributed 4.% percent to explained variance in the rotated matrix. Only two items, both AAEIS items (Items 9 and 12) had a primary loading on this factor. Item 9 is positively worded and emphasizes a willingness to negotiate with others. This item reflects the dimension of EI referred to as Willingness to be Responsive to Others (Table 4.26, p. 213). Item 12 is negatively worded and was reverse scored and pertains to assumptions and projections about another individual before getting to know them. This item loaded almost equally on dimension referred to as Conflict Engagement and as Loss of Self-Control (Table 4.26), although it does not appear to be a good conceptual fit to the other items which load more strongly on these factors. However, there does appear to be some commonality in these two items: whether a person is or is not willing to talk with, listen to, and consider the feelings/wishes of others (Item 9: yes; and Item 12: no). Within the AAEIS, the items which bear some resemblance to Item 9 are Items 11 (positively worded) and 1 (negatively worded) in the factor labeled Willingness to be Responsive to Others (Table 4.26), although each item loaded on another factor in this EFA (Item 11: Factor 3; and Item 1: Factor 7). Further, the only item in the AAEIS that bears any resemblance to Item 12 is Item 8, as both focus on potentially faulty projections regarding others' thoughts and feelings (Table 3.2, p. 116). Like Item 11, Item 8 also loaded on Factor 3 in this EFA. This raises an interesting question to which there is no simple and clear answer: If Items 9 and 11are related and positively worded, and Items 12 and 8 are related and negatively worded, why do Items 8 and 11 load on Factor 3, while Items 9 and 12 load on Factor 12?

Summary. The EFA which included Items 1-15 from the AAEIS and all 30 items from the TEIQue-SF identified 12 factors with an Eigenvalue greater than 1.0, explaining a total of 78.05% of the variance in this rotated matrix. Of those 12 factors, four factors included only items from the TEIQue-SF (Factors 1, 2, 9, and 11). At the same time, only one factor included only items from the AAEIS (Factor 12), although of the five items included in Factor 4, four were from the AAEIS. In addition, four factors included only items which had been reverse scored (Factors 5, 7, 8, and 10). There were no multi-item factors which included only items which were positively worded and therefore scored normally. Further, four factors included only one or two items (Factors 6, 8, 9, and 12), and the small number of items in each of these factors made it more difficult to interpret the dimensions and/or directions apparent in item phrasing with any clarity. Finally, several factors included items which either reflected two or more dimensions of EI, or which included items that could be interpreted from the perspective of dimensions and/or direction (Factors 3, 7, 10, and 11).

Despite these patterns and limitations, there were several important findings which emerged from this analysis. First, the two most prominent factors, Factors 1 and 2, included only TEIQue-SF items which emphasized healthy dimensions of aspects of EI (Factor 1: 6 items; Factor 2: 8 items). All but two of these 14 items reflected a positive sense of self; in Factor 2, Items 6 and 21 reflected self in relationship with others. Although none of the items in the AAEIS had a primary loading on either of these factors, three items in the AAEIS appeared to be related to Petrides' dimension of EI associated with Items 6 and 21: dealing effectively with others. For example, AAEIS

Item 9 appears to be related to TEIQue-SF Item 21 in that both involve the ability to negotiate with others. AAEIS Items 11 and 14 also reflect healthy aspects of dealing with others (Table 3.2, p. 116), although the more specific aspects of EI featured in these items are not apparent in TEIQue-SF Items 6 or 21. Regardless, none of these three AAEIS items had a primary loading on either Factor 1 or 2. Rather, AAEIS Items 11 and 14, as well as 8, loaded on Factor 3 (Table 4.42, p. 250).

Of the most prominent factors found in the EFA for only AAEIS items, the first focuses on Self-Control/Conflict Avoidance, and the second on Conflict Engagement (Table 4.26, p. 213). When AAEIS and TEIQue-SF items were combined in this EFA, three Self-Control/Conflict Avoidance items (Items 2, 4, 5) and one Conflict Engagement item (Item 6) in the AAEIS, along with one item from the TEIQUe-SF (Item 10) had a primary loading on Factor 4. It is noteworthy that the most prominent factor found underlying AAEIS items (Table 4.26) was found as Factor 4 in this combined EFA (Table 4.42) for this sample. The second most prominent factor found in the EFA for only AAEIS items, Conflict Engagement, included five items (Items 3, 6, 10, 12, and 15). Apart from Item 6, for which a change in the direction of scoring was recommended in Table 4.26, in this combined EFA: Item 15 had a primary loading on Factor 6, Items 3 and 10 on Factor 10, and Item 12 on Factor 12. Thus, although Conflict Engagement items all loaded on the second strongest factor in in the EFA for AAEIS items, these items did not hold together and load on a single factor in this combined EFA.

The results of this additional, exploratory analysis were included in the discussion of conclusions, implications, and recommendations in Chapter 5.

Chapter 5

Conclusions, Implications, and Recommendations

Introduction

The first section of this Chapter contains a summary-like overview of this study's methodology, design, and procedures. The second section presents a summary of study results, organized by analysis and by research question. The third section contains the conclusions and inferences based on these results as they pertain to each of the research questions. Due to the fact that results of the additional, exploratory analysis were relevant to both Research Questions 1 and 2, those results were included in the presentation of conclusions and inferences for each of these research questions. The fourth section contains a discussion of study implications. This includes a comparison of results from this study to those reported by Funderburk (2002), those associated with the TEIQue-SF, and those presented in other studies of EI that were related to this study's accessible population, AAs. This section also includes a discussion of the implications of these results and conclusions for EI theory, notably how the salient dimensions of EI for this sample to compare to dimensions of EI apparent in multiple theories and frameworks (e.g., Table 1.2, p. 7). Further, this section ended with a discussion of the practical implications of these results and conclusions. The fifth section contains a review of study delimitations and limitations, with attention to the generalizability of study findings. The final sections of this chapter presents recommendations for research that follow from study delimitations and limitations, for future research, and for educational practices.

Summary of the Study

This study is based on the psychometric view of social intelligence that has its origins in E.L. Thorndike's (1914) division of intelligence into three facets: a person's ability to understand and manage ideas (abstract intelligence), concrete objects (mechanical intelligence), and people (social intelligence). In his classic formulation: "By social intelligence is meant the ability to understand and manage men and women, boys and girls -- to act wisely in human relations" (1920, p. 359).

There were two prominent aspects to the research problem in this study. First, despite the very large number of studies on EI, only 12 studies were located which involved only AA samples. Second, despite sizable number of measures of EI that have been developed and validated (Table 2.3, p. 56), only one was found which had been designed to measure EI among AA samples, notably adolescents.

In light of this, the primary purpose of this study was to assess and describe the conceptual and empirical dimensions of emotional intelligence (EI) within a sample of African-American college students. The second purpose was to explore the validity and reliability of that measure of EI that was developed for use with African-Americans: the African American Emotional Intelligence Survey (AAEIS; Funderburk, 2007). The third purpose of this study was to explore the extent to which selected demographic, familial, and experiential factors were able to predict EL scores on the AAEIS. Each of these purposes served as the basis for a separate research question.

The accessible population for this study included all African-American (AA) students enrolled in one state college located in Central Florida. This accessible

population included all AA students enrolled in this state college, of which 1,065 (66.3%) were female and 534 (33.2%) were male. Following approval from Florida Institute of Technology's IRB, and with permission from the Vice President of Academic Affairs of this state college, personnel in the Office of Planning and Assessment provided a list of all AA students on each campus. A modified stratified random sample of 534 AA students was invited to participate in this study: 50% of AA males (*n*=268) and 25% of AA females (*n*=266). This allowed a nearly equivalent number of invitations to be sent to male and female AA student. Completed surveys were returned by 70 students, which represents a 13.1% response rate: 16 males and 54 females.

The primary methodology in this study involved the use of survey research methods (Fink, 2006; Fowler, 2009). Two versions of this survey were developed and made available online using Qualtrics. Students receiving both versions were asked to complete a measure containing demographic and student-related items, Funderburk's measure of EI, the AAEIS (2007), and Landrine and Klonoff's (1996) *Schedule of Racist Events* (SRE). Half of the students received a version of this survey which also included the TEIQue-SF.

Funderburk's AAEIS was designed for individuals ages 13-19 in a variety of settings including educational, clinical, and research. She granted permission to use the AAEIS in this study (N. Funderburk, personal communication, December 6, 2017; Appendix A.1). The AAEIS consists of 20 items, and is based on the EI theories of Goleman (1998), as well as Mayer, Salovey, and Caruso (Mayer & Salovey, 1997). Those items are divided into two sections. The *Managing Emotions* section consists of 15

items, each of which was rated using a four-point self-reporting scale (1 = Almost Never, 4 = Almost Always). The *Perceiving Emotions* section consists of five items; in each, participants viewed pictures of human faces displaying varied emotions and were then asked to select the emotion best reflected in each picture using a multiple-choice format. The results of Funderburk's study indicated the AAEIS had face validity and content validity in that it appeared to measure EI by viewing the tests according to the focus groups and the content related to the construct as a whole.

Half of the students randomly assigned to one of the two groups were asked to complete a second measure of EI, the TEIQue Short Form (TEIQue-SF), developed by Petrides and his colleagues (Petrides & Furnham, 2001; Appendix B.6). Petrides granted permission granted to use the TEIQue-SF in this study (K. Petrides, personal communication, December 6, 2017; Appendix A.1). They were the first to develop a model and measure of trait EI, describing it as "a constellation of emotional self-perceptions located at the lower levels of personality" (Petrides, Pita, & Kokkinaki, 2007, p. 246). To establish the content and construct validity of their model and measure, Petrides and his colleagues conducted a content analysis of prominent EI models, and selected only core elements common to more than one of those models to create their trait EI sampling domain. The resulting trait model of EI consists of 15 facets of personality that are organized into five factors. The TEIQue-SF (Petrides, 2009) consists of 30 items from the original TEIQue, with two items for each of those 15 facets (Table 2.4, p. 63). A total of 42 students provided usable response on the TEIQue-SF.

Finally, the *Schedule of Racist Events* was based on results reported by Drati (2010), in this study all AA students who agree to participate were asked to complete Landrine and Klonoff's Schedule of Racist Events (SRE; 1996; Appendix B.8). The SRE is an 18-item scale measuring the frequency with which AAs have experienced specific racist events, and their appraisals of those events. Permission has been obtained to use the SRE in this study (E. Klonoff, personal communication, Oct. 1, 2019; Appendix B.3). Evidence indicates that the SRE is a unidimensional and construct-valid scale, and exhibits adequate convergent and discriminant validity (Klonoff & Landrine, 1999). High scores on Recent (R) and Lifetime (L) subscales indicate frequent exposure to racist experiences in the past year and over the course of a lifetime, respectively. High scores on the Stress Appraisal (SA) subscale suggest a substantial degree of stress associated with race-related experiences.

The data collection procedures used in this study followed from: (a) sampling procedures, notably how AA students on the campuses of this state college were randomly selected from the accessible population, invited to participate in this study, and randomly assigned to receive each version of the online survey; and (b) instrumentation, notably how the instruments described in the previous section was administered to students in each sub-sample.

Qualtrics was used to collect all responses, and all data collected from students on Qualtrics was copied or imported into SPSS. In the next step, invalid responses and incomplete response were removed (i.e., student records with more than 25% missing responses for any scale). Due to missing responses in the AAEIS multiple-choice items,

one participant was removed (*n*=69). In addition, due to missing responses in the SRE, a second data set was created in which eight additional participants were removed (*n*=61) (Table 4.3, p. 137). The *n*=69 data set was used in analyses for Research Questions 1 and 2, while both data sets were used in analyses for Research Question 3. Student records with less than 25% missing responses in all sections were retained, each student record was assigned an ID number, and imputation was used to fill in missing responses whenever possible. Items, subscales, and scales with the AAEIS, TEIQue-SF, and SRE were scored following procedures described in the Instrumentation section of Chapter 3. In addition, items in the opening section that were categorical were dummy coded (i.e., gender, and student engagement), while those that were ordinal and interval was identified as such in the Variable View within SPSS (e.g., age, father's and mother's education, family income).

The first of the preliminary analyses was a multivariate outlier analysis of responses on the AAEIS, TEIQue-SF, and SRE (Tabachnick & Fidell, 2013). Although several apparent outliers were identified in the *n*=69 and *n*=61 data sets, a careful review of them indicated that each reflected data from non-traditional students who were a normal part of the accessible population, so each was retained. The second preliminary analysis was used to check on multicollinearity among these scales in both data sets; none was found. Third, because factor analysis and regression analysis procedures were used to help answer the research questions, analyses were run to test Cohen et al.'s (2003) six underlying assumptions: (1) correct specification of the form of the relationship (i.e., linearity); (2) normality of the residuals; (3) constant variance of residuals (i.e., homoscedasticity); (4) correct specification of the independent variables in the regression

model; (5) reliable measurement of the independent variables; and (6) independence of residuals. These assumptions were met. Finally, Cronbach's alpha was used to check the reliability of these scales and subscales. These analyses were done for the total sample on that scale, as well as for male and female subsamples. The only reliability value which fell below .70 was for the AAEIS (*n*=69: .585; *n*=61 = .595).

The data analysis procedures for the first research question consisted of descriptive analysis of responses on each scale, including each sub-scale and all items. This was followed by a correlation analysis to determine the degree to which scores on these scales and subscales may be related. Each of these analyses were done for the total sample of respondents on that scale, as well as for male and female subsamples.

The second research question pertains to the validity and reliability of Funderburk's AAEIS. Cronbach's alpha has been run to determine the internal consistency of responses on that scale. Thus, primary attention focused on analyses of the validity of the AAEIS. This included correlation analyses to determine the extent to which the AAEIS is correlated to TEIQue-SF, scales and subscales (i.e., as indicators of its concurrent validity). It also included two EFAs to determine the construct validity of the AAEIS: (a) an EFA in which a six-factor solution was used to test the extent to which the results of that EFA corresponded to the six dimensions of EI within the AAEIS that had identified by the External Panel (Table 3.2, p. 116); and (b) a second open-ended EFA which allowed SPSS to identify the underlying dimensions of EI apparent in the data set, and which turned out to be a five-factor solution.

The third research question involved the use of multiple regression to explore the relationship of three sets of IVs to AAEIS total scores and to TEIQue-SF scores:

experiential items measured by the SRE (Set A), demographic and familial items (Set B), and academic items (Set C). As Cohen et al.'s (2003) regression assumptions had been met, these analyses were conducted. However, due to size of the sample and relationship of sample size to power, two rounds of regression analyses were conducted. In the first round, all three sets of IVs were included in the analysis for the two AAEIS and the TEIQue-SF data sets. Only those IVs which had a corresponding p value of $p < .20$ were retained for the second and final round of regression analyses. For the AAEIS and the n=69 data set this included three IVs, for the AAEIS and the n=61 data set this included two IVs, and for the TEIQue-SF and n=42 data set this included only one IV. The use of these results from this first round of regression analyses to reduce the number of IVs to only those that were statistically relevant allowed the post-hoc level of power for the final round of regression analyses to be maintained at 0.75.

One additional exploratory analysis was undertaken to shed further light on the results for Research Questions 1 and 2. This analysis involved the inclusion of Items 1-15 from the AAEIS and all 30 items from the TEIQue-SF in one combined EFA, and therefore was limited to only students who had completed both EI scales (n=42). For Research Question 1, the results of this EFA would offer additional insights into prominent EI characteristics of the study sample (factors and associated items). For Research Question 2, the results of this EFA was compared to the results of the five-factor EFA for only AAEIS (Table 4.26, p. 213), specifically whether the factor structure of the AAEIS for this sample would be similar to or different than the factor structure for this combined set of AAEIS and TEIQue-SF items for this sample.

Summary of Study Findings

Results for Research Question 1. Research Question 1 is stated as follows: What are the features of emotional intelligence among African-American college students at a public state college in Central Florida as determined by:

a. Funderburk's AAEIS
b. Petrides' TEIQue-Short Form (SF); and
c. Klonoff and Landrines' SRE?

For (1a), results was summarized for the entire sample (*n*=69), while for (1b), results was summarized for that subsample (*n*=42), and for (1c), results were summarized for the entire sample (*n*=69).

Results for Research Question 1a. Missing responses on the AAEIS are presented in Table 4.2 (p. 131). Only one participant was removed from the data set due to missing responses in the AAEIS, and those were found in the *Perceiving Emotions* section, reducing the sample to *n*=69. Although a multivariate outlier analysis indicated that two participant records may contain outliers (Table 4.6, p. 149), a more careful analysis indicated that those were not outliers, but rather apparent in the study's accessible population (Table 4.7, p. 149), so they were not removed from the data set. The AAEIS mean total score (*n*=69) was 48.29 (SD = 3.936) on a scale of 0-65. As the *Perceiving Emotions* section contains only five items and was worth up to five points, 60 of the 65 points in this total score reflect responses to the 15 items in the *Managing Emotions* section. The mean score for *Managing Emotions* was 45.53 (SD = 3.71). When this *Managing Emotions* sub-score is divided by the number of items used to calculate it,

the mean item score (or rating) was 3.03 (*Sometimes*).

A more careful review of mean item ratings in Table 4.10 (p. 156) indicted that these ranged from a low of 2.00 (Item 7; *Rarely*) to a high of 3.83 (Item 10; approaching *Almost Always*). However, the descriptive results in Table 4.10 differ from the EFA results presented in Table 4.26 (p. 213) in two important ways: (a) the assignment of items to dimensions or subscales in Table 4.10 (p. 156) was based on External Panel recommendations, while in Table 4.26 it was based on factor loadings in the EFA; and (b) the direction of scoring of items in Table 4.10 also reflects the recommendations of External Panel members, while in Table 4.26, those EFA results appeared to support a change in the direction of scoring for Items 6 and 7. These differences make it more difficult to clearly summarize and interpret these results, particularly those pertaining to Items 6 and 7. The AAEIS items with the highest mean ratings were Item 10 and Item 15 (3.80). These were two of the four items with a mean item rating above 3.50, all of which were reverse scored and included as Conflict Management (or Engagement) or Loss of Self-Control items (Table 4.26). The mean item ratings on these four items indicate that study participants tended to see themselves as not losing self-control or engaging in conflict. In Table 4.10, the AAEIS items with the lowest mean ratings were Item 7 and Item 5 (2.01), both of which were included among Conflict Avoidance items. These were two of the four items with a mean item rating below 2.5, two of which had been reverse scored (Items 7 and 12) and two of which had not (Items 5 and 6). However, based on results presented in (Table 4.26) notably adjustments to the factor assignment and direction of scoring of Items 6 and 7, two of these are Conflict Engagement Items, both

of which should be reverse scored (Item 6 and 12), and two are Conflict Avoidance item, both of which should be normally scored (Item 5 and 7). It is highly likely that if the direction of scoring for Items 6 and 7 was to be adjusted, the mean item rating for these two items would no longer fall below 2.5. In this case, the only mean item ratings to fall below 2.5 would be for Item 5 (i.e., a normally scored Conflict Avoidance item: 2.01, or *Rarely*), and Item 12 (i.e., a reverse scored Conflict Engagement item: 2.36: between *Rarely* and *Sometimes*). This low mean item rating for Item 5 indicates that participants would rarely avoid conflict if they felt bad when doing so. This low mean rating for Item 12 indicates that participants may think/feel that *Sometimes* they can tell what someone will be like before they get to know them.

The results of the five-factor EFA (Tables 4.25, p. 208, and 4.26, p. 213), appear to indicate that the two dimensions of EI which were most prominent in this sample were (a) *Conflict Avoidance* and *Self-Control* (4 items: R^2 increment = 16.8%), and (b) *Conflict Engagement* (5 items: R^2 increment = 12.5%). It is noteworthy that these results also indicated that two healthy dimensions of EI emerged as the next two factors in this analysis: (c) a *Willingness to Understand Others* (3 items: R^2 increment = 12.1%), and (d) a *Willingness to be Responsive to Others* (3 items: R^2 increment = 9.3%), although Item 11 loaded on both of these factors and included phrasing that could be interpreted as reflecting each of these factors. On a cumulative basis, these four factors accounted for 50.7% of the explained variance in this analysis.

Although the number of males (*n*=16) and females (*n*=53) in the study sample differed considerably, AAEIS responses were further analyzed to determine if there may

be differences in response between male and female participants. The results presented in Table 4.16 (p. 190) appear to indicate that there was little or no difference in AAEIS total scores, or in sub-scores for Items 1-15 and Items 16-20 for male and female participants. However, the results in Table 4.16 indicated that there were modest differences in mean item ratings for male and female participants on two subscales: Self Control (Male x = 3.20, and Female x = 2.95; difference = 0.25), and Empathy (Male x = 3.31, and Female x = 3.13; difference = 0.18). On both subscales, the mean item rating for males was greater than for females, although there may be a number of possible explanations for this (e.g., sample sizes; characteristics of males and females who chose to participate voluntarily).

Results for Research Question 1b. Of the 30 items in the Petrides' TEIQue-SF: (a) these items represent 15 dimensions of EI and therefore 15 pairs of items; (b) 15 items were positively worded and 15 were negatively worded (i.e., although some dimensions and pairs contained two positively or two negatively worded items) (Table 2.1, p. 49). In addition, on the basis of the psychometric properties, these 30 items were organized into four relatively distinct subscales, each of which contained six to eight items, although four items were not assigned to any subscale (i.e., Auxiliary Items).

Table 4.2 (p. 135) indicates that there were no missing responses on the TEIQue-SF. The summary of descriptive statistics for TEIQue-SF items is presented in Table 4.11 (p. 164). On a scale of 1 (*Completely Disagree*) to 7 (*Completely Agree*), the mean item response ranged from a low of x = 4.81 for the Emotionality subscale to a high of x = 5.48 for the Well-Being subscale. For three of these four subscales, the mean item

response was nearly equivalent, ranging from x = 4.81 to x = 4.88 (i.e., slightly above the response scale midpoint of 4). Thus, the higher mean item response on the Well-Being subscale was more than half a point higher. Although the four Auxiliary items do not represent a subscale, the mean item response on those items was x = 5.375, which is close to the mean item response for the Well-Being scale. The mean item responses exhibited a reasonable degree of variability across positively and across negatively worded items. Among the 15 positively worded items, the lowest mean item response was found on items 11 (Emotionality subscale) and 17 (Sociability subscale): x = 4.57, while the highest mean item response was found on items 9 and 20 (Well-Being subscale): x = 5.90. Among the 15 negatively worded items, the lowest mean item response was found on Item 7 (Self-Control subscale): x = 4.17, while the highest mean item response was found on Item 13 (Emotionality subscale): x = 6.21.

The descriptive results for male participants (*n*=11) and female participants (*n*=31) are similar to those for the total sample (i.e., there were minor differences in the magnitude of mean item responses). Mean item responses for both male and female participants were highest on the Well-Being subscale (Male x = 5.39, and Female x = 5.51), and lowest on the Emotionality subscale (Male x = 4.64, and Female x = 4.87).

***Results for Research Question 1c*.** The last scale in the online survey was the SRE. The SRE contains 17 prompts designed to reflect different kinds of experiences of racism. Each prompt is followed by three questions. The first two questions pertained to the relative frequency of that experience within the past year (Recent) and on a lifetime basis (Lifetime), with possible responses ranging from 1 = Never to 6 = Almost All of the

Time. The third question asks each participant to rate how stressful those experiences were (Stress Appraisal), with responses ranging from 1 = Not At All to 6 = Extremely. All 17 Recent items served as one subscale, all 17 Lifetime items a second, and all 17 Stress Appraisal items a third. Thus, the scores on each subscale could range from a low of 17 to a high of 102. Higher scores on the Recent and Lifetime subscales indicate more frequent exposure to racist experiences in the past year and over the course of a lifetime, respectively (Klonoff & Landrine, 1999; as cited in Greer, 2010).

As indicated in Table 4.2 (p. 135), there were between 8-10 participants with more than 25% missing responses, depending on the SRE subscale. In light of this, a decision was made to more carefully analyze the number of missing responses on the R and L subscales, and then to remove eight participants from one of the two data sets to be used in analyses for Research Question 3 (Table 4.3, p. 137). The resulting data set included 61 participants, and the removal of those eight records allowed the SRE-R and SRE-L sub-scale scores to be included as IVs in one of the preliminary regression analyses for this research question.

Overall, the average total score for the 17 items in the Recent (R) subscale was $x = 32.7$ (SD = 15.2), and the mean item rating for items in this subscale was $x = 1.98$ (Table 4.12, p. 169). Of the 17 items in the R subscale, nine had mean item ratings below 2.0 (*Once in a While*), and all 17 had mean item ratings below 3.0 (*Sometimes*). At least on this response scale, the relative frequency of participants' recent experiences of racism appeared to be limited (i.e., none of the mean items ratings approached 4: *A Lot*).

Further, the average total score for the 17 items in the Lifetime (L) subscale was x = 44.01 (SD = 18.77), and the mean item rating for items in this subscale was 2.58 (Table 4.12 p. 169). Of the 17 items in the L subscale, only one had mean item ratings below 2.0 (*Once in a While*), and an additional 13 had mean item ratings below 3.0 (*Sometimes*). On this response scale, the relative frequency of participants' lifetime experiences of racism was greater than their recent experiences of this. However, for the mean item ratings only three items were greater than 3.0 (*Sometimes*), and none approached 4.0 (*A Lot*).

The mean ratings for items in each subscale varied moderately across the *n*= 69 data set (i.e., from a low of 1.24 to a high of 3.55). More specifically, the lowest mean rating for items in both subscales was found on Item 14: Recent subscale x = 1.24, and Lifetime subscale x = .146 (i.e., between *Never* = 1 and *Once in a While* = 2). The highest mean rating for items in both subscales was found on Item 5: Recent subscale x = 2.98, and Lifetime subscale x = .355 (i.e., between 3 = *Sometimes*, and 4 = A Lot). Further, on all 17 pairs of items in the Recent and Lifetime subscales, the mean ratings for items in the Lifetime subscale were higher than for items in the Recent subscale. For the total sample, the smallest differences in mean ratings on paired Recent – Lifetime items were: .22 (Item 14) and .36 (Item 7), and the largest differences in these mean ratings were .92 (Item 1), .88 (Item 15), and .83 (Item 13).

Results for Research Question 2. Research Question 2 is stated as follows: To what extent is Funderburks' (2007) measure of emotional intelligence, developed specifically for African-American populations, valid and reliable for African-American college students at a public state college in Central Florida?

There are two sets of results pertinent to this research question: those pertaining to the reliability of the AAEIS, and those pertaining to its validity.

Reliability of the AAEIS. Several analyses were conducted to determine the reliability of items within the AAEIS. First, a Cronbach's alpha analysis was conducted for all 20 items within the AAEIS. This analysis was conducted using the *n*=69 and *n*=61unimputed data sets, primarily because the option to analyze pooled data within these imputed data sets was not available in SPSS. The resulting alpha level for those items in the *n*=69 data set was .585, and for the n=61 data set was .595. These alpha values fall below the acceptable range of at least .70 suggested by Nunnally (1978). In addition, to determine the manner in which these 20 items functioned within this scale and data set, Corrected Item-Total Correlations and Alpha-if-Item-Deleted analyses were conducted using this same *n*=69 data set. The results of these analyses are summarized in Table 4.20 (p. 197). For the Corrected Item-Total analysis: "If the alpha coefficient was LESS THAN .75 and there were items with a Corrected Item-Total Correlation of LESS THAN .30, then delete those items and rerun the Cronbach's alpha analysis" (https://www.scalestatistics. com/cronbachs-alpha.html). In this case, the alpha value was less than .75 (i.e., .585), and 16 of the 20 items in the AAEIS had Corrected Item-Total Correlation values less than .30 (i.e., each was below .26). These results call into question the reliability of AAEIS and its items.

Finally, for the Alpha-if-item-Deleted results in Table 4.20 (p. 197) five items had values which deviated more than 0.03 from the alpha value of 0.585 for the full scale. Only one item increased reliability when deleted: (Item 6) $\alpha = .629$ (i.e., an increase of

0.044). The remaining four items decreased reliability when deleted by the following magnitude: (Item 20) α= .106; (Item 17); α = .099; (Item 18); α = .071; and (Item 19) α= .063. In summary, only one item increased or decreased reliability by more than 0.1, and that was only by 0.106, so from an internal consistency perspective, none of the items in the AAEIS appear to detract from the reliability value for the scale as a whole.

Concurrent validity of the AAEIS. As discussed in Chapter 2, the theoretical framework used to design and validate the AAEIS was not well described. Further, the AAEIS had been used in only one previous study (Funderburk, 2007). One way of estimating or establishing the validity of a new measure of a psychological construct such as the AAEIS is to compare scores on that measure to scores obtained using a second, established and valid measure of that construct from the same sample (https://www.statology.org/concurrent-validity/). This is referred to as concurrent validity, and involves an analysis of the strength of the relationship between the scores on the established and new scales, in this case the TEIQue-SF and the AAEIS.

Due to uncertainty about the manner and extent to which these two instruments measured the same or similar dimensions of EI, the strength of relationship was determine for scores on each full scale as well as for scores on the AAEIS to each of the TEIQue-SF subscales (Table 4.21, p. 199). Of these, the best indicator of the concurrent validity of the AAEIS is the strength of its relationship to the TEIQue-SF: $r = .608$; $p < .000$ (Murphy & Davidshofer, 1998). Although few sources indicate either (a) the minimum *r* value needed to support a claim of concurrent validity, or (b) a framework which indicates whether this *r* value should be considered weak, moderate, or strong, this

r value appears to be moderate in strength. Further, the strength of the correlation between AAEIS Total Scores and scores on each of the TEIQue-SF subscales was stronger than $r = .525$ ($p < .000$), with the exception of the TEIQue-SF Self-Control subscale ($r = .287$, $p < .065$). This pattern was found for the relationship of AAEIS Items 1-15 to TEIQue-SF Total and Subscale scores, but not for AAEIS Items 16-20 and TEIQue-SF Total and Subscale scores.

The strength of the relationship between TEIQue-SF Total Scores and scores on each of the AAEIS subscales also was calculated. The strongest correlation was between scores on the TEIQue-SF and on the AAEIS Relationship Management subscale ($r = .556$, p. < 000). The next strongest of these correlation values, all of which were statistically significant, were between TEIQue-SF Total scores and: the Self & Social Awareness subscale ($r = .399$, $p < .011$), the Self-Control subscale ($r = .372$, $p < .015$), and the Empathy subscale ($r = .328$, $p < .034$). The External Panel agreed that items in three of these four subscales reflected health/adaptive dimensions of EI (Table 3.2, p. 116); the exception to this were items in the Self-Control subscale (Table 3.2, and Table 3.3, p. 118).

Construct validity of the AAEIS. The second method used to explore the validity of the AAEIS involved the use of Exploratory Factor Analysis (EFA). Two EFA analyses were conducted in SPSS using the n=69 unimputed data and Varimax rotation.
For the first EFA, a six-factor solution was used to test the extent to which the six Conceptual Dimensions (or subscales) within the AAEIS identified by the External Review Panel (Table 3.2, p. 116) coincided with these EFA results. Table 4.22 (p. 202)

presents the overall results of this analysis. Of these six factors, five had eigenvalues greater than 1, although the Eigenvalue for Factor 6 approached 1 (.959). The Cumulative Variance explained by the five factors with Eigenvalues greater than 1 was 57.43%, and for the full six-factor model was 65.37%. The results of the analysis of item loadings on these six factors are summarized in Table 4.23 (p. 203) Factor 2 had the second largest Eigenvalue (4.36) and contributed the second largest percentage of explained variance in the rotated matrix (9.7%). As in Factor 1, it is noteworthy that all eight of the items with a primary loading on Factor 1 were found in the TEIQue-SF: Items 1, 5, 6, 8, 15, 19, 21, and 23 (Table 4.42, p. 250). Further, all eight items (i.e., including Items 5 and 8 after reverse scoring), pertained to a cluster of healthy dimensions of EI. Within the TEIQue-SF, Items 8 and 23 both reflect the dimension). A comparison of the results of this six-factor EFA to the Conceptual Dimensions of the AAEIS identified by the Review Panel yielded mixed results. The closest match between EFA results and Conceptual Dimensions was found for the items in the Conflict Avoidance subscale: Items #2, #5, and #7 loaded on Factor 1. The next closest match was for items in the Conflict Management subscale: three of these four items loaded on Factor 3 (Items #3, 10, and 15). The remaining four Conceptual Dimensions and subscales contained two items, and none of those pairs of items loaded on the same factor. In summary, only two of the six conceptual dimensions reflected in items in the AAEIS matched closely to the underlying factor structure revealed by this EFA. Thus, the evidence in Table 4.23 (p. 203) does not provide sufficient evidence to support the construct validity of the AAEIS, but does not rule out its construct validity.

A second EFA was conducted without predetermining the number of factors for the purpose of identifying the underlying dimensions of EI apparent in responses to AAEIS Items 1-15 for this sample. Those results were nearly identical to those reported for the six-factor solution (Table 4.22, p. 202, and Figure 4.6, p. 202). Five factors with Eigenvalues greater than 1 emerged in this analysis. As a result, an EFA with a five-factor solution was conducted in an attempt to better understand the underlying factor structure of these AAEIS items. Table 4.24 (p. 207) presents the overall results of this analysis. All five factors had Eigenvalues greater than 1, and the cumulative variance explained by these five factors was 58.97%. An inductive approach was used to help determine how items with primary and additional loadings on each of these five factors may be related (i.e., what those items might have in common). The number of items which loaded on each of these five factors are summarized in Table 4.25 (p. 208).

The results of an in-depth inductive review and analysis of the results of this EFA are summarized in Table 4.26 (p. 213). One of the complications discovered during this review is that the External Panel's assignment of items to Conceptual Dimensions and recommendations on the scoring of items did not correspond to the results of this EFA for at least two items, Items 6 and 7. As a result, changes in the assignment of these items to factors and in the scoring of these items are included in this table.

The two most prominent factors to emerge in this EFA were Factors 1 and 2, and there appeared to be some relationship, if not overlap, between these two factors. Of the six items with a primary factor loading greater than 0.3 on Factor 1, four reflected *Self-Control and Conflict Avoidance* (Items 2, 4, 5, and 7). Further, of the six items with a

primary factor loadings greater than 0.3 on Factor 2, five reflected *Conflict Engagement* (Items 3, 6, 10, 12, and 15). As a result, the items associated with each factor were retained because they reflected that dimension of EI (Table 4.26, p. 213). This interpretation of items associated with Factors 1 and 2 presents each as both conceptually and empirically distinct. The next two prominent factors to emerge in this EFA were Factors 3 and 4. There also appeared to be some relationship, if not overlap, between these two factors. Of five items that had a primary factor loading greater than 0.3 on Factor 3, three reflected a *Willingness to Understand Others* (Items 8, 11, and 14). Further, of the three items that had a primary factor loading greater than 0.3 on Factor 4, all three appeared to reflect a *Willingness to be Responsive to Others* (Items 1, 9, and 11). The apparent difference between these two factors is subtle: the items which loaded on Factor 3 appear to emphasize a person's willingness to understand another person's thinking and feeling, while the items which loaded on Factor 4 went beyond this to include their willingness to be responsive to another's thinking and feeling. However, Item 11 appears to reflect aspects of both, so it not surprising that it loaded on both of these factors. In summary, the items associated with each factor were retained because they reflected that dimension of EI (Table 4.26, p. 213).

For the fifth and final factor, three items had factor loadings greater than 0.3 on Factor 5 (Table 4.25, p. 208). External Panel members agreed on the direction and scoring of these items: all were negatively worded and reverse scored. These EFA results indicate that two of these items, Items 1 and 13, focused on some loss of control over

one's feelings and/or thinking which contributed to some kind of impulsive act, which reflects *Loss of Self Control* as the emphasis of Factor 5 (Table 4.26, p. 213). Overall, the results of the five-factor EFA revealed five underlying dimensions of EI featured in AAEIS Items 1-15, particularly as those results pertain to this sample.

Results of preliminary analyses and additional data preparation for Research Question 3. Two data sets were prepared for Research Question 3: (a) this first had an *n*=69, and included seven independent variables (i.e., none of the subscales from the SRE); and (b) the second had an *n*=61, and included nine independent variables (i.e., the R and L subscales in the SRE). To ensure that the *n*=69 and *n*=61 data sets were ready for regression analysis, a number of steps were taken. Two of these involved analyses of outliers and multicollinearity. Using unimputed data sets and AAEIS scores as the DV, the results of these multivariate outlier analyses indicated that these data sets did not contain any outliers which needed to be removed (Tables 4.6, p. 151, Table 4.7, p. 149, and Table 4.8, p. 154). Using those same unimputed data sets, two multicollinearity analyses were conducted. The results from the analysis of the *n*=69 data set found that none of those VIF values were greater than 2, so there was no threat due to multicollinearity in this data set (Table 4.27, p. 222). The results from the analysis of the *n*=61 data set found that none of those VIF values were greater than 4.7, so there also was no threat due to multicollinearity in this data set (Table 4.28, p. 222).

In addition, a number of regression assumptions were checked: correct specification of the independent and dependent variables; correct specification of the independent variable in the regression model; reliable measurement of independent

variables; constant variances of the residuals (homoscedasticity); independence of residuals; normality of residuals (Cohen et al., 2003).

Correct specification of the regression model. In general, the correct specification of a regression model is a fundamentally important step in any regression analysis. Two of the more common problems associated with this step involve: (a) the inclusion of one or more independent variables (IVs) that are irrelevant from the perspective of theory and/or prior research; and (b) the exclusion of one or more IVs that are relevant from either perspective (Allen, 1997). Although features of EI theories and prior research studies were included in the design of this study and selection of IVs (e.g., age, gender, parental education and SES), this was primarily an exploratory study. In studies of this kind, it is difficult, if not impossible, to determine whether either of the model specification problems posed by Allen (1997) are apparent in this study. Thus, for the purposes of this study, this assumption may be considered either irrelevant or met.

Reliability of measures. With respect to the reliability of measures of IVs and the DV within the *n*=69 and *n*=61 data sets, nearly all of the IVs, whether nominal or ordinal, were single-item measures (i.e., Age, Gender, Number of Semesters, Student Engagement, Mother's and Father's Level of Education, Familial SES). There was no procedure for estimating the internal consistency of these measures. Further, the *n*=61 data set contained two multi-item ordinal IVs (i.e., SRE-R and SRE-L scores). However, SPSS does not include procedures for calculating Cohen's weighted kappa, a common test of reliability for multi-item ordinal measures. The resulting Cronbach's values for the reliability of these measures were toward the higher end of the acceptable range: SRE-R:

alpha = .920; and SRE-L: alpha = .944. Finally, Cronbach's alpha was used to estimate the internal consistency of responses on the AAEIS. The Cronbach's alpha value for the 20-item AAEIS using the *n*=69 data set was .585., and for the *n*=61 data set was .595. These alpha values fall below the acceptable range of at least .70 suggested by Nunnally (1978), indicating that the AAEIS is not as reliable as it could or should be, and therefore served as a limitation in this study.

Linear relationship between independent and dependent variables. The linear relationship between the entire set of independent variables and the dependent variable was analyzed using regression analyses. The first analysis was run using the *n*=69 data set, and included seven IVs as predictors of AAEIS Total Scores. A decision was made to have SPSS insert sample mean values for any missing responses. This was done to avoid the elimination of cases with one or more missing values, which would have decreased the sample in this analysis from 69 to 34 (i.e., nearly a 50% reduction in sample size). The scatterplot plot generated by this analysis was presented in Figure 4.7 (p. 226). The second analysis was run using the *n*=61 data set, including nine IVs as predictors of AAEIS Total Scores. As in the previous analysis, SPSS insert sample mean values for any missing responses. The scatterplot generated by this analysis was presented in Figure 4.8 (p. 226). Both plots indicated that there was no systematic patterning to the relationship between these residual and predicted values, indicating that the linearity assumption was met.

Normality of residuals. The analysis of the normality of residuals was used to determine whether the residuals in a regression model are normally or nearly normally

distributed. This is one of the main assumptions in linear regression analysis, because if the residuals are not normally distributed, then model inferences may be invalid. The SPSS linear regression option was used to generate a histogram of the residual by predicted values for the *n*=69 data set with seven IVs and AAEIS Total Scores as the DV. In this analysis, the option of filling in missing values with the sample mean was used. The results of this analysis indicated that the distribution of residuals was nearly normally distributed, with the exception of what appears to be one extreme value (Figure 4.9, p. 232). These results are supported by the results of univariate Kolmogorov-Smirnov and Shapiro-Wilk tests of normality of AAEIS Total Scores for this data set (Table 4.29, p. 228). The SPSS linear regression option was also used to generate a histogram of the residual by predicted values for the *n*=61 data set, again filling in missing values with the sample mean. The results of this analysis indicated that these residuals were nearly normally distributed (Figure 4.10, p. 229). These visual results were supported by the results of univariate Kolmogorov-Smirnov and Shapiro-Wilk tests of normality of AAEIS Total Scores for the *n*=61 data set (Table 4.29, p. 228). Overall, the results of these analyses indicated that the Normality assumption was met.

Independence of residuals. The Durbin-Watson statistic is used to detect autocorrelation of the residuals in a linear regression analysis. In general, a Durbin-Watson test statistic that falls between 1.5 – 2.5 is deemed acceptable (https://www.statology.org/durbin-watson-test/). However, tables of critical values have been developed for determining whether a particular Durbin-Watson statistic falls within the lower and upper limit of acceptable values. The Durbin-Watson option in the SPSS

Linear Regression analysis was used to analyze the *n*=69 data set, with the SPSS option to fill in any missing values in the DV or IVs with sample means. The Durbin-Watson results from the analysis using this data set was 1.44. However, in the table of critical values, the lower and upper limits for *n*=70 and 6 IVs were 1.313 and 1.611, indicating that this Durbin-Watson statistic fell within an acceptable range. The Durbin-Watson results from the analysis of the *n*=61 data set was 1.138, indicating these data were positively autocorrelated. However, using this same table of critical values, the lower and upper limits for *n*=60 and six IVs 1.248 and 1.598. Although this table did not contain lower and upper limits for nine IVs, as the number of IVs increases, this lower and upper limit decreases by approximately 0.04 for each IV, suggesting that the lower limit for nine IVs would be approximately 1.128. Using this extrapolated lower limit, it appears as if this Durbin-Watson statistic also falls within an acceptable range. In summary, although the Durbin-Watson statistic for the *n*=69 and *n*=61 data sets were positively autocorrelated, both statistical values appear to fall within an acceptable range, indicating that the Independence of Residuals assumption was met.

The final regression assumption pertains to the extent to which there is homogeneity of variance in residual values, i.e., homoscedasticity. In SPSS, this is tested by generating unstandardized and Studentized residual values using linear regression, and then graphing the two sets of values in a scatterplot. This assumption was tested using both the *n*=69 and *n*=61 data sets, insert sample means for any missing responses. The graph of these results were presented in Figure 4.11 (p. 231) and Figure 4.12 (p. 233), respectively. No clear pattern was apparent in either graph, so the *n*=69 and *n*=61 data

sets meets the regression assumption pertaining to homoscedasticity.

Results for Research Question 3. Research question three is stated as follows: To what extent are demographic, experiential, and other background factors of these African-American college students related to their EI scale and subscale scores as measured by:

a. Funderburk's AAEIS; and

b. Petrides' TEIQue-SF?

Post-hoc power analyses and adjustments to regression models. Post hoc power analysis is used to estimate the actual power of an observed effect based on the final sample size and parameter estimates for a given data set. When the post hoc level of power falls below recommended levels, one way to adjust or increase that level of power is to drop IVs that have little or no relationship to the DV from the regression model. As discussed below, it became necessary to make use of this procedure in this study.

The G*Power program was used to conduct these post-hoc power analyses. For Research Question 3a, this first post hoc power analyses were conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with AAEIS Total Scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 69, and number of IVs = 7. The SPSS option for imputing missing values with sample means was used. The results of this analysis indicated that the level of power (1-beta) = .5739, which fell below the recommended levels of .80 and even .70 (https://www.statisticssolutions.com/dissertation-resources/sample-size-calculation-and-sample-size-justification/statistical-power-analysis/). In this case, the level of power

appeared to be influenced by the relatively large number of IVs (7) for a sample of this size (*n*=69). To determine which of those seven IVs had little, if any, influence on the DV, AAEIS total scores, a Linear Multiple Regression analysis was conducted using all seven IVs. The results of that analysis were presented in Table 4.31 (p. 235). The results indicated that, overall, this regression model resulted in $R = .367$, and $R^2 = .135$. However, only three of the IVs had t values greater than 1.0 and an accompanying p value of $p < 0.2$: Father's Level of Education ($t = 1.999$, $p = .05$), Age ($t = 1.774$, $p = .081$), and Number of Terms Completed ($t = 1.445$, $p = .154$). In light of these results, a decision was made to retain only these three IVs for the regression analysis for the *n*=69 data set. When G*Power was used to calculate the power of the regression model which included only these three IVs, the level of post hoc power increased to .749, a more acceptable level. Therefore, the regression analysis for Research Question 3a using the *n*=69 data set included only three of the seven IV identified in initial plans for this analysis.

The G*Power program was used to conduct the second set of post hoc power analyses. These post hoc power analyses were also conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with AAEIS Total Scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 61, and number of IVs = 9. The SPSS option for imputing missing values with sample means was used. The results of this analysis indicated that the level of power (1-beta) = .4443. This level of power was lower than the level of power for the *n*-=69 data set when seven IV were included. To determine which of those nine IVs had little, if any,

influence on the DV, AAEIS total scores, a Linear Multiple Regression analysis was conducted using all nine IVs. The results of that analysis were presented in Table 4.32 (p. 236). The results indicated that, overall, this regression model resulted in R = .430, and R^2 = .185, and indicated that only two of the IVs had t values greater than 1.0 and an accompanying p value of p < 0.2: Age (t = 1.924, p = .06), and Father's Level of Education (t = 1.581, p = .12). Thus, a decision was made to retain only these two IVs for the regression analysis for the n=61 data set. When G*Power was used to calculate post hoc power for the regression model which included only these two IVs, the level of post hoc power increased to .755, a more acceptable level. Therefore, the regression analysis for Research Question 3a using the n=61 data set included only two of the nine IV identified in initial plans for this analysis.

Finally, the G*Power program was used to conduct the post hoc power analyses for Research Question 3b. These post hoc power analyses were conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with TEIQue-SF scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 42, and number of IVs = 9. The results of this analysis indicated that the level of power (1-beta) = .2784. To determine which of those nine IVs had little, if any, influence on the DV, TEIQue-SF Total Scores, a Linear Multiple Regression analysis was conducted using all nine IVs. The results of that analysis are presented in Table 4.33 (p. 239). The results indicated that, overall, this regression model resulted in R = .498, and R^2 = .248. However, these results also indicated that only one of the IVs had a t value greater than 1.0 and an accompanying p value of p < 0.2: Age (t = 2.128, p = .041). Thus,

a decision was made to retain only this one IV for the regression analysis for the TEIQue-SF *(n*=42*)* data set. When G*Power was used to calculate post hoc power for the regression model which included only one IV, the level of post hoc power increased to .6877, which is much closer to an acceptable level of power. Therefore, the regression analysis for Research Question 3b using the *n*=42 data set included only one of the nine IV identified in initial plans for this analysis.

Results for Research Question 3.a. For this research question, two Linear Multiple Regression analyses were conducted using SPSS. The first analysis used the *n*=69 data set, AAEIS Total Scores as the DV, and the three IVs identified in the previous section: Father's Highest Level of Education, Age, and Number of Terms Completed. These results indicated that the level of variance in the DV that was explained by these three IVs was .117 (F = 2.874, p = .043), which was statistically significant at the p = .05 level (Table 4.34, p. 240). The relative contribution of each IV to the results in Table 4.34 were summarized in Table 4.35 (p. 240). Of those three IVs, only Father's Level of Education was found to significantly contribute to an explanation of the variance in AAEIS Scores (*t* = 2.191, p = .032). In the presence of the other two IVs, for every 1-unit increase in Father's Level of Education, there is on average an associated 2.04 point increase in AAEIS Total Scores (B= 2.037).

For Research Question 3.a, the second Linear Multiple Regression analyses was conducted using SPSS. This analysis used the *n*=61 data set, AAEIS Total Scores as the DV, and the two IVs identified in the previous section: Father's Level of Education, and Age. These results were presented in Table 4.36 (p. 241) and Table 4.37 (p. 242). Only

Father's Level of Education was found to significantly contribute to an explanation of the variance in AAEIS Scores (t = 2.415, p = .019). Finally, in the presence of the other IV, for every 1-unit increase in Father's Level of Education, there is on average an associated 2.10 point increase in AAEIS Total Scores (B= 2.098).

Results for Research Question 3.b. For this research question, a third Linear Multiple Regression analyses was conducted using SPSS. This analysis used the n=42 data set, TEIQue-SF Total Scores as the DV, and the one IV identified in the previous section: Age. The results of this analysis were presented in Table 4.38 and Table 4.39 (p. 243). These results indicated that the level of variance in TEIQue-SF Scores explained by this IV was .121 (F = 5.487, p = .024), which was statistically significant at the p = .05 level. Additional results pertaining to this IV are summarized in Table 4.39. Consistent with results in Table 4.38, the contribution of Age to an explanation of the variance in TEIQue-SF Scores was statistically significant (t = 2.342, p = .024). Finally, for every 1-unit increase in Age, there is on average an associated .67 increase in TEIQUe-SF Total Scores (B= .664).

Results of the additional, exploratory analyses. For Research Question 2, the analyses of the dimensions of the AAEIS for this sample (Tables 4.10, p. 156, and 4.26, p. 213), coupled with Petrides' own analyses of the dimensions of the TEIQue-SF (Table 2.1, p. 49) indicate that these two instruments appeared to measure several common as well as several unique dimensions of EI. Further, the analyses for Research Questions 1 and 3 included two measures of EI: Funderburk's AAEIS, and Petrides' TEIQue-SF. In those analyses, descriptive and regression analyses were conducted using each of these as

a separate and distinct measure of EI. When these two EI instruments were treated separately, each offered some unique insights in salient characteristics and dimensions of EI for the sample in this study. To further explore the characteristics of EI for this sample and to determine which, if any, items from each instrument held relevant psychometric properties, specifically reflected the same underlying dimensions of EI, a decision was made to conduct one Exploratory Factor Analysis (EFA), with Varimax Rotation, to include items 1-15 from the AAEIS and all 30 items from the TEIQue-SF (i.e., all rating scale items). The data set used in this EFA included only those participants who responded to both measures of EI (*n*=42). The results of this EFA were summarized in Table 4.40 (p. 246).

This EFA identified a total of 12 factors with an Eigenvalue greater than 1, with a cumulative explained variance of 78.05% (Table 4.40). In addition, nine factors had an Eigenvalue greater than 1.5, with a cumulative explained variance of 64.68%. Further, five factors had an Eigenvalue greater than 2, with a cumulative explained variance of 43.22%. Finally, the single strongest factor, Factor 1, had an Eigenvalue of 10.97, and cumulative explained variance of 10.9%. The results for all 12 factors reflect the EFA objective of maximizing explained variance, while the results for one and five factors reflect the EFA objective of identifying the smallest number of most powerful factors. This EFA also generated a rotated component matrix for items from these two EI measures which loaded on these 12 factors, suppressing all loadings less than 0.3 (Table 4.41, p. 248). A review of these factor loadings revealed that for Factors 1-5 and 7, between four and eight items had the largest or primary factor loading on each factor,

while fewer items had a primary factor loading on Factors 6 and 8-12. In light of this, the items with a primary factor loading on each of these factors were identified in Table 4.42 (p. 250). This table also included an attempt to identify the dimensions of EI reflected in the items which loaded on each of these factors. In the interest of space, only the results for the larger and more influential factors, Factors 1-5 and 7, are summarized here.

Factor 1 had the largest Eigenvalue (10.97) and contributed the largest percentage of explained variance in the rotated matrix (10.9%). All six of the items with a primary loading on Factor 1 were found in the TEIQue-SF: Items 3, 9, 18, 20, 24, 27 (Table 4.42). Further, all six items (i.e., including Item 18 after reverse scoring), pertained to a cluster of what appear to be broad, healthy dimensions of EI. Within the TEIQue-SF, Items 9 and 24 reflect the dimension identified by Petrides as *positive sense of self-concept/esteem*, while Items 3 and 18 reflect the dimension identified as *personal motivation*. In addition, Item 20 reflects the dimension identified as *enjoys life*, and Item 27 reflects the dimension identified as *perspective on life* and reflects optimism. In summary, the results of this EFA for this sample of AA college students (n=42) indicated that Factor 1 represented a cluster of healthy dimensions of EI; this could only be identified through the use of an EI instrument which included items to measure these dimensions, such as the TEIQue-SF, as these dimensions were not included in and measured by the AAEIS.

Factor 2 had the second largest Eigenvalue (4.36) and contributed the second largest percentage of explained variance in the rotated matrix (9.7%). As in Factor 1, all eight of the items with a primary loading on Factor 2 were found in the TEIQue-SF:

Items 1, 5, 6, 8, 15, 19, 21, and 23 (Table 4.42, p. 250). Further, all eight items (i.e., including Items 5 and 8 after reverse scoring) also pertained to a cluster of healthy dimensions of EI. Within the TEIQue-SF, Items 8 and 23 both reflect the dimension identified by Petrides as *in touch with my feelings*. Further, Item 19 reflects the dimension *self-regulate emotions*, Item 15 reflects the dimension *cope with stress*, Item 1 reflects the dimension *express emotions*, and Item 5 reflects the dimension *enjoy life* (i.e., which may follow from self-regulation, coping ability, and/or expression). However, Items 6 and 21 reflect the dimension identified by Petrides as *deal with others*. In summary, the results of the EFA for this sample revealed that Factor 2 also reflected a cluster of healthy dimensions of EI, specifically those which pertained primarily to (a) their own emotions (6 items) and secondarily (b) to dealing constructively with others (2 items). Of these, only dimensions of EL reflected in (a) could only be identified through the use of an EI instrument which included items to measure these dimensions, such as the TEIQue-SF. Finally, for (b), Item 9 in the AAEIS resembles Items 6 and 21 in the TEIQue-SF, emphasizing the ability to negotiate with others. Despite this apparent similarity, Item 9 loaded on Factor 12 rather than Factor 2 in this EFA.

Factor 3 had the third largest Eigenvalue (3.388) and contributed the next largest percentage of explained variance in the rotated matrix (8.8%). Four items from the TEIQue-SF had a primary loading on this factor: 4, 12, 14, and 17. However, unlike Factors 1 and 2, three items from the AAEIS also loaded on this factor: 8, 11, and 14 (Table 4.42, p. 250). It was not entirely clear how these seven items may be related. Items 8, 11, and 14 in the AAEIS, and Item 17 in the TEIQue-SF all pertain to a *willingness to*

understand other people's viewpoint (Table 4.26, p. 213). For the three remaining TEIQue-SF items (Items 4, 12, and 14), all are negatively worded items and focus on one's own emotions. However, beyond this, it was not clear if these items may be related to the four *willingness* items or to each other (i.e., these three items align with different subscales and dimensions of EI in the TEIQue-SF). Item 4 reflects the dimension of EI identified by Petrides as *self-regulate emotion.* Item 12 reflects the dimension of EI identified as *perspective on life*. Item 14 reflects the dimension of EI identified as *adjust to life circumstances*. In summary, it appears as if the items with a primary loading on Factor included: (a) four items reflecting a healthy dimension of EI which emphasizes self-in-relationship and features one's willingness to understand others; and (b) three negatively worded items reflecting unhealthy dimensions of EI which emphasize one's own emotions.

Factor 4 had an Eigenvalue of 2.748 and contributed 7.7% percent to explained variance in the rotated matrix. Four items from the AAEIS had a primary loading on this factor: 2, 4, 5, and 6. All four of these items loaded on Factor 1 in the five-factor EFA for AAEIS Items (Table 4.26, p. 213). In addition, Item 10 in the TEIQue-SF also loaded on this factor. All five of these items emphasize self-in-relationship, and four items pertained to how individuals react to conflict and/or stand up for themselves. Although a change to reverse scoring was recommended for Item 6 in Table 4.26, there was no change in scoring prior to this EFA, which complicates interpretation of these results (e.g., if Item 6 had been reverse scored prior to this analysis, it may not have loaded on Factor 4). Item 4 is the only one of these five items that does reflect an explicit response to conflict. It

focuses on hiding it when mad (e.g., regulating or suppressing raw or strong emotions). In summary, the results of the EFA for this sample revealed that Factor 4 reflected a complex dimension of EI, specifically those which pertained how a person acts on their emotions, whether in response to their own raw emotions or in the context of conflict with others: in the form of avoidance (AAEIS Items 2, 4, and 5), assertiveness (TEIQue-SF Item 10), or aggression (AAEIS Item 6). This could only be identified through the use of an instrument which included items to measure these aspects of EI, in this case items in the AAEIS (i.e., as there was only two items in the TEIQue-SF which measured aspects of this, Items 10 and 25, only one of which loaded on this factor).

Factor 5 had an Eigenvalue of 2.559 and contributed 6.08% percent to explained variance in the rotated matrix. Four items had a primary loading on this factor, and all four of those items were reverse scored. This included Items 2, 16, and 28 in the TEIQue-SF, all of which were negatively worded. All three of these TEIQue-SF items are part of the Emotionality Subscale, but each reflects a different dimension of EI. Item 2 focuses on the difficulty of seeing things from *other peoples' viewpoint*, Items 16 on the difficulty in *expressing emotions*, and Item 28 on the difficulty of bonding with or *relating to others*. The only item from the AAEIS which had a primary loading on Factor 5 was Item 7. This item emphasizes Self-Control/Conflict Avoidance and pertains to how one reacts to avoid conflict. Although like the TEIQue-SF items, this item was reverse scored, the EFA results for the AAEIS appeared to support a recommendation that the scoring for Item 7 be changed from reverse to normal scoring (Table 4.26, p. 213).

In summary, the results of the EFA for this sample revealed that Factor 5 reflected at least one, and possibly two, dimensions of EI. The three items from the TEIQue-SF were included by Petrides in the Emotionality Subscale and all were negatively worded and reverse scored. However, the dimension of EI reflected in each of these items differed. It appears as if the direction of item wording and scoring, rather than apparent similarities in the dimension(s) of EI among items,

Factor 7 had an Eigenvalue of 1.787 and contributed 5.40% percent to explained variance in the rotated matrix. All four of the items which had a primary loading on this factor were negatively worded and reverse scored. This included Items 1 and 7 in the AAEIS; of these, Item 7 also loaded on Factor 5 in this EFA. In the AAEIS, Item 1 emphasizes Loss of Self-Control. In addition, Items 22 and 25 in the TEIQue-SF also loaded on this factor. Of these, Item 22, focuses on *mental clarity* (i.e., as it pertains to decisions to become involved in things), and Item 25 focusses on *standing up for yourself* (i.e., a tendency to back down). There were at least two ways of interpreting the loading of these four items on this factor. The first interpretation is that as in Factor 5, all four items are negatively worded. However, the four items which loaded on Factor 7 allowed for a comparison of the emphasis or meaning of each item from the perspective of EI. Two of these items, Item 1 in the AAEIS and Item 22 in the TEIQue-SF both appear to emphasize some type of regret after making what appear to be impulsive decisions (Item 1: spreading rumors about another; Item 22: getting involved in things). This aspect of EI is not given explicit attention in the dimensions of EI apparent in the AAEIS (Table 3.2, p. 116, and Table 4.26, p. 213), and is given limited attention in the dimensions of EI in

the TEIQue-SF (i.e., one *mental clarity* item). The remaining two items, Item 7 in the AAEIS and Item 25 in the TEIQue-SF both appear to emphasize a person's unwillingness to stand up for themselves. This dimension of EI is given prominent attention in the AAEIS in Self-Control and Conflict Avoidance items (Table 3.2, and Table 4.26), and is reflected in one or two of the dimensions of EI embedded in the TEIQue-SF: *stand up for myself* and possibly aspects of *self-regulate emotions* that pertains to self-control. However, it is unclear if and how these two aspects of EI may be related conceptually (regret over apparently impulsive decisions, and not standing up for one's self).

Conclusions and Inferences for the Research Questions

This section presents conclusions and inferences which pertain to each of the three research questions. It is important to note that the results of the exploratory EFAs presented in the previous section offer unique insights into the EI characteristics of this sample, and offer relevant insights in the construct validity of the AAEIS. For this reason, selected results from those exploratory EFAs were included in a presentation of conclusions and inferences for both Research Question 1 and Research Question 2.

Conclusions and inferences for Research Question 1. Research Question 1 is stated as follows: What are the features of emotional intelligence among African-American college students at a public state college in Central Florida as determined by:

a. Funderburk's AAEIS;
b. Petrides' TEIQue-Short Form (SF); and
c. Klonoff and Landrine's Schedule of Racist Events?

Conclusions and inferences for Research Question 1a. The descriptive analysis of responses to Items 1-15 in Funderburk's AAEIS were aggregated by subscale, and are summarized in Table 5.1 (p. 302). These results reflect the initial assignment of items to subscales and the initial direction and scoring of AAEIS items proposed by the External Panel (Table 3.2, p. 116), and does not reflect the final assignment and scoring of items derived from the EFA of AAEIS items (Table 4.26, p. 213). The results in Table 5.1 indicate that on four of these six subscales, the mean items rating was greater than 3.0 (*Sometimes*). Of these six subscales, Conflict Management items reflected the highest subscale item mean, and Conflict Avoidance the lowest. Consistent with these results, of the four items in the Conflict Management subscale the mean response for the three

Table 5.1

Summary of Descriptive Analyses of Responses to AAEIS Items 1-15, by Subscale (n=69)[1]

Subscale	No. Items	(Range (Lo – Hi) Item Mean Scores	Subscale Item Mean
Conflict Management/ Engagement	4	2.39 – 3.83	3.40
Relationship Management	2	3.14 – 3.31	3.21
Empathy	2	3.12 – 3.23	3.18
Self-Control	2	2.88 – 3.56	3.00
Self & Social Awareness	2	2.36 – 3.46	2.92
Conflict Avoidance	3	2.00 – 2.72	2.47

Notes. This summary is based on results presented in Table 4.16 (p. 190), specifically those for the *n*=69 data set prepared using multiple imputation, and reflect the reverse scoring of items deemed by the External Panel to be negatively worded. The response scale ranged from 1 = Almost Never to 4 = Almost Always.

negatively worded items ranged from 3.5 to 3.9 (i.e., above the midpoint between *Sometimes* and *Almost Always*), while the mean response for the positively worded item was less than 2.5 (i.e., below the midpoint between *Rarely* and *Sometimes*). Of the three items in the Conflict Avoidance subscale, two were positively and one was negatively worded. Despite this difference, the mean response on all three items ranged between 1.9 to 2.9 (i.e., from just below *Rarely* to just below *Sometimes*).

Overall, these results indicated that Conflict Management and Conflict Avoidance were prominent dimensions of EI for this sample (i.e., the highest and lowest mean item ratings, respectively), and that healthy dimensions of EI (i.e., Relationship Management, Empathy, Self & Social Awareness) fell between them (i.e., mean item ratings just above or below *Sometimes*).

Two EFAs were conducted for Items 1-15 in the AAEIS, using the n=69 data set. The first of these was a six-factor EFA which was used to test the extent to which the External Panel assignment of items to subscales would be supported by patterns among participant responses. The factor loadings for items in this EFA (Table 4.23, p. 203) did not correspond well to the assignment of AAEIS items to conceptual dimensions and subscales by the External Panel. There were partial matches between factor loadings in these EFA results and items assigned to the Conflict Avoidance and Conflict Management subscales, no apparent matches between EFA factor loadings and the External Panel's assignment of items to conceptual dimensions and subscales for the other four subscales. It is important to note that each of these four AAEIS subscales consisted of only two items, and this small number of items limits analyses and

interpretations of the psychometric properties of these subscales and items. These results raised serious questions about the results obtained from the External Panel (Table 3.2, p. 116) and their relevance to the psychometric properties of the items in the AAEIS.

To better understand the EI characteristics of this sample, a second EFA was conducted using the *n*=69 data set and without predetermining the number of factors. Those overall results were very similar to those reported for the six-factor solution. Five factors with Eigenvalues greater than 1 emerged. As a result, an EFA with a five-factor solution was conducted in an attempt to better understand the underlying factor structure of these AAEIS items. Of these five factors, all had Eigenvalues greater than 1, and the Cumulative Variance explained by these five factors was 58.97%. Four of those factors focused on self-in-relationship: (Factor 1) Self-Control and Conflict Avoidance, (Factor 2) Conflict Engagement (formerly Conflict Management), (Factor 3) Willingness to Understand Others, and (Factor 4) Willingness to be Responsive to Others. Only Factor 5 did not focus primarily on self-in-relationship; rather it appeared to focus on one's control and loss of control of their thinking, feeling, and/or acting (i.e., more of a focus on self). However, only two items had primary loadings on Factor 5, and the conceptual relationship between these items was less clear. Thus, the first four of these factors appear to capture the dimensions of EI that underlie and that are reflected in AAEIS Items 1-15, and therefore which characterize this sample.

It is noteworthy that Conflict Avoidance was the most prominent dimension of EI among these AAEIS items in this EFA, as this appears to be inconsistent with descriptive results based on External Panel comments (Table 5.1, p. 302), where Conflict Avoidance

items had the lowest mean item rating. On the other hand, Conflict Engagement was the second of the most prominent dimension of EI in this EFA, and this appears to be reasonably consistent with descriptive results based on External Panel comments (Table 5.1). Lastly, results in Table 4.26 (p. 213) indicated that several items loaded on both the Conflict Avoidance and the Conflict Engagement factor (e.g., Items 6 and 7), which appeared to reflect some confusion in how these items should have been scored, as well as some conceptual and empirical relationship between these two factors as dimensions of EI. Both of these factors, alone and in relationship, appear to reflect prominent dimensions of EI for this sample.

Conclusions and inferences for Research Question 1b. The 30 items in the Petrides' TEIQue-SF represent 15 dimensions of EI and therefore 15 pairs of items, of which 15 items were positively worded and 15 were negatively worded (i.e., although some dimensions and pairs contained two positively or two negatively worded items). In addition, these 30 items were organized into four relatively distinct subscales, each of which contained six to eight items, although four items were not assigned to any subscale (i.e., Auxiliary Items). These dimensions and subscales are relevant because they have been established through prior research and can be used to identify prominent EI characteristics of this sample.

The descriptive analysis of responses to items Petrides' TEIQue-SF were aggregated by subscale, and are summarized in Table 5.2 (p. 305). Of the five subscales in Table 5.2 four represent items that emphasize aspects of EI that pertain to one's self; only the *Sociability* subscale represents items that emphasize self-in-relationship, which

Table 5.2

Summary of Descriptive Analyses of Responses to TEIQue-SF Items, by Subscale (n=69)[1]

Subscale	No. Items	(Range (Lo – Hi) Item Mean Scores	Subscale Item Mean
Well-being	6	4.76 – 5.90	5.48
Auxiliary	4	5.00 – 5.74	5.38
Self-Control	6	4.17 – 5.40	4.88
Sociability	6	4.29 – 5.56	4.88
Emotionality	8	4.57 – 6.21	4.81

Notes. This summary is based on results presented in Table 4.17 (p. 192), specifically those for the *n*=69 data set prepared using multiple imputation. The response scale ranged from 1 = Completely Disagree to 7 = Completely Agree.

was prominent in the AAEIS. In Table 5.2, The highest mean item response was found on the *Well-Being* scale (x = 5.48 on a 7-point scale, with 7 = Completely Agree). Although the four *Auxiliary* items do not serve as a subscale, the two pairs of Auxiliary items represent Petrides' dimensions of *personal motivation* and *adjustment to life circumstances;* the mean item response on those items was x = 5.375. Thus, within the TEIQue-SF, these responses indicated a reasonably strong, positive perception of personal dimensions of EI within this sample. The mean item responses on each of the other three subscales were above the midpoint of 4 in this response scale, suggesting that participants in this sample perceived themselves as positive, although more moderate, on these dimensions or aspects of EI.

As indicated in Table 4.17 (p. 192), the descriptive results for male participants (*n*=11) and female participants (*n*=31) were similar to those for the total sample

summarized above (i.e., there were minor differences in the magnitude of mean item ratings). Due to the small sample size (*n*=42) and to a sizable difference in the number of male and female participants, these conclusions and any associated inferences should be considered soft, and explored in greater depth in future studies that involve larger samples.

Additional conclusions and inferences for Research Questions 1a and 1b. When the AAEIS and TEIQue-SF were treated separately, each offered unique insights in salient characteristics of EI for the study sample. What is less clear from those analyses is how the results obtain using AAEIS and the results obtained using the TEIQue-SF may compare. With this in mind, a combined EFA was conducted for Items 1-15 in the AAEIS and all 30 items in the TEIQue-SF, using the *n*=42 data set. In part, this was done as an additional, exploratory analysis to further identify prominent EI characteristics of the sample, particularly in light of differences apparent in these two measures: the AAEIS placed greater emphasis on aspects of EI related to self-in-relationship, while the TEIQue-SF placed greater emphasis on aspects of EI related to self. These differences were apparent in the results presented in the previous sections: using the AAEIS, *Conflict Avoidance* and *Conflict Management/Engagement* appeared to be prominent aspects of EI within this sample (self-in-relationship), while using the TEIQue-SF, Well-Being and Auxiliary Items (*personal motivation* and *adjustment to life circumstances*) appeared to be more prominent aspects of EI within this sample (self). Although the results of this EFA cannot be compared directly to the results of the five-factor EFA for the EFA due to differences in sample size and composition (*n*=69 vs. *n*=42), these results do offer some

relevant insights into EI characteristics of this sample.

This EFA identified a total of 12 factors with an Eigenvalue greater than 1, with a cumulative explained variance of 78.05% (Table 4.40, p. 246). Of those, nine factors had an Eigenvalue greater than 1.5, with a cumulative explained variance of 64.68%. This EFA generated a rotated component matrix for items from these two EI measures which loaded on these 12 factors, suppressing all loadings less than 0.3 (Table 4.41, p. 248). The interpretation of items from these EI measures which loaded on each factor was summarized in Table 4.42, p. 250).

Of those 12 factors, four factors included only items from the TEIQue (Factors 1, 2, 9, and 11). At the same time, only one factor included items from the AAEIS (Factor 12), although of the five items included in Factor 4, four were from the AAEIS. In addition, as can occur in EFAs, four factors included only items which had been reverse scored (Factors 5, 7, 8, and 10). There were no multi-item factors which included only positive worded items which were scored normally. Further, four factors included only one or two items (Factors 6, 8, 9, and 12), and the small number of items in each of these factors made it difficult to interpret the dimensions and/or directions apparent in those items with any clarity. Finally, several factors included items which either reflected two or more dimensions of EI, or which included items that could be interpreted from the perspective of dimensions and/or direction (Factors 3, 7, 10, and 11).

Despite these patterns and limitations, several findings which emerged from this analysis offered relevant insights into EI characteristics of this sample. Factors 1 and 2 included only TEIQue-SF items, all of which emphasized healthy dimensions or aspects

of EI. All but two of these 14 items reflected a positive sense of self (i.e., in Factor 2, Items 6 and 21 reflected self in relationship). Factor 3 included multiple items from the TEIQue-SF and from the AAEIS. Although it was not clear how these seven items may be related, these items appeared to reflect two distinctly different dimensions of EI: (a) these AAEIS items and one TEIQue-SF item pertained to a *willingness to understand other people's viewpoint* (Table 4.26, p. 213); and (b) the other TEIQue-SF items were all negatively worded items that focus on one's own emotions.

Finally, of the most prominent factors found in the EFA for AAEIS items, the first focused on *Conflict Avoidance/Self-Control*, and the second on *Conflict Engagement* (Table 4.26; *n*=69). By comparison, in this combined EFA, Factor 4 included three *Conflict Avoidance/Self-Control* items and one *Conflict Engagement* item from the AAEIS, along with one item from the TEIQue-SF. It is noteworthy that the first and most prominent factor found underlying the AAEIS, *Conflict Avoidance/Self-Control*, included items which loaded on Factor 4 in this combined EFA. It was equally noteworthy that the items associated with the second most prominent factor underlying the AAEIS, *Conflict Engagement*, did not hold together and load on a single factor in this combined EFA. Thus, although the sample size in the EFA for AAEIS items and for this combined EFA differed, these combined EFA results appear to suggest that healthy dimensions of EI which pertain to self, reflected primarily in TEIQue-SF items, were more prominent EI characteristics for this sample, than were the more complex, conflict-oriented dimensions of EI which pertain to self-in-relationship, reflected primarily in AAEIS items.

Conclusions and inferences for Research Question 1c. This part of Research Question 1 is somewhat different, primarily because the Klonoff and Landrine's Schedule of Racist Events (SRE) is not a direct measure of EI. The SRE contains 17 prompts designed to reflect different kinds of experiences of racism. Each prompt is followed by three questions. The first two questions pertain to the relative frequency of racist experience within the past year (Recent) and on a lifetime basis (Lifetime), with possible responses ranging from 1 = *Never* to 6 = *Almost All of the Time*. The third question asks each participant to rate how stressful those experiences were (Stress Appraisal), with responses ranging from 1 = *Not At All* to 6 = *Extremely*. All 17 Recent items served as one subscale, all 17 Lifetime items a second, and all 17 Stress Appraisal items a third. Thus, the scores on each subscale could range from a low of 17 to a high of 102. Higher scores on the Recent and Lifetime subscales indicate more frequent exposure to racist experiences in the past year and over the course of a lifetime, respectively (Klonoff & Landrine, 1999; as cited in Greer, 2010).

Relative to this Research Question, results of this study indicated that this distinction between the SRE and the other measures of EI was relevant, due in part to the fact that all correlations between SRE-R and SRE-L subscale scores to the AAEIS (Table 4.18, p. 194), and to the TEIQue-SF (Table 4.19, p. 195) were weaker than $r = 0.12$. The SRE is designed to measure accumulated exposure to and experience of different types of racism on both a recent (R) and lifetime (L) basis, which may serve as an indicator or of influence upon aspects of EI. Consistent with this, higher scores on the Self Appraisal scale suggest a substantial degree of stress associated with race-related experiences

(Klonoff & Landrine, 1999; as cited in Greer, 2010). Descriptive results for all three SRE subscales are presented in Table 4.12 (p. 169). The average score on the 17 items in the R subscale was x = 32.7, and the mean item rating for items in this subscale was 1.92 (i.e., just below *Once In a While*). This suggests that participants did have recent experiences, although appeared to be relatively infrequent. The average score on the 17 items in the L subscale was x = 44.01, and the mean item rating for items in this subscale was 2.58 (i.e., between *Once In a While* and *Sometimes*). This indicates that participants had a greater number of experiences over their lifetime, although these results do not indicate whether this reflects a similar frequency of experiences over a longer period of time or a greater frequency in earlier years. When compared, the mean ratings for items in the Lifetime subscale were higher than for items in the Recent subscale. Responses to items in the Self Appraisal (SA) subscale were treated differently than on the R and L subscales for two reasons: (a) the use of a different response scale for items in this subscale: 1 = *Not At All*, and 6 = *Extremely*; and (b) the large number of number of missing responses in the SA subscale. The average score on the Self Appraisal subscale was x = 49.2. The mean ratings for items in this subscale varied moderately across the data set for the Total Sample, from a low of 1.92 (where 2 = *Once in a While*) to a high of 3.39 (where 3 = *Sometimes*, and 4 = *A Lot*). The lowest mean item rating was found on Item 14: x = 1.92, which focused on being "forced to take drastic steps … to deal with some racist thing done to you." The highest mean ratings, greater than x = 3.3, were found on four items: Item 2 ("been treated unfairly by your *employers* … because you were black"), Item 6 ("been treated unfairly by *people in helping positions*"), Item 10 ("*accused or suspected*

of doing something wrong"), and Item 13 ("*been really angry about something racist … done to you*"). The item with the closest conceptual relationship to EI was Item 13.

Conclusions and inferences for Research Question 2. Research Question 2 is stated as follows: To what extent is Funderburk's (2007) measure of emotional intelligence, developed specifically for African-American populations, valid and reliable for African-American college students at a public state college in Central Florida?

Conclusions and inferences pertaining to the reliability of the AAEIS. Several analyses were conducted to determine the reliability of items within the AAEIS. First, a Cronbach's alpha was calculated for all 20 items in the AAEIS for both the *n*=69 and *n*=61 unimputed data sets, primarily because the option to analyze pooled data within these imputed data sets was not available in SPSS. The resulting alpha level for those items in the *n*=69 data set was .585, and for the n=61 data set was .595. These alpha values fall below the acceptable range of at least .70 suggested by Nunnally (1978). Second, results of the Corrected Item – Total Correlation indicated that 16 of the 20 items in the AAEIS had values below .26 (Table 4.20, p. 197). These two sets of results called into question the reliability of AAEIS and its items.

However, for the Alpha-If-Item-Deleted analysis, only one item increased or decreased reliability by more than 0.1, and that was only by 0.106 (Table 4.20, p. 197), so from an internal consistency perspective, none of the individual items in the AAEIS appeared to detract from the overall level of reliability of the AAEIS as a measure.

Conclusions and inferences pertaining to the validity of the AAEIS. The validity of the AAEIS was explored in two ways. The first involved a comparison of AAEIS and TEIQue-SF scores and subscale scores for the purpose of estimating the concurrent validity of the AAEIS.

The second involved exploratory factor analyses (EFAs) of Items 1-15 in AAEIS for the purpose of identifying the underlying factor structure of the AAEIS. These EFA results can be compared to: (a) the dimensions of EI models which Funderburk consulted when constructing the AAEIS, notably Goleman (1995) and Mayer, Salovey, and Caruso (1997); (b) the dimensions of EI which the External Panel identified (Table 3.2, p. 116); and (c) the dimensions of EI which emerged from the additional, exploratory EFA conducted using both AAEIS and TEIQue-SF items. These analyses and comparison were carried out for the purpose of estimating the construct validity of the AAEIS.

Conclusions and inferences pertaining to the concurrent validity of the AAEIS. The concurrent validity of the AAEIS was estimated by analyzing the strength of the relationship between the scores on an established, valid scale and on a new scale, in this case the TEIQue-SF and the AAEIS. The best indicator of the concurrent validity of the AAEIS was the strength of the relationship of AAEIS Total scores and TEIQue-SF Total scores: $r = .608$; $p < .000$ (Murphy & Davidshofer, 1998). The strength of the correlation between AAEIS Total Scores and scores on each of the TEIQue-SF subscales was stronger than $r = .525$, with the exception of the TEIQue-SF *Self-Control* subscale ($r = .287$, $p < .065$). This pattern was found for the relationship of AAEIS Items 1-15 to TEIQue-SF Total and Subscale scores, but not for AAEIS Items 16-20 to TEIQue-SF Total and Subscale scores.

Although there appear to be few sources which indicate either the minimum *r* value needed to support a claim of concurrent validity, these *r* values appears to be moderate. To the extent this is a fair and appropriate interpretation, these correlation values do not provide strong evidence of the concurrent validity of the AAEIS. At the

same time, these correlation results may reflect previously reported results which indicate that AAEIS items tended to emphasize dimensions of EI that pertain to self-in-relationship, while TEIQue-SF items tended to emphasize dimensions of EI that pertain to self (i.e., that these two measures of EI tend to emphasize and measure different dimensions of EI). From this perspective, one may question whether the TEIQue-SF served as a fair basis on which to judge the concurrent validity of the AAEIS.

Conclusions and inferences pertaining to the construct validity of the AAEIS. Two types of evidence is commonly sought to establish the construct validity of a measure such as the AAEIS: convergent, and divergent or discriminant. The former requires that scores on that measure, are consistent with scores on a similar measure, while the latter requires that scores on the measure do not correlate with or diverge from those with scores on a dissimilar measure. Of these, evidence of convergent validity was collected in this study.

Several analyses were used to determine the convergent validity of the AAEIS. These included: (a) the initial analysis of the AAEIS by the External Panel; (b) a six-factor EFA used to test the results obtained from that External Panel; (c) an open-ended EFA to identify the underlying dimensions of EI apparent in the AAEIS; (d) a comparison of the results of that open-ended EFA to results of a combined EFA which included items from the AAEIS and TEIQue-SF; and finally (e) a comparison of these EFA results to the dimensions of EI included in models or frameworks developed by Goleman (1995), Mayer, Salovey, and Caruso (1997), as well as other prominent EI theorists.

For (a), the External Panelists tended to agree that there were six relatively distinct dimensions of EI within the AAEIS (Table 3.2, p. 116). These included: Conflict Avoidance and Conflict Management, Self-Control, Self and Social Awareness, Assessment of Others, Empathy, and Communicate/Collaborate (with others). Among these Panelists, there was less disagreement about the assignment of items to dimensions than about the direction of item wording and scoring (i.e., specifically for Items 5, 6, and 7). These disagreements about item wording and scoring underscored differences about what Panelists perceived to be, and therefore what could or should be considered, healthy versus unhealthy dimensions of EI for African-Americans (Table 3.3, p. 118, and Table 3.4, p. 119). In general, Table 3.2 indicates that the dimensions of EI which Panelists found in the AAEIS corresponded to at least three of the conceptual dimensions of EI identified by Goleman (1998), notably Empathy, Social Skills, and Self-Regulation (Figure 1.1, p. 4, and Table 1.2, p. 7). The six dimensions of EI identified by Panelists were used to assign AAEIS items to subscales and therefore used to develop subscale scores, and later were tested using the six-factor EFA.

For (b), rather than assume that the six conceptual dimensions of EI identified by Panelists would be supported by empirical evidence, a six-factor EFA was conducted (n=69). Of these six factors, five had Eigenvalues greater than 1, although the Eigenvalue for Factor 6 approached 1 (.959). However, the results of the Varimax Rotation in which AAEIS items were assigned to factors were less clear, both on their own and in comparison to the six conceptual dimensions identified by the Panelists (Table 4.23, p. 203). There were partial matches between EFA results and the Panel's conceptual

dimensions for: (a) Conflict Avoidance items (three items: Items 2, 5, and 7); and (b) Conflict Management items (four items: Items 3, 6, 10, and 15). However, there were no such matches between these EFA results and the other four conceptual dimensions of EI identified by the External Panel. However, each of these four AAEIS subscales consist of only two items, and this small number of items limits analyses and interpretations of the psychometric properties of these subscales and items. Nonetheless, as a whole, the results of the six-factor EFA did not correspond well to the conceptual dimensions identified by the Panel in a clear and coherent manner (i.e., for only two of the six conceptual dimensions).

For (c), an open-ended EFA was conducted without predetermining the number of factors, and the results are nearly identical to those reported for the six-factor solution (Table 4.22, p. 202, and Figure 4.6, p. 202). Five factors with Eigenvalues greater than 1 emerged, and on a cumulative basis, they explained 57.42% of the variance in participant responses on AAEIS Items 1-15. Overall, the results of this five-factor EFA provided reasonable clarity about the dimensions of EI which underlie these 15 items (Table 4.26, p. 213). The two factors with the largest eigenvalues, the greatest percent of explained variance, and the largest number of items were: (Factor 1) Self-Control and Conflict Avoidance (four items); and (Factor 2) Conflict Engagement, which was referred to by External Panelists as Conflict Management (five items). The factors with the next largest eigenvalues, percent of explained variance, and number of items were: (Factor 3) a Willingness to Understand the Perspective of Others, notably their thinking and feelings (three items); and (Factor 4) a Willingness to be Responsive to the Perspective of Others,

a more active and observable process (three items). Finally, three negatively worded items loaded on Factor 5, although only Items 1 and 13 appeared to emphasize a Loss of Self-Control (i.e., of thinking/feeling and involvement in impulsive actions).

Of these, Factors 1 and 2 were apparent in the results of (a) the External Panel review, and prominent in (b) the six-factor EFA used to test those results. These results are consistent (converge), indicating that these two factors are prominent dimensions of the EI construct within the AAEIS. Further, each the three items which loaded on Factor 3 in this open-ended EFA (a) were assigned by the External Panel to different subscales (Table 3.2, p. 116). However, two of those three items loaded on (b) Factor 2 in the six-factor EFA (Items 8 and 14; Table 4.23, p. 203). The comparison of results for Factor 4 in this open-ended EFA indicated that of the three items associated with this factor (Table 4.26, p. 213), (a) the Panel assigned Items 1 and 11 to the Empathy subscale (Table 3.2), although all three of these items (b) loaded on different factors in the six-factor EFA (Table 4.23). Finally, even though the results of the open-ended EFA did not provide strong support for Loss of Control as a distinct factor (Table 4.26), these same comparisons were conducted. Although the two items retained for Factor 5 in this open-ended EFA (a) were assigned by the External Panel to different subscales (Table 3.2, p. 116), (b) these were the only two items which loaded on Factor 6 in the six-factor EFA (Table 4.23, p. 203). Although there is some degree of consistency across these sets of results, there is less consistency (convergence) across results for Factors 3, 4, and 5 than was found for Factors 1 and 2.

For (d), a final EFA was conducted by combining for Items 1-15 in the AAEIS and Items 1-30 in the TEIQue-SF. In part, this was done to determine the extent to which items from each instrument which appear to be related would load on the same factor and, more generally, reveal the underlying dimensions of EI which were prominent within this sample. This combined EFA identified 12 factors with an Eigenvalue greater than 1.0, explaining a total of 78.05% of the variance in this rotated matrix (Table 4.40, p. 246). As summarized in Table 4.42 (p. 250), four of those 12 factors included only items from the TEIQue-SF (Factors 1, 2, 9, and 11). Only one factor included only items from the AAEIS (Factor 12), although of the five items included in Factor 4, four were from the AAEIS. In addition, four factors included only items which had been reverse scored (Factors 5, 7, 8, and 10). There were no multi-item factors which included only items which were positively worded and therefore scored normally. Further, four factors included only one or two items (Factors 6, 8, 9, and 12), and the small number of items in each of these factors made it more difficult to interpret the dimensions and/or directions apparent in item phrasing with any clarity. Finally, several factors included items which either reflected two or more dimensions of EI, or which included items that could be interpreted from the perspective of dimensions and/or direction (Factors 3, 7, 10, and 11).

A comparison of results from the open-ended EFA for the AAEIS to the results from this combined EFA is somewhat limited due to differences in sample size (i.e., n=69 for the former, and n=42 for the latter, a subset of the former). Despite this limitation, several important findings emerged from this analysis. First, from the perspective of this combined EFA, Factors 1 and 2, included only TEIQue-SF items, all of which

emphasized healthy dimensions of aspects of EI, and all but two of which reflected a positive sense of self (i.e., rather than self in relationship with others). Although none of the AAEIS items had a primary loading on either of these factors, three items in the AAEIS appeared to be related to Petrides' dimension of EI reflected in these factors. This comparison of open-ended vs. combined EFA results indicates that the TEIQue-SF measures dimensions of EI that are either missing or given limited attention in the AAEIS, notably healthy dimensions of EI that focus on one's self (i.e., rather than self in relationship). Second, from the perspective of the open-ended EFA for only AAEIS items, of the most prominent factors, the first focused on Self-Control/Conflict Avoidance, and the second on Conflict Engagement (Table 4.26, p. 213). In this combined EFA, three Self-Control/Conflict Avoidance items (Items 2, 4, 5) and one Conflict Engagement item (Item 6) from the AAEIS, along with one item from the TEIQUe-SF (Item 10) had a primary loading on Factor 4. Thus, the most prominent factor found underlying AAEIS items (Table 4.26) only appeared as Factor 4 in this combined EFA (Table 4.42, p. 250). The second most prominent factor found in the open-ended EFA for AAEIS items, Conflict Engagement, included five items (Items 3, 6, 10, 12, and 15). Apart from Item 6, for which a change in the direction of scoring was recommended (Table 4.26, p. 213), in this combined EFA: Item 15 had a primary loading on Factor 6, Items 3 and 10 on Factor 10, and Item 12 on Factor 12. Thus, although Conflict Engagement items all loaded on the second strongest factor in in the EFA for AAEIS items, these items did not load together and load on a single factor in this combined EFA(i.e., Items 3, 10, 12, and 15 loaded on three different factors).

This comparison indicates that although Conflict Avoidance and associated aspects of Self-Control were the most prominent factor in the open-ended EFA of AAEIS items, this factor was relegated to the position of Factor 4 in the combined EFA. Factor 2 in the open-ended EFA of AAEIS items, Conflict Engagement, did not hold together as one separate and distinct factor in the combined EFA. These results indicate that although Conflict Avoidance and Conflict Engagement account for nine of the 15 items in the AAEIS, they may have been given too much attention in the AAEIS, by over-emphasizing dimensions of EI which feature self-in-relationship, and particularly those which involve conflict. This comparison of open-ended EFA results for the AAEIS against combined EFA results for the AEEIS and TEIQue-SF point appear to help to clarify which dimensions of EI are featured or emphasized in the AAEIS, and which are under-represented in the AAEIS.

For (e), these EFA results were compared to the dimensions of EI included in models or frameworks developed by Goleman (1995), Mayer, Salovey, and Caruso (1997), as well as other prominent EI theorists (Table 1.2, p. 7). It appears as if Funderburk (2007) relied primarily on Goleman's model and framework. The five main components of EI in Goleman's (1998) model (Figure 1.1, p. 4) appear to correspond to the factors from the open-ended EFA to differing degrees. Factor 1, Self-Control and Conflict Avoidance, appears to correspond to Goleman's Self-Regulation and Social Skills components. Factor 2, Conflict Engagement, also appears to correspond to those two components, although the items associated with this factor are negatively worded, so they reflect the unhealthy aspects of those components. Factor 3, a Willingness to

Understand Others, and Factor 4, a Willingness to be Responsive to Others, both appear to correspond to Goleman's Empathy component. Further, similar to Factor 2, Factor 5, Lack of Self-Control, also appears to correspond to Goleman's Self-Regulation and Social Skills components, but they also reflect the unhealthy aspects of those components. Thus, it appears as if all five factors associated with the AAEIS (Table 4.26, p. 213) reflect three of Goleman's main components. However, this also means that two of Goleman's main components are not reflected in these results and, by extension, in AAEIS items: Self-Awareness, and Motivation. This conclusion is supported by the results of the combined EFA (Table 4.42, p. 250). Those results indicated that the first two factors to emerge in the combined EFA: (a) did not include any items from the AAEIS (i.e., only items from the TEIQue-SF); and (b) tended to reflect dimensions of EI which pertained to self (i.e., rather than self-in- relationship), notably well-being and motivation. These results indicate that Goleman's Self-Awareness and Motivation components were prominent features of EI within the sample but received little attention among AAEIS items. In summary, results indicate that the AAEIS reflects three of the five main components of EI in Goleman's model, but not the other two components.

It also appears as if Funderburk (2007) relied on Mayer, Salovey, and Caruso's trait model and framework. Their model has four branches or major components: *perceiving/identifying emotion, assimilation of emotions, understanding emotions, and managing emotions* (Table 1.1, p. 5). An analysis of those components indicated that while each emphasize dimensions of EI that pertained to one's self, at least three components also applied to self-in-relationship (Table 1.2, p. 7). Their *perceiving/*

identifying emotions and *understanding emotions* components appeared to apply one's own emotions and to the emotions of others. The latter indicates that these components appear to reflect Factors 3 and 4 in the open-ended EFA for the AAEIS (Table 4.26, p. 213). Further, their *managing emotions* component appears to apply to managing one's emotions, both on their own and in relationship to others (i.e., aspects of self-regulation). The latter indicates that this component appears to reflect Factors 1, 2, and 5 in the open-ended EFA for the AAEIS (Table 4.26), although Factors 2 and 5 reflect unhealthy aspects of this major component. In summary, results indicate that the AAEIS reflects three of the four major components of EI in the Mayer, Salovey, and Caruso model, but (a) only the self-in-relationship aspects of those three components; and (b) not the fourth major component, *assimilation of emotions*.

In summary, the AAEIS appears to reflect three of the five main components in Goleman's model and three of the four major components of the Mayer, Salovey, and Caruso model which emphasize self-in-relationship (i.e., understanding others and regulating emotions as part of interactions with others). The analysis presented in Table 1.2 (p. 7) indicated that either or both of these aspects of EI are featured in models and frameworks developed by Petrides (2009), Schutte (2008), and Bar-On (2006).

When the summary of evidence for (a) through (e) presented here is reviewed to determine the extent to which supports conclusions regarding the construct validity of the AAEIS, two conclusions emerge. This evidence on the convergent dimension of construct validity indicates that the AAEIS appears to be construct valid as a measure of dimensions of EI which emphasize self-in-relationship, notably empathy and

responsiveness toward others, and self-regulation of emotions and associated behaviors associated with others. At the same time, this evidence indicates that the AAEIS is not construct valid as a measure of those dimensions of EI which emphasize self, notably well-being and motivation.

Conclusions and inferences for Research Question 3. Research Question 3 is stated as follows: To what extent are demographic, experiential, and other background factors of these African-American college students related to their EI scale and subscale scores as measured by:

(a) Funderburk's AAEIS; and

(b) Petrides' TEIQue-SF?

These analyses began with the preparation of the data sets, specifically the identification of missing responses within the *n*=69 data set. Although the missing responses for these predictor variables was found to be missing MCAR, the number of missing responses was sizable within the SRE, and specifically the SA subscale. Eight cases with more than 25% missing responses were identified (Table 4.3, p. 137). At that point, a decision was made to prepare two data sets: (a) a *n*=69 data set in which those eight cases were retained, which that would not be used in multiple regression analyses that included SRE subscales scores as predictors; and (b) a *n*=61 data set in which those eight cases were dropped, and which would be used in regression analyses that included the SRE-R and SRE-L scores. These steps were taken to conserve data in light of the limited sample size.

Conclusions and inferences for Research Question 3.a. For this research question, post-hoc power analyses were undertaken using both of these data sets. The first post hoc power analysis (*n*=69) was conducted using the Linear Multiple Regression, Fixed Model, R^2 Increase option with AAEIS Total Scores as the DV, Effect Size = 0.15 (medium), alpha = .05, number of IVs = 7, and imputation with sample means. The results of this analysis indicated that the level of power (1-beta) = .5739. The second post hoc power analyses (n=61) was conducted using the same procedures and parameters, with the exception of the number of IV where IVs= 9. The results of this analysis indicated that the level of power (1-beta) = .4443.

This level of power was far below the level which would yield results with confidence, so a decision was made to conduct a linear multiple regression analysis for the purpose of reducing the number of IVs in each model. The results of this analysis using the *n*=69 data set and seven IVs indicated that only three of the IVs had t values greater than 1.0 and an accompanying p value of $p < 0.2$. These IVs were: Father's Level of Education, Age, and Number of Terms Completed (Table 4.31, p. 235). The results of this analysis using the *n*=61 data set and seven IVs indicated that only two of the IVs had t values greater than 1.0 and an accompanying p value of $p < 0.2$. These IVs were: Age, and Father's Level of Education (Table 4.32, p. 236).

A second set of post-hoc power analyses were conducted for each sample using this reduced number of IVs. For the n=69 data set, when the number of IVs was reduced from seven to three, the results of this post-hoc power analysis rose to .749. Similarly, for

the n=61 data set, when the number of IVs was reduced from nine to two, the results of this post-hoc analysis rose to .755.

Both of these post-hoc values fell within a more acceptable range, so these linear multiple regression analyses were run again using this reduced number of IVs. For the analysis using the *n*=69 data set and three IVs, the results indicated that this model was statistically significant at $p < .05$ ($R^2 = .117$, $F = 2.874$, $p = .043$; Table 4.34, p. 240), and that only Father's Level of Education was found to significantly contribute to an explanation of the variance in AAEIS Scores ($t = 2.191$, $p = .032$; Table 4.35, p. 240) for this sample. For the analysis using the n=61 data set and two IVs, the results indicated that this model was statistically significant at $p < .05$ ($R^2 = .123$, $F = 4.048$, $p = .023$; Table 4.36, p. 241) and, again, only Father's Level of Education was found to be a statistically significant predictor of AAEIS Scores ($t = 2.415$, $p = .019$; Table 4.37, p. 242) for this sample.

In conclusion, although Father's Level of Education, Age, and Number of Terms Completed were found to be related to AAEIS Scores, and on a collective basis to explain approximately 12% of the variance in AAEIS scores, only Father's Level of Education was found to serve as statistically significant predictor of those scores. The results of the analysis of the *n*=69 data set indicated that in the presence of the other two IVs, for every 1-unit increase in Father's Level of Education, there is on average an associated 2.04 point increase in AAEIS Total Scores (B= 2.037).

One plausible inference is that an increase in the Father's level of Education is associated with an increase in the EI of their children during their adolescence and young

adulthood. Beyond this, there are few study procedures or results on which to base inferences as to why Father's Level of Education may have had the greatest influence on AAEIS Total Scores of these IVs. It is noteworthy that Father's Level of Education was the only attribute of the father (or male guardian) of study participants. Inferences associated with this are more speculative, based on the researcher's experience and insights. For example, a second inference for this result is that as the only attribute of the father/male guardian in the participating student's household measured in this study, Father's Level of Education, may have represented or interacted with any number of other attributes of the father/male guardian (e.g., the extent to which they were present vs. absent during the formative years for each participant). Those other attributes may have an influence of EI in ways that are yet to explore in research studies.

Conclusions and inferences for Research Question 3.b. For this research question, a post-hoc power analysis was undertaken using the *n*=42 data set. The same sequence of procedures used to analyze the data sets for Research Question 3.a were used to analyze this data set for Research Question 3.b.

First, using the Linear Multiple Regression, Fixed Model, R^2 Increase option with TEIQue-SF scores as the DV. Parameters set for this analysis were: Effect Size = 0.15 (medium), alpha = .05, sample size = 42, and number of IVs = 9. The results of this analysis indicated that the level of power (1-beta) = .2784.

Next, a linear multiple regression analysis was conducted for the purpose of reducing the number of IVs in this model. The results of this analysis using the *n*=42 data set and nine IVs indicated that only one of those IVs had t values greater than 1.0 and an

accompanying p value of $p < 0.2$. That IVs was Age ($t = 2.128$, $p = .041$; Table 4.33, p. 239). When G*Power was used to calculate post hoc power for the regression model which included only this one IV, the level of post hoc power increased to .6877, which is closer to an acceptable level.

Finally, for the linear multiple regression analysis using the n=42 data set and this one IV, the results indicated that this model was statistically significant at $p < .05$ ($R^2 = .121$, $F = 5.487$, $p = .024$; Table 4.38, p. 243), and that Age was found to significantly contribute to an explanation of the variance in AAEIS Scores ($t = 2.342$, $p = .024$; Table 4.39, p. 243) for this sample. The results of the analysis of the n=42 data set indicated that for every 1-unit increase in Age, there is on average an associated .67 increase in TEIQUe-SF Total Scores (B= .664).

As the TEIQue-SF is not the primary measure of EI of interest in this study, less attention was given to inferences that may help to explain this result. However, one inference that may be offered is based on the wider range of ages of study participants: ages 18 to 63 (Table 4.1, p. 130). This inference is that, like cognitive and other aspects of social and emotional development, EI also develops over time and with experience (i.e., EI also is a developmental construct).

Implications

This section begins with a review of the implications of the study procedures, results, and conclusions for theory pertinent to EI. The second section contains the implications of those results and conclusions for research, notably the extent to which they are or are not consistent with the findings of previous research, particularly the

studies of EI which involved African-American samples. The final section contains a discussion of the implications of this study for practice, with particular attention to college-level offerings, initiatives, and opportunities.

Implications for theory. A review of the literature of EI leading up to this study indicated that EI is a broad, but not well defined construct. Theorists and researchers tend to agree that this construct encompasses cognitive, affective, and behavioral dimensions, and that these dimensions pertain to one's own emotions and to emotional aspects of interactions with others (Table 1.2, p. 7). However, they tend to disagree on whether this construct reflects a person's abilities, traits, or some combination of the two (Table 1.1, p. 5). Of these, the former were of greater interest in this study than the latter (i.e., there was no attempt to determine whether the EI characteristics of the study sample reflected abilities, traits, or some combination of the two).

Of the theories, models, and frameworks pertaining to EI, the two which Funderburk consulted were Goleman's (1998) mixed model and Mayer, Salovey, and Caruso's (2002) ability model (Funderburk, 2007, p. 31). Although permission to use each of these measures in this study was granted, due to scoring requirements for each, neither was used. However, Petrides' TEIQue-SF (2009) was included as a second measure of EI in this study, and his measure was designed to reflect his trait model of EI (Table 2.1, p. 49). For these and other models of EI, there are three relevant questions: (a) Which characteristics of the AAEIS are and are not apparent in these three EI models, and in other prominent models of EI?; (b) Which EI characteristics of the study sample appear to reflect any of these EI models?; and (c) What implications do the results of this

study hold for how EI is described or defined for this accessible population (i.e., are there unique features of EI apparent in the AAEIS and/or in this sample)?

In AAEIS response to (a), in the analysis of the validity of the AAEIS, there were several key findings. First, there appears to reflect three of the five main components in Goleman's model and three of the four major components of the Mayer, Salovey, and Caruso model, all of which emphasize self-in-relationship (i.e., understanding others and regulating emotions as part of interactions with others). Thus, the AAEIS appears to be construct valid as a measure of dimensions of EI which emphasize self-in-relationship, notably empathy and responsiveness toward others, and self-regulation of emotions and behaviors associated with others. Results indicated that the AAEIS was not designed to measure those dimensions of EI which emphasize self. In Goleman's model, those included Self-Awareness and Motivation, while in the Mayer, Salovey, and Caruso model, those included *perceiving/identifying emotion, assimilation of emotions, understanding emotions, and managing emotions* as these relate to oneself.

In response to (b), the dimensions of EI featured in the AAEIS were compared to those featured in the TEIQue-SF in several ways. First, as an index of the concurrent validity of the AAEIS, correlations were calculated for total scores and subscale scores in these two instruments. The correlation between AAEIS and TEIQue-SF Total Scores was .608. The correlations of AAEIS subscales designated by the External Panel to TEIQue-SF Total Scores ranged from a high of $r = .556$ for Relationship Management to lows of $r = .242$ for Conflict Avoidance and $r = -.013$ for Conflict Management (or Engagement). These provided additional evidence that the dimensions of EI in the AAEIS which

pertained to self were more strongly correlated to the TEIQue-SF, and the dimensions of EI in the AAEIS which pertained to self-in-relationship, particularly in conflicts, showed weak correlations to the TEIQue-SF.

These differences between the dimensions of EI emphasized in the AAEIS and in the TEIQue-SF became more apparent in the review of results from the combined EFA for this study sample (Table 4.42, p. 250). When Items 1-15 from the AAEIS and all 30 items from the TEIQue-SF were used in this EFA, Factors 1 and 2 included only items from the TEIQue-SF, and featured healthy dimensions of EI pertaining to oneself (i.e., Well-Being and Motivation), but did not include any items from the AAEIS. Further, of the two most prominent factors found in the open-ended EFA for the AAEIS (Table 4.26, p. 213): (i) Conflict Avoidance was reflected in Factor 4 in the combined EFA, and (ii) Conflict Engagement did not hold together as a factor in this combined EFA.

The results above pertaining to questions (a) and (b) indicate that although each model and measure of EI may align, any given model and measure may feature dimensions of EI which are more and less apparent in other models and measures (e.g., Table 1.1, p. 5, Table 1.2, p.7). In this case, the two most prominent factors in the AAEIS, (Factor 1) Self-Control and Conflict Avoidance, and (Factor 2) Conflict Engagement (Table 4.26, p. 213), both do and do not align with Goleman's model (mixed), with the model developed by Mayer, Salovey, and Caruso (ability), and with Petrides' model and measure (trait) (Table 5.3). In all three of these models, as well as in other models of EI (e.g., Bar-On's mixed model; Table 2.5, p. 68), there is attention to

the dimensions of EI which pertain to how one responds to adversity and conflict apparent in the AAEIS and associated EFA results. All three of these theories and models encompass a much wider range of dimensions of EI than those

Table 5.3

Attention to Self-Control/Conflict Avoidance and Conflict Engagement in Selected EI Models and Measures

Dimensions of EI	AAEIS[1]	Goleman[2]	Mayer et al.	Petrides[3]
Self-Control/ Conflict Avoidance	Items 2, 4, 5, and 7	Self-Management	Managing Emotions	Self-Control: Emotion. Reg.
Conflict Engagement	Items 3, 6, 10, 12, 15	Relationship Management: Conflict Mgmt.	Using Emotions	Self-Control: Impulsiveness, and Sociability: Assertiveness

Notes. 1: Results presented in Table 4.26: Dimensions of Goleman's model are summarized in Figure 2.1 (p. 52). 3: Dimensions of Petrides' model are summarized in Table 2.1 (p. 49).

related to (Factor 1) Self-Control and Conflict Avoidance, and (Factor 2) Conflict Engagement (i.e., 9 of 15 items; Table 4.26, p. 213). At the same time, the AAEIS offers limited, if any, attention to the other dimensions of EI apparent in these theories and models (e.g., those pertaining to one's self, such as Well Being and Motivation, as in Table 4.42, p. 250).

In response to (c), one of the questions raised within the literature on EI was whether there may be dimensions of EI that are more unique to different racio-ethnic or cultural groups. Some writers and researchers have provided some evidence that this appears to be true, although the number of studies designed to investigate this have been

somewhat limited. In this study, this question emerged in a significant way in SRE results and in comments provided the External Review Panel (Table 3.3, p. 118, and Table 3.4, p. 119). In general, results for this sample on the SRE subscales indicated that that participants had been exposed to racist events more often over their lifetime (SRE-L) than they had in recent years (SRE-R). In light of the history of racism toward AAs in the U.S., these findings are not unusual, but in the context of this study are indicative of the ever-present threat of racist events which can give rise to adversity and conflict. Despite this, the relationship of SRE-R and SRE-L subscale scores to AAEIS scores (Table 4.18, p. 194, and Table 4.32, p. 236) and to TEIQue-SF scores (Table 4.19, p. 195, and Table 4.33, p. 239) were found to be weak. Unfortunately, the strength of these relationships could not be determined for the SRE-SA subscale due to the number of missing responses (Table 4.2, p. 135). As a result, the influence or impact of racist events experienced by participants on their emotions and in relation to EI could not be determined.

It was noteworthy that members of the External Review Panel were in least agreement on AAEIS items associated with Factor 1: Conflict Avoidance (Items 4, 5, 7), and Factor 2: Conflict Engagement (Item 6) (Table 3.2, p. 116). The reasoning associated with their ratings for these items was apparent in their open-ended comments (Table 3.3, p. 118). For example, for AAEIS Items 4 and 7, Panelist #2 indicated that, *in general*, conflict avoidance "…may prove adaptive and functional for survival … [i]f you are a disempowered marginalized group member." On a more *person*- and *situation-specific* basis, panelists struggled with the wording and therefore the orientation of these conflict avoidance and engagement items. For example, for AAEIS Item 6, Panelist #3 indicated

that “There are times when one needs to diffuse confrontations.” At the same time, for AAEIS Item 4, Panelist #1 indicated that “An expression of anger is a positive and not negative emotional response. Expression does not indicate violence or negative behavior.” When considered collectively, Panelist comments suggested that (a) different situations may call for different kinds of avoidance, assertive, and aggressive response; and (b) those responses may differ from person to person (e.g., depending on a variety of personal attributes, including their personal background and experience, and their perceptions of the situation). From a theoretical perspective, these comments underscore the importance of awareness of one’s own and others’ emotions, and of the self-regulation of response to adversity and conflict as healthy, if not necessary, dimensions of EI, particularly for AAs. From this perspective, the AAEIS, which gives greater attention to these dimensions of EI, may serve as a complimentary measure of EI when used with other measures of EI that may not offer this level of attention (e.g., Petrides’ TEIQue).

From a measurement perspective, these Panelist comments underscore the difficulty of constructing and/or using short items to capture the complexities of an individual’s perceptions and reasoning, as well as their emotional and behavioral responses to complex situations that involve adversity and conflict. On the one hand, this appears to be what Funderburk was attempting to capture in those nine items in the AAEIS, as well as why Panelists struggled in their review and analysis of those conflict-related items. On a broader basis, in light of the ever-present possibility of racist events, the emphasis which Funderburk placed on conflict in AAEIS items appears warranted.

On the other hand, the recognition of these complexities suggests that greater and more nuanced attention is needed to perceptions of and responses to adversity and conflict in measures of EI for AAs. As indicated by Panelist #2, this would include attention to what professionals and different segments of the AA community in the U.S. consider to be healthy/unhealthy as well as socially and culturally acceptable/unacceptable perceptions, reasoning, and responses from an EI perspective.

Implications for research. This section contains comparisons of the results of this study to results from previous studies, specifically studies involving AA samples. To the extent that Funderburk reported descriptive results for the sample of AA adolescents in her study, those results can be compared to descriptive results on the AAEIS for the sample in this study (i.e., as these are the only two studies to use the AAEIS). In addition, the results obtained using the TEIQue-SF in this study are compared to the results obtained using the TEIQue or TEIQue-SF in other studies involving AA samples. Further, the results obtained from the administration of the SRE in this study are compared to SRE results reported in other studies involving AA samples. Finally, the results of linear multiple regression analyses that explored the relationship of EI (AAEIS and TEIQue-SF) scores to other demographic, experiential, and familial factors will be compared to comparable results reported in other studies involving AA samples.

Comparison of results in this study to those reported by Funderburk. On the basis of the search for relevant studies, the only study which involved the use of the AAEIS was Funderburk's own study. In her study, Funderburk (2007) administered the AAEIS to a sample (n=90) of AA students from North Carolina public and private

middle schools, high schools and/or after school programs (p. 31). Participants were between 13 and 19 years of age. Of the 86 participants who provided complete and usable responses, 47 were female, and 39 were male. Each of these participants completed the AAEIS twice, although the age and gender of each participant was not provided in this data set (Funderburk, 2007, Appendix B.1, p. 81). It appears as if AAEIS scores were calculated by summing ratings on Items 1-15 (i.e., ratings ranging from 1 to 4), and 0 or 1 point for Items 16-20 (i.e., 0 = incorrect, and 1 = correct), allowing for a range of possible total scores from 15 – 65. Overall, the lowest score was 29 and the highest score was 58. Data provided in Appendix B.1 were used to calculate mean scores: in Trial 1, x = 44.9, and in Trial 2, the x = 45.3.

The sample in this study (*n*=69) also consisted of only AA students, although the demographic characteristics of this sample differed from Funderburk's. In this study the ages of participants ranged from 18 – 63 (i.e., older, reflecting the difference between middle/high school and state college students), and included 53 females and 16 males (i.e., a greater percentage of females). Descriptive results on the AAEIS for the sample in this study were presented in Table 4.10 (p. 156): x = 48.3, with a SD of 3.94. Thus, the mean scores in these two studies are comparable, although mean score in this study was 3.4 points higher than in Funderburk's study, which may be attributed to the difference in participants' ages and related factors.

Comparison of results in this study to those reported for Petrides' TEIQue-SF. Of the studies of EI in AA samples reviewed in Chapter 2, five of those studies involved college student samples. Unfortunately, none of these studies involved the use of a

measure of EI developed by Petrides and his colleagues (i.e., two used Schutte's SSEIT, two used Mayer/Salovey/Caruso's MSCEIT, one used Bar-On's EQ-i, and one used another measure). Further, of the studies other than Funderburk's which involved adolescent samples, neither used any of Petrides' measures (i.e., they used Schutte's and Bar-On's measures). Finally, of the three studies of EI among adult samples, none used any of Petrides' measures (i.e., two used Bar-On's measure, and the third used another measure). Thus, none of these studies of EI in AA samples used a measure developed by Petrides, so no comparisons of results could be made.

Comparison of results in this study to those reported for Klonoff and Landrine's SRE. Of the studies of EI in AA samples reviewed in Chapter 2, only one study involved the use of the *SRE*: the study by Bowman (2009). The primary purpose of that study was to explore and to provide empirical evidence on the relationship between racism-related stress and mental health, specifically exploring a number of contexts in which racism has been shown to occur. A total of 80 participants from a state university and an HBCU participated in this study. The age range of participants was 18 to 47 years, with females comprising 44% of the sample. Approximately 29% of the participants identified as bi-racial or multiracial, with 6% identifying as of Hispanic descent. In that study, the alpha values for *SRE* subscales were: *SRE-R* = .910; *SRE-L* = .922 and *SRE-SA* = .910. All values were well above .70, indicating a high degree of internal consistency of responses on each subscale. The mean score on the *SRE-R* subscale was 34.72, on the *SRE-L* subscale was 10.73, and on the *SRE-SA* subscale was 40.38.

In this study, the mean score for the *SRE-R* subscale was 32.7 (SD = 15.2). In addition, the mean score for the *SRE-L* subscale was 44.0 (SD = 18.77). Thus, the results for the *SRE-R* subscale in this study were very similar to those reported by Bowman (i.e., approximately a 2-point difference on a scale of 17-68). However, there is a substantial difference in the mean score on the *SRE-L* subscale in this study (44.0) and in Bowman's study (10.73). The similarity in scores on the *SRE-R* subscale tend to eliminate some of the possible explanations for this difference on the SRE-L subscale (e.g., a difference in racio-ethnic characteristics of participants in each study), leaving the explanation for this difference as a matter of speculation.

Comparison of the relationship of selected demographic, experiential, and familial factors to EI to comparable results in prior studies involving AA samples.

Comparisons based on demographic factors. In this section, I compare the results of the relationship of two factors (Table 4.31, p. 235, and Table 4.32, p. 236) to those reported in the prior studies involving AA samples reviewed in Chapter 2. These factors are participant age and gender.

Of those 11 studies, most included an item to measure participants' age. However, those data were used to describe characteristics of the sample in each study (i.e., recognizing that the age range was limited in some of those studies). In none of those studies was age included as a research factor, so there are no results in those prior studies on the relationship of age to EI. This is unfortunate, given the relative magnitude of the relationship of age to AAEIS total scores (Tables 4.31, p. 235 and 4.32, p. 236), and the sizable, but not quite statistically significant ($p < .05$) relationship of age to EI as one of

three selected variables in the regression analysis for the *n*=69 data set (Table 4.35, p. 240), and as one of two selected variables in this analysis for the *n*=61 data set (Table 4.37, p. 242).

Five of those studies included gender as a relevant study variable, although three of those studies explored EI in only female samples (Bradshaw, 2008; Grissette-Banks, 2014; Porter, 2017) and one study explored EI in only a male sample (Brown, 2007). The only study in which the relationship of gender to EI was explored was reported by Quarterman (2009). In general, Quarterman (2009, Table 12, p. 77) found that male and female mean scores on two of Bar-On's five EQ-i subscales appeared to differ substantially: (a) Interpersonal (Male x = 101.88; Female x = 108.00); and (b) Stress Management (Male x = 114.88; Female x = 108.27). "The results of the Pearson r indicate there are differences in the EQ-i composite scores of men compared to women H_1: p=.971 > .05; therefore H_1 is accepted" (p. 79).

The comparable results in this study were reported in Table 4.16 (p. 190). There were relatively small differences between male and female participants on AAEIS total scores, scores on Items 1 – 15, and scores on each of the EI subscales as determined by the External Panel. There were no sizable differences in EI subscale scores comparable to those reported by Quarterman (2009). Thus, it is not surprising that gender did not have a significant relationship to AAEIS scores in either of the regression analyses (Table 4.31, p. 235, or Table 4.32, p. 236). Therefore, the results of these two studies appear to differ somewhat on the relationship of gender to EI, although neither is conclusive for reasons related to sampling procedures, sample size, and sample characteristics (e.g.,

Quarterman's *n*=23, with 8 males and 15 females).. Further, the apparent difference in these results could be attributed to noteworthy differences in study characteristics: (a) Quarterman was primarily interested in exploring leadership characteristics of AA adults (i.e., rather than EI among college students); and (b) Quarterman used Bar-On's EQ-i to measure EI, which featured several dimensions of EI not reflected in the AAEIS (e.g., self-oriented dimensions of EI such as *General Mood* and *Intrapersonal*).

Comparisons based on academic experience factors. In this section, I compare the results of the relationship of two factors (Table 4.31, p. 235, and Table 4.32, p. 236) to those reported in the prior studies involving AA samples reviewed in Chapter 2. These two factors are number of terms completed, and student engagement, a composite variable based on measures of student involvement in selected co- and extra-curricular activities.

In only one of the six prior studies involving college student sample was there any attempt to explore the relationship of the duration of students' academic experience to their EI. Bradshaw's (2008) study included a purposive sample of 60 undergraduate female AA college students from a mid-Atlantic metropolitan area. Students were purposefully selected on the basis of ethnicity (AA), gender (female), and age (18-25), measured students' year in school: Freshman, Sophomore, Junior, or Senior. Two instruments were used to measure EI: Mayer, Salovey and Caruso's MSCEIT, and Bar-On's EQ-I: Short (S). When these two factors were compared, Bradshaw reported that she had found no statistically significant difference between the students' EI level and their academic level.

There were three differences between Bradshaw's study and this study. First, although both studies included AA college students, the sample in this study was not restricted to females, even though the final sample in this study was predominantly female (i.e., 53 of 69 students). Second, the measures of EI used in these two studies differed in that the measures used in this study were the AAEIS and the TEIQue-SF. Third, the manner in which the duration of students' academic experience was measured differed: year in school in Bradshaw's study vs. number of terms completed in this study. In this study, the relationship of number of terms completed to AAEIS total scores was sizable but not statistically significant ($p < .05$) (Tables 4.31, p. 235). For this reason, number of terms was selected as one of three variables for including in the final regression analysis for the n=69 data set (Table 4.35, p. 240: $t = 1.619$, $p = .110$). Thus, in this study, the duration of students' academic experience was a relevant and moderately influential factor, a finding which appears to be inconsistent with the finding reported by Bradshaw.

In none of these 11 studies was the relationship of student engagement in co- and/or extra-curricular activities to EI explored. Thus, there are no results from those prior studies to compared to those reported for this relationship in this study.

Comparisons based on familial factors. In this section, I compare the results of the relationship of three factors (Table 4.31, p. 235, and Table 4.32, p. 236) to those reported in the prior studies involving AA samples reviewed in Chapter 2. These factors are: familial SES, and mother's and father's highest level of education.

Of the six prior studies involving college students, only Holmes (2008) explored the relationship of familial SES, as well as of their mother's and father's education, to EI. However, Porter's (2017) study of adult AA females in leadership positions in higher education also explored the relationship of SES to EI.

Holmes' (2008) sample was a purposive convenience sample of 120 AA students at three Schools of Business at selected HBCUs, namely Howard University, Florida A&M University and North Carolina Central University. Of the initial 120 undergraduate and graduate participants, 102 completed both surveys and emotional intelligence tests, resulting in a 85% response rate. Within this sample, 65% were women and 35% were men, and their average age was 23 years old. One instrument was used to measure EI: Mayer, Salovey and Caruso's MSCEIT. Due to the directional nature of the study's hypotheses, decisions about statistical significance were one-tailed tests with $p = .05$ and $p = .01$. Holmes found that EI scores were positively correlated with SES ($r = .331$), although in that study SES was measured using institutional data (e.g., the number of Pell grants) rather than using a measure of familial SES. However, Holmes found that EI scores were not correlated with participants' household income (i.e., the measure of SES used in this study).

Porter (2017) also explored the relationship of SES to EI as part of her third research question, although her sample was very small (n=4). She reported that SES appeared to have no relationship to or influence on EI, at least within her sample.

In his study of AA college students, Holmes (2008) also explored the relationship of Mother's and Father's Highest Level of Education to EI. He found that EI scores were

positively and significantly, but moderately, correlated with their Mother's Highest Level of Education (r = .261, p = .004), and with their Father's Highest Level of Education (r = .369, p = .000).

However, there were several noticeable differences between features of Holmes' study and of this study. First, although both studies included AA college students, this study's student sample attend a state community college, and the Holmes' attended HBCUs. A second difference was the EI measure used in the Holmes' study was the MSCEIT. A third difference was that in Holmes' study was SES was determined by the number of Pell grant recipients of each HBCU, although Holmes' measure of family income was identical to the measure of SES used in this study. With these differences in mind, the results reported by Holmes on the relationship between household income and EI are partially consistent with the results reported in this study (Table 4.31, p. 235, and Table 4.32, p. 236). Holmes reported Spearman correlation coefficients for the relationship of father's and mother's highest level of education to EI, which indicated that (a) both of these relationships were positive, (b) Father's Highest Level of Education was more strongly correlated to EI than was Mother's Level of Education, and (c) each relationship was moderate. The results in this study for these variables were similar to those summarized in (a) and (b), (Table 4.31, p. 235 and Table 4.32, p. 236). However, for (c) the results of this study appeared to differ in magnitude from those reported by Holmes. In this study, the relationship of Father's Highest Level of Education to EI was stronger than p < .15 for the n=69 sample and for the n=61 sample. These findings led Father's, but not Mother's, Highest Level of Education to be selected for inclusion in

both of the regression analyses for Research Question 3.a. The results of those analyses found Father's Highest Level of Education to be the only statistically significant predictor of AAEIS scores in this study: for the *n*=69 sample, t = 2.19 (p = .032) (Table 4.35, p. 240); and for the *n* = 61 sample, t = 2.415 (p = .019) (Table 4.37, p. 242). Therefore, in this study, Father's Highest Level of Education may have had a stronger relationship to EI than in Holmes' (2008) study. At the same time, Mother's Highest Level of Education appears to have had a stronger relationship to EI in Holmes' study than in this study.

Implications for practice. In this section, I explore what the findings of this study appear to say about the education of AA students at the college level, including institutions with two- and four-year programs. This is the world of education in which study participants were engaged (Table 4.1, p. 130), as well as the world of education in which this researcher has been immersed for 14 years.

In the broadest possible sense, the findings of this study contain two relevant, but apparently different, sets of findings, each of which have practical implications. On the one hand, the results of the combined EFA pointed out that the two most prominent factors reflected healthy dimensions of EI among the AA college students in this sample (Table 4.42, p. 250). A total of 14 of the 30 items in the TEIQue-SF loaded on these two factors, most of which focused on aspects of EI related to one's self, rather than self-in-relationship: (Factor 1) a *positive sense of self-concept/esteem*, *personal motivation*, an optimistic *perspective on life*; (Factors 1 & 2) *enjoys life*; and (Factor 2) *in touch with my feelings, self-regulate emotions*, *cope with stress*, *express emotions*, as well as *deal with others* (i.e., a dimension of EI which reflects self-in-relationship). These results clearly

indicated that when EI is considered and measured broadly, the resulting data indicated that AA college students had developed a fairly broad and healthy sense of personal EI. It is unclear whether these findings would apply equally to male and female AA college students in this sample given the relative percentage of each in the study sample (Males = 16, Female = 53), although there did not appear to be any prominent male/female differences in either AAEIS responses (Table 4.16, p. 190) or TEIQue-SF responses (Table 4.17, p. 192). The experiential and educational implications of this is that there are multiple aspects of healthy, personal EI which colleges can, by design and intention, help student develop (e.g., those associated with Factors 1 and 2 noted above). As is apparent in the EI literature, there appear to be a wide range of approaches that colleges could use to support student development in these areas, including through mentorships, academic offerings and advising, projects within courses, co-curricular and extra-curricular offerings (e.g., participation in student government, the arts, sports, and community service), and student support services. This range of approaches fall under the jurisdiction of multiple departments within any college, so any effort to develop and offer a more inclusive and comprehensive strategy to support student development of EI would require some mechanism within that college to maintain communication and coordination across those departments.

On the other hand, results apparent in this study also pointed out the influence of adversity and conflict on EI, including experiences of racism. Results on the SRE-R and SRE-L subscales indicated that every participant in this study had multiple experiences of some form of racism, both recently and over the course of their lifetime (Table 4.12, p.

169). Landrine and Klonoff's (1996) study demonstrated the relationship between racism-related stress and psychological symptoms of anxiety, but also between racism-related stress and behavioral manifestations of anxiety. However, Bowman's (2009) results suggested that SRE-R or SRE-L scores did not predict experience of depression. Unfortunately, the number of missing responses in the SRE-SA subscale in this study (Table 4.2, p. 135) precluded the opportunity to include SRE-SA scores and to analyze the relationship of those scores to EI. Further, neither SRE-R nor SRE-L scores were found to be influential predictive of AAEIS scores (Table 4.32, p. 236). Nonetheless, the results of the EFA for Items 1-15 in the AAEIS did point out that interpersonal conflict was prominent: Factor 1 focused on Self-Control and Conflict Avoidance (4 Items), and Factor 2 focused on Conflict Engagement (5 Items) (Table 4.26, p. 213). Although the AAEIS items were not designed to determine if the nature or source of the conflicts in these nine items was associated with experiences of racism, the latter could be included and cannot be ruled out; this would require further research. Although these two sets of findings may or may not be related, it is noteworthy that study participant had at least a moderate level of racist experiences and that AAEIS items which reflected conflict were so prominent in this EFA. These two findings also hold implications for practice. At very least, many of the same approaches that could be used to further student development of healthy EI also may be used to help students, individually and collectively, develop the perspective-taking, analytic, and self-regulation capabilities to more clearly recognize and read situations, as well as the emotional capacities to cope with/regulate their own emotional and behavioral responses to instances of adversity and conflict, including those

associated with experiences of racism. This range of approaches would fall under the jurisdiction of multiple departments within any college, also would require a more inclusive and comprehensive strategy to (a) help students cope with adversity and conflict on an interpersonal level, as well as to (b) reduce instances of racism, adversity, and conflict within/across the college as a whole.

Finally, in this section on the practical implications of study findings that pertain to fostering the development of healthy EI and to coping with adversity and conflict, it is important for college representatives to be aware that neither set of implications is new. On scales ranging from national organizations and initiatives (e.g., Brown Black College Bound) to those that are college-specific (e.g., Minority Male Initiative), approaches which aim to address these implications have been developed, piloted or implemented, and evaluated. Although it is beyond the scope of this study to list and endorse any those that may that appear to be effective, readers are encouraged to search for and review print and electronic resources for these kinds of initiatives.

Study Delimitations, Limitations, and Generalizability

Delimitations. This study was delimited in the following ways. First, the target population for this study was delimited to include only undergraduate AA college students. This reflects the research problem, specifically the fact there have been relatively few studies of EI where the sample study was drawn from this population, and that only one measure of EI was found that had been developed for use with this population.

Second, the accessible population for this study was delimited to include only AA students in one state college system.

Third, the time period in which data collection took place was delimited to one semester in one academic year, specifically Spring in the 2019-20 academic year. This delimitation reduced the potential influence of several threats to the study's internal validity (e.g., maturation, history).

Finally, the procedures used to collect data from AA students at this college were delimited to the use of one electronic (online) survey research platform, namely Qualtrics. Observations, interview data, journaling, and third-party observations were not used to gather data in this study. Rather, study participants were asked to respond to selected-response items in existing measures, and the only chance they had to provide open-ended responses were on the researcher-constructed items pertaining to student demographic and background factors.

Limitations. First, although efforts were made to gain permission to use a number of existing measures of EI in this study, I was unable to gain permission to use either (a) Mayer, Salovey, and Caruso's measure of their ability model, or (b) Bar-On's EQ-I in this study. Of these, (a) was not available due to their requirement that my advisor complete training and certification requirements to score responses (D. Caruso, personal communication, November 15, 2017). Further, (b) was not available due to my inability to reach Bar-On, despite repeated attempts to locate and contact him.

Second, I was able to obtain permission to use the measure of EI developed by Funderburk (2007) in this study. However, I was unable to find any other studies that

made use of Funderburk's, so the only results of data and psychometric analyses available for comparison purposes are those reported by Funderburk. For this reason, this study does seek to address this limitation through the analysis of psychometric properties of the AAEIS based on data collected in this study.

Third, the study design calls for the development and use of items to measure background and experiential variables. In the absence of such a measure, the items in this researcher-constructed measure was drawn from the limited number of available studies of EI that involved AA samples. One limitation associated with this is that there may be aspects of students' background and experiences that are highly relevant to aspects of EI that were missed and therefore not measured. Another limitation associated with this was the difficulty of piloting this measure. If this was done with students in the study's accessible population, it could have reduced the size of the population available to participate in this study or contaminated a segment of that population through prior exposure. Thus, the researcher-developed items were not pilot tested.

Fourth, given the limited size of the accessible population, there are two limitations associated with the sample of participants in this study. Some members of this study's accessible population were unable and/or unwilling to participate in the study (534 AA students were invited to participate, and 69 students provided usable responses). In addition, there was some loss of data and/or mortality among those who agreed to participate in this study voluntarily (e.g., due to non-completion of all measures of EI). Some participants were dropped from that data set, yielding two smaller data sets (n=69,

and *n*=61). Excessive missing data in SRE-SA, resulted in dropping this subscale from all regression analysis.

Finally, in light of the previous delimitation, the use of an electronic (online) survey required self-reporting. The validity and reliability of most of the existing measures of emotions and EI has been well established, and the validity and reliability of the measures developed by Funderburk was further explored in this study. However, self-reported responses may be exaggerated (Northrup, 1996). For example, participants may be too embarrassed to reveal private details or may inflate the frequency or magnitude of responses for reasons associated with social desirability (Heppner et al., 2017).

Generalizability. In general, two aspects of external validity are pertinent to the generalizability of the results of any quantitative study: population validity and ecological validity (Braucht & Glass, 1968). Population validity refers to the extent which findings for the study sample are applicable to: (a) the accessible population in the study, in this case, all AA students attending this college; and (b) the study's target population. In this study, the accessible population consisted of 1,599 students on four campuses of this state college who were selected on the basis of their racial background and gender, of whom 1,065 were female and 534 were males. A stratified random sampling procedure was used to select 50% of the AA male students (*n*=268) and 25% of the AA female students (*n*=266), with the number of male and female AA students proportional to the total number on each campus (Table 3.1, p. 111). Of the 534 students invited to participate in this study, usable responses were obtained from 69 students, resulting in a 12.9% response rate. Further, of those 69 participants, only 16 were male (5.97% of the males

invited, and 3% of the accessible population of AA male students), and 53 were females invited (19.92% of females invited, and 4.98% of the accessible population of AA female students). Due to the relatively low response rate, both as a whole and by gender, and to the uneven distribution of male and female participants relative to the number invited to participate, the results obtained for this sample cannot be generalized to the accessible population. By extension, these results cannot be generalized to the study's target population.

This was not an experimental study, so ecological validity did not play a prominent role in this study. However, due to differences in the conditions to which students were exposed on each campus, it was possible that those differences could have had some influence on the results of this study (e.g., due to differences in region and surrounding municipality, campus size, range of programs offered, available resources). Although the data set would allow me to identify which of the four campuses each participant attended, this was not explored, primarily due to the low response rate discussed above. Thus, there is no attempt to generalize the results of this study to any of these four campuses, or to any state colleges outside of this county.

Recommendations for Research and Practice

Recommendations for further research. Toward the end of her dissertation, Funderburk (2007) offered several implication and associated recommendations for further research, based on her development of the AAEIS, which are relevant to this study. Three of these were: (a) "further item generation and refinement could be done", although this comment pertained to the multi-choice items following pictures (Items 16-

20), rather than rating scale items (Items 1-15); (b) “[t]he AAEIS also could be tested against other short form emotional intelligence tests created for adolescents”; and (c) “a final implication for research could be development of other emotional intelligence tests for various minority populations” (p. 73). Of these, (b) was addressed in this study by comparing AAEIS items and results to TEIQue-SF items and results. Nonetheless, each of the three implications and recommendations is reflected in the recommendations for further research which follow from this study.

Replication of this study. One of the persistent recommendations for almost any quantitative study in education, psychology, and other social science is to repeat or (replicate) the study. The reason for this is to provide opportunities for the results of a study such as this one to be compared to the results of future studies which involve the same accessible population, instruments, and procedures. Simply, to what extent will the results of future studies be consistent with those reported here and add confidence to these findings? Thus, the first recommendation for further research is to replicate this study. One potential benefit of a replication study is that, unlike this study, it would not take place under conditions influenced by COVID. However, any attempt to replicate this study should carefully consider the recommendations below which aim to address study limitations and delimitations, most notably the size and representativeness of the sample.

Recommendations for future research based on study limitations and delimitations. One of the prominent limitations in this study was the relatively low response rate. Of the 534 students randomly selected to participate in this study, 69 (12.9%) provided usable responses. Further, a nearly equal number of male (M) and

female (F) students were selected and invited (M = 268, F = 266), but the number of usable responses from student of each gender was noticeably different (M = 16, and F = 53). In future studies designed to replicate and/or extend this study, a second recommendation would be to include and involve a larger sample of AA college students. This might be accomplished in any number of ways, including: inviting a greater number of students to participate; arranging for key members of the AA community on campus to endorse and encourage participation (e.g., adding their signatures to the letter of invitation; talking it up on campus); secure sources of financial support which would allow for incentives (e.g., a sizable number of and dollar amount for gift cards); and use sampling procedures with replacement sampling for non-participants.

A limitation and delimitation of this study is that some form of permission was granted to use the other kinds of measure of EI as recommended by Funderburk (2007, p. 73). Permission was granted to use the TEIQue-SF (i.e., a 30-item trait measure), but also the SSEIT developed by Schutte et al. (2008) (i.e., a 33-item ability measure). Unfortunately, the latter could not be used. In addition, permission was granted to use the Mayer, Salovey, and Caruso's MSCEIT (i.e., an 133-item ability measure), and Goleman et al. ESCI-U (i.e., a 70-items mixed measure), although these were not used. The former required completion of scorer training prior to use, while the latter required submission of data for scoring by the Hay Group, each adding a layer of complication for dissertation research purposes. Finally and unfortunately, the researcher was unable to obtain permission to use Bar-On's (2006) 133-item EQ-I. As discussed in Chapters 2 and 5, of these EI measures, the MSCEIT, SSEIT, and EQ-I were used in other studies of EI which

involved AA college students, although the TEIQue-SF was not. Further, of these instruments, each appears to include scales and items which measure both healthy dimensions of EI and dimensions of EI related to adversity and conflict (Figure 2.1, p. 52; Table 2.2, p. 54; Table 2.4, p. 63; and Table 5.3, p. 330). Consistent with Funderburk's recommendation, future studies of EI among AA college students should plan and prepare to use other valid and reliable measures of EI that are available, were used in previous studies of AA samples, and are of an appropriate length. Doing this could have several advantages or benefits, including: (a) determination of the psychometric properties of each measure relative to this target population (e.g., construct and concurrent validity, reliability); and (b) furthering the identification of prominent EI characteristics of this population from among the wider range of characteristics or dimensions measures by those instruments.

Another delimitation of this study pertained to the selection and use of items used to measure a selected demographic, academic experience, familial, and racist experience variables. To the extent possible, decisions to include and measure these variables were based on findings reported in previous studies of AA college students, although the number of such studies was limited. To extend an understanding of influential factors such as those included in Research Question 3, future studies should include variables found to be relevant and influential in this and other studies, as well as explore additional variables in this evolving body of research studies. However, there also was a limitation associated with the items used to measure these variables: even though attention was given to the manner in which these variables were measured in prior studies, the

researcher-developed items used in this study were not pilot tested. In future studies, pilot testing of research-constructed items to measure these types of variables is strongly recommended.

A third delimitation within this study was that the accessible population of AA college students included only one state college system in Florida. For this reason, it is not known what the results of this or another study might look like if this accessible population was broadened. Therefore, it is recommended that similar studies of EI and potentially related variables be conducted among: (a) AA college students in other state college systems within and outside Florida; (b) students in HBCU institutions and programs; and (c) as in Funderburk's (2007) study, AA high school students. Of these, (a) and (b) would allow results of this study to be compared to samples drawn from the wider population of AA college students, and (c) could provide insights into factors which influence the development of EI prior to enrollment in college.

A fourth delimitation within this study was the reliance on online survey research methods to collect data on EI and other relevant variables. To overcome this and, at the same time, address questions of the validity and reliability of survey responses (e.g., due to social desirability), other research methodologies, designs, and data collection procedures can and should be considered. At the level of methodology and design, mixed methods studies could be designed to collect survey data during an initial phase (e.g., existing EI measures and other research variables), and then follow-up interview data during a subsequent phase of the same study (Johnson & Onwuegbuzie, 2004). This would provide opportunities for triangulation (Guba, 1980), which could be used to check

and confirm survey responses, thereby reducing the potential for missing and invalid responses (e.g., responses on any items perceived to be ambiguous or confusing; responses due to social desirability).

At the level of instrumentation and data collection, new instruments and procedures could be developed and used to collect data on selected dimensions of EI. One of the difficulties which became apparent during this study was with the use of survey items to measure students' perceptions of, emotions toward, and self-regulation of responses to complex and dynamic situations that involve adversity and conflict, including racism. What Funderburk attempted to do was very challenging, and the results of the EFA of AAEIS Items 1-15 reflect this (e.g., several items reflected aspects of and/or loaded on Factors 1 and 2 associated with both conflict avoidance and conflict engagement). The need for efforts such as hers are apparent in the wider EI literature: "There are only a few studies examining the link between [EI] and conflict … More research is required … to further the understand the links between [EI] and different types of … conflict" (Jordan, Murray, & Lawrence, 2009, p. 178). In light of this, and consistent with another of Funderburk's recommendations (2007, p. 73), the careful construction and use of a new measure of EI based on scenarios to assess student perceptions, emotional reactions, and behavioral responses to situations which involve different kinds of adversity and conflict could add significantly to existing measures of and measurement strategies for EI, particularly among AA college students. A scenario-based measure of this kind might bear some resemblance or relationship to the MSCEIT, which is based on problem-solving scenarios (Mayer, Caruso & Sitarenios. 2003;

Salovey & Grewal, 2005*).* Although several items associated with scenarios might use selected-response formats, the use of questions or prompts to elicit constructed (open-ended) responses would be valuable (e.g., to explain why certain responses were selected; to elaborate on associated thoughts, feelings, and perceptions in greater depth). Further, when such a new scenario-based measure is being develop, the comments and concerns posed by External Panel members about what may constitute healthy and unhealthy responses from different perspectives (e.g., Euro- and Afro-Centric perspectives) should be given careful consideration (Table 3.2, p. 116; Table 3.3, p. 118; Table 3.4, p. 119).

In addition to the construction of new instruments, additional strategies could be used to collect data on EI, either to complement the use of existing EI instruments or on their own. These strategies may include: individual interviews, group interviews and focus groups, student journaling (e.g., in response to selected prompts and on a more open-ended basis), and observations by members of a research team. The search for and review of relevant research for this study did not extend to the uses of these and other data collection strategies in prior studies of EI, so the extent to which these have been used is not known to this researcher, but worthy of careful review and consideration.

Recommendations based on study findings. As reflected in the research questions used to guide this study, Funderburk's AAEIS served as the primary focus for much of this study. As indicated One of the prominent recommendations for further research offered by Funderburk (2007) was "further item generation and refinement could be done" (p. 73). Of the two sections of the AAEIS (ratings for Items 1-15, multiple choice for Items 16-20), greater attention was paid to the former than the latter.

Of the analyses reported in Chapter 4, the EFA for Items 1-15 was prominent, and the results of that analysis indicated that while some items had a strong loading on one factor, several items either loaded on more than one factor or did not clearly fit with the other items that loaded on a factor. Thus, on the basis of these findings for this sample, several recommendations to modify and refine items in the AAEIS appear to be supported.

To begin, in a careful review of Funderburk's (2007) dissertation, it appeared as if all items were scored the same way (i.e., as if all items were worded in the same direction). The ratings provided by the External Panel (Table 3.2, p. 116) indicate that this appeared to be inappropriate. These Panelists agreed on the scoring of 11 of the 15 rating-scale items in the AAEIS, four of which were to be scored normally (i.e., Never = 1), and seven of which were to be reverse scored (i.e., Never = 4). In general, it is recommended that careful attention be given to the direction of wording of existing AAEIS items, and that both normal and reverse scoring be used when this direction differs. Further, as discussed below, if and as AAEIS items are modified or added, it also is recommended that careful attention be given to the proper scoring of those items.

In Table 4.26 (p. 213), the first two factors pertained to responses to conflict, notably (Factor 1) *Self-Control and Conflict Avoidance*, and (Factor 2) *Conflict Engagement*. Of the 15 rating scale items in the AAEIS, nine loaded on these two factors. Items 2, 4, and 5, loaded only on Factor 1, while Items 10, 12, and 15 loaded only on Factor 2. Thus, three of those nine items had loadings greater than .30 for both Factors 1 and 2: Items 3, 6, and 7. On the basis of the EFA and associated analyses in Table 4.26 (p. 213), it was recommended that Item 7 be included in a subscale associated with Factor

1, while Items 3 and 6, be included in a subscale associated with Factor 2. Although the results reported in Table 4.26 appear to support these recommendations, further data collection and analysis would allow these recommendations to be evaluated. In specific, and consistent with the opening recommendation to replicate this study, data from replications should be used to determine: (a) if this assignment of Items 3, 6, and 7 to these subscales would be supported; and (b) if any of these items need to be modified to better reflect and align with these factors (underlying dimensions of EI) and associated AAEIS subscales.

In Table 4.26, the next two factors pertains to an individual's willingness to open themselves up to the emotions of others, notably (Factor 3) *Willingness to Understand Others' Emotions*, and (Factor 4) *Willingness to be Responsive to Others' Emotions*. Of the 15 rating-scale items in the AAEIS, seven loaded on these two factors. On the basis of the EFA and associated analyses in Table 4.26, several recommendations were offered: (a) Item 7 be included in the subscale associated with Factor 1; (b) Item 15 be included in the subscale associated with Factor 2; (c) Items 8 and 14 be included in the subscale associated with Factor 3; (d) Item 9 be included in the subscale associated with Factor 4; (e) Item 11 be included in the subscale associated with Factors 3 and 4 (i.e., due to factor loadings on each factor greater than .5, and to item wording which appears to reflect both factors); and (f) Item 1 be included in the subscale associated with Factor 5 due to its primary factor loading and wording. In summary, on the basis of current item wording and the results for this sample, three items would be retained for the subscale associated with Factor 3, and two for Factor 4. Further data collection and analysis would allow

these recommendations to be evaluated. In specific, and consistent with the opening recommendation to replicate this study, data from replications should be used to determine: (first) if Item 11 clearly loaded on Factor 3, Factor 4, or both factors; and (second) if Item 11 had its primary loading on Factor 3, to draft one or two additional items to reflect the nature and intent of Factor 4, and then collect and analyze data to determine if each newly created item did, in fact load on Factor 4 (i.e., as at least two items are required to create a scale or subscale).

Of the results reported in Table 4.26 (p. 213), the EFA for AAEIS Items 1-15 identified a fifth factor with an eigenvalue great than 1. Factor 5 was labeled *Self-Control*, although these items tended to reflect a loss of self-control (i.e., rendering it different than items which loaded on Factor 1). Three items loaded on Factor 5: Items 1, 12, and 13. On the basis of EFA and other analysis results, the recommendations presented in Table 4.26 were: (a) to retain Items 1 and 13 in the subscale associated with this factor; and (b) to drop Item 12 from this subscale, due to notable differences in its factor loading and item wording. Reviews of AAEIS items, including ratings and comments from the External Panel (Table 3.2, p. 116), indicated that Item 12 is not an isolated item. Rather, it appears to be associated with Item 8, as both Items 8 and 12 appear to reflect *Self and Social Awareness*, specifically an individual's faulty perceptions of others based on projections of what those others may be thinking/feeling. Despite the apparent similarities in these two items, the results of the EFA (Table 4.26, p. 213) had Item 8 loading strongly on Factor 3 (loading = .818) and Item 12 loading on Factor 5 (- .424). Further data collection and analysis would allow these

recommendations to be evaluated. In specific, and consistent with the opening recommendation to replicate this study, data from replications should be used to determine whether: (a) Items 1 and 13 would or would not load on the same factor; (b) Items 8 and 12 would or would not load on the same factor (i.e., rather than Item 8 on the factor associated with Items 11 and 14); and (c) the wording and/or scoring of any of these items needed to be revised so to clarify and support the assignment of items to subscales.

These recommendations pertaining to the relationship of item wording and scoring to the assignment of items to factors and subscales appear to be consistent with the results of the Cronbach's alpha value for the internal consistency of AAEIS Items 1-15: for the *n*=69 data set, it was .585., and for the *n*=61 data set was .595. Both values were noticeable below the lower limit of .7 recommended by researchers such as Nunally (1978). These alpha values suggested some weakness(es) in the measurement and psychometric properties of these items. Therefore, after one or more rounds of testing and possible modification of exiting items, and the possible addition of new items, it is recommended that the reliability of the AAEIS be rechecked to determine if such changes helped to improve the internal consistency of Items 1-15.

Consistent with Research Question 1, the intent of all of the above recommendations is to improve the understanding of features or dimensions of EI within this study's target and accessible population: AA college students. Therefore, future studies should analyze data with the intent of clarifying and offering additional insights into this important question.

Recommendations for practice. As noted earlier, one of the difficulties inherent in developing recommendations for practice based on the methods and findings of this study lies in the limitations apparent in sample size (*n*=69) and response rate (12.9% of students invited). These drastically reduced the generalizability of the study findings, at least from the perspective of population validity. Despite these limitations, a number of implications for practice were explored and discussed in a previous section. Thus several recommendations, following from that discussion of implication for practice, are offered here.

First, in light of the findings that highlight the prominence of health, personal and interpersonal aspects of EI within this study sample, there appear to be a wide range of approaches that colleges could use to support student development in these areas. These may include: mentorships, academic advising and offerings, projects within courses, and co-curricular and extra-curricular opportunities.

Second, the findings also highlighted personal and interpersonal aspects of EI within this study sample that pertained to adversity and conflict, including experiences of racism. Many of the approaches that could be used to further student development of healthy EI also may be used to support student development, individually and collectively, in these areas. In this area, approaches would help students develop perspective-taking, analytic, and self-regulation capabilities to more clearly recognize and read situations, as well as the emotional capacities to cope with/regulate their own emotional and behavioral responses to instances of adversity and conflict, including those associated with experiences of racism.

In light of these two points, it is recommended that state colleges continue to seek input and form teams to enhance strategic plans and coordinated pathways which aim to support student development in both of these areas, as well as implement and periodically evaluate and refine these evolving plans and associated implementation efforts. As state colleges engage in this kind of deliberate process, it is further recommended that they seek out, consider and, as appropriate, collaborate with national networks, organizations, and initiatives (e.g., Brown Black College Bound), as well as develop those that are college-specific (e.g., Minority Male Initiative).

Third, the emphasis on support for *student* development in this recommendation may not be sufficient. In specific, this may not address factors within the college and campus environment which contribute to or perpetuate conditions which may: (a) limit the development of healthy EI; and/or (b) give rise to experiences of adversity and conflict, including racism. For this reason, it also is recommended that state colleges include attention to *college- and campus-wide* development as they work on strategic plans and coordinated pathways which aim to support *student* development in these areas, as well as implement and periodically evaluate and refine those plans and associated implementation efforts as they related to the college and campus as a whole.

Finally, although state colleges may be viewed as separate and distinct institutions, they rarely function in isolation from the wider communities which they serve and of which they are a part. As many state colleges have found, it is vital to collaborate with agencies, institutions, and organizations in their community and region for numerous reasons. In many cases, the relationship-building process can lead to

longer-term partnerships (e.g., dedicated internships; CareerSource; Executive Leadership Institutes). These forms of collaboration and partnerships can support and advance the kinds of student development and college/campus development efforts discussed above. Therefore, as state colleges enhance their strategic plans and coordinated pathways, it is recommended that they seek, consider and, as appropriate, include those agencies, institutions, and organizations which can and do support these goals and efforts (e.g., religious leaders; psychological and behavioral counselors).

In summary, all four of these recommendations for practice pertain to the development, implementation, and evaluation of one or more strategic plans by a state college. That plan or those plans would encompass initiatives whose goal was to further the development of EI awareness, capacities, and skills among students on an individual and collective basis, as well as the development of a college/campus environment and community partnerships that were supportive of that goal. It is recognized that this student development goal cannot be achieved if any college/campus environment is not conducive to and/or supportive of it. Further, for any number of reasons, this goal cannot be achieved without the support of local/regional agencies, institutions, organizations, and businesses (e.g., to complement services available on campus and to offer opportunities that may not be as available on campus, including the support of faith communities, counseling services, and internship and volunteer opportunities). As is important in many, if not most, community service settings, efforts should be made to ensure that community partners also benefit from these forms of collaboration and partnerships (i.e., in addition to student and the campus benefit). Viewed from this

broader perspective, efforts to help achieve this student development goal also could support both campus and community development. In effect, on a collective basis, these recommendations for practice acknowledge that the achievement of this student development goals reflects the often-quoted African proverb: “It takes a village” (https://en.wikipedia.org/wiki/It_takes_a_village).

References

11.1: Distinction between outliers & high leverage observations, STAT 501. (n.d.). Pennsylvania State University: Statistics Online Courses. Retrieved December 14, 2022, from https://online.stat.psu.edu/stat501/lesson/11/11.1

5 ways to check the normality of residuals in R [Examples]. (n.d.). Retrieved December 14, 2022, from https://www.codingprof.com/5-ways-to-check-the-normality-of-residuals-in-r-examples/

Abel, N. R. (2013). *Trait emotional intelligence, perceived discrimination, and academic achievement among African American and Latina/o high school students: A study of academic resilience.* [Doctoral dissertation, Minnesota State University, Mankato]. Retrieved from https://cornerstone.lib.mnsu.edu/cgi/viewcontent.cgi?article=1071&context=etds

Andrei, F., Siegling, A. B., Aloe, A. M., Baldaro, B., & Petrides, K. V. (2016). The incremental validity of the Trait Emotional Intelligence Questionnaire (TEIQue): A systematic review and meta-analysis. *Journal of Personality Assessment*, *98*(3), 261–276. https://doi.org/10.1080/00223891.2015.1084630

Avolio, B. J., & Bass, B. M. (2004). *Multifactor leadership questionnaire (TM)*. Menlo Park, CA: Mind Garden, Inc.

Bar-On, R. (n.d.). *Glossary of EI terms and names associated with this field*. Retrieved From https://www.reuvenbaron.com/the-bar-on-model/glossary-of-emotional-social-intelligence-terms-and-names-associated-with-this-field/

Bar-On, R. (1997a). *The Emotional Quotient Inventory (EQ-i): A test of emotional intelligence*. Toronto, Canada: Multi-Health Systems, Inc.

Bar-On, R. (1997b). *The Emotional Quotient Inventory (EQ-i): Technical manual*. Toronto, Canada: Multi-Health Systems, Inc.

Bar-On, R. (2000). Emotional and social intelligence: Insights from the Emotional Quotient Inventory (EQ-i). In R. Bar-On and J. D. A. Parker (Eds.), *Handbook of emotional intelligence.* San Francisco: Jossey-Bass, pp. 363-88.

Bar-On, R. (2003). How important is it to educate people to be emotionally and socially intelligent, and can it be done? *Perspectives in Education, 21*(4), 3-15.

Bar-On, R. (2005). The impact of emotional intelligence on subjective well-being. *Perspectives in Education, 23*(2), 41-61.

Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI). *Psicothema*, *18*, 13–25. Retrieved from https://www.psicothema.com/pi?pii=3271

Bar-On, R., & Handley, R. (2003a). *The Bar-On EQ-Interview*. Toronto, Canada: Multi-Health Systems.

Bar-On, R., & Handley, R. (2003b). *The Bar-On EQ-360*. Toronto, Canada : Multi-Health Systems.

Barrett, L.F., Lindquist, K.A., Bliss-Moreau, E., Duncan, S., Gendron, M., Mize, J., & Brennan, L. (2007). Of mice and men: Natural kinds of emotions in the Mammalian brain? A response to Panksepp and Izard. *Perspectives on Psychological Science*, *2*, 297–312.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of Personality and Socialpsychology*, *61*(2), 226.

Bass, B. M. (2002). Cognitive, social, and emotional intelligence of transformational leaders. In K. de Roulet (Ed.), *Leadership Conference, April 9, 1999, Claremont McKenna College, Claremont, CA, US*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Beasley, K. (1987). The emotional quotient. *Mensa Magazine-United Kingdom Edition*, *13*.

Becker, T. (2003). Is emotional intelligence a viable concept? *Academy of Management Review*, *28*, 192–195.

Bell, T. J. (2003). *Cultural mistrust, self-efficacy, and outcome expectations as predictors of academic and psychosocial adjustment for African-American college students at predominantly white universities.* (Doctoral dissertation, University of Illinois at Urbana-Champaign). ProQuest Dissertations & Theses Open.

Biostatistics Resource Channel. (2013, March 13). *How to use SPSS-Replacing missing data using multiple imputation (regression method)* [Video]. Retrieved from https://youtu.be/ytQedMywOjQ

Blakey, C. (2017). *Exploring the effect of gender, age, and ethnic influences on variables of emotional intelligence*. (Doctoral dissertation, Chicago School of Professional Psychology). ProQuest Dissertations & Theses Open.

Bloom, B., Engelhart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain*. New York: David McKay Co.

Bowman, T. (2009). *An exploration of the relationship between racism-related stress and emotional well-being for African American college students.* (Doctoral dissertation, Oklahoma State University). ProQuest Dissertations & Theses Open.

Boyatzis, R. E., Goleman, D., & Hay Group (2001). *The Emotional Competence Inventory (ECI).* Boston, MA: Hay Group.

Boyatzis, R.E., Goleman, D. and Rhee, K. (2000), Clustering competence in emotional intelligence: insights from the emotional competence inventory (ECI). R. Bar-On and D. Parker (Eds), *Handbook of Emotional Intelligence* (pp. 343-362). San Francisco, CA: Jossey-Bass.

Bradberry, T., Greaves, J., Emmerling, R., Sanders, Q., Stamm, S., Su, L. D., & West, A. (2003). *Emotional intelligence appraisal technical manual*. San Diego, CA: TalentSmart Inc.

Bradshaw, F. B. (2008). *Exploring the relationship between emotional intelligence and academic achievement in African American female college students*. (Doctoral dissertation, College of Notre Dame of Maryland). ProQuest UMI Dissertations Publishing.

Brereton, R. G. (2015). The Mahalanobis distance and its relationship to principal component scores. *Journal of Chemometrics*, *29*(3), 143–145. https://doi.org/10.1002/cem.2692

Brown, D. (2017). *How can project H.O.P.E. "Helping Our Young People Excel" impact the emotional intelligence of African American males who attend a rural alternative school?* (Doctoral dissertation, East Carolina University). Retrieved from http://thescholarship.ecu.edu/handle/10342/6505

Cabanac, M. (2002). What is emotion?. *Behavioural Processes*, *60*(2), 69-83.

Carmeli, A. (2003). The relationship between emotional intelligence and work attitudes, behavior and outcomes: An examination among senior managers. *Journal of Managerial Psychology*, *18*(8), 788-813.

Caruso, D. R., Mayer, J. D., & Salovey, P. (2002). Relation of an ability measure of emotional intelligence to personality. *Journal of Personality Assessment*, *79*(2), 306-320.

Chapman, B. P., & Hayslip Jr, B. (2006). Emotional intelligence in young and middle adulthood: Cross-sectional analysis of latent structure and means. *Psychology and Aging*, *21*(2), 411.

Cherniss, C. (2000). *Emotional intelligence: What it is and why it matters* (p. 15). New Brunswick, NJ: Graduate School of Applied and Professional Psychology,Rutgers University.

Chickering, A. W., & Reisser, L. (1993). *Education and Identity. The Jossey-Bass Higher and Adult Education Series*. San Francisco, CA: Jossey-Bass Inc., Publishers.

Ciarrochi, J., Chan, A. Y., & Bajgar, J. (2001). Measuring emotional intelligence in adolescents. *Personality and Individual Differences, 31*(7), 1105-1119.

Clark, R., & Gochett, P. (2006). Interactive effects of perceived racism and coping responses predict a school-based assessment of blood pressure in black youth. *Annals of Behavioral Medicine*, *32*(1), 1-9.

Clarke, A. M., Sixsmith, J., & Barry, M. M. (2015). Evaluating the implementation of an emotional wellbeing programme for primary school children using participatory approaches. *Health Education Journal, 74*(5), 578-593.

Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

Corcoran, K., & Fischer, J. (Eds.). (2000). *Measures for clinical practice: A sourcebook, Volume 1. Couples, families, and children* (3rd ed.). New York: The Free Press.

Covey, S. R. (1989). *The 7 habits of highly successful people*. New York: Fireside.

Damasio, A. R. (1998). *Emotion and reason in the future of human life*. Oxford, England: Oxford University Press.

Davies, M., Stankov, L., & Roberts, R. D. (1998). Emotional intelligence: in search of an elusive construct. *Journal of Personality and Social Psychology*, *75*(4), 989.

Davies, M., Stankov, L., and Roberts, R. (1998). Emotional intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology, 75*(4), 989.

Deams, P. R. (2008*). Emotional intelligence, relationship attachment, and family dynamics amongst African Americans*. (Doctoral dissertation, Tennessee State University). ProQuest Dissertations & Theses Open.

Dhani, P., & Sharma, T. (2016). Emotional intelligence; history, models and measures. *International Journal of Science Technology & Management*, *5*(7), 189-201.

Dimitriades, Z. S. (2007). Managing emotionally intelligent service workers: Personal and positional effects in the Greek context. *Journal of European Industrial Training*, *31*(3), 223-240.

Does SPSS provide an internal consistency measure for ordinal variables? (2020, April 16). Retrieved from https://www.ibm.com/support/pages/does-spss-provide-internal-consistency-measure-ordinal-variables

Drati, B. A. (2010). *Closing the achievement gap: The relationship between emotional intelligence, race identity attitudes, and academic achievement with African American adolescents*. (Doctoral dissertation, Fresno State University). CSU ScholarWorks. http://hdl.handle.net/10211.3/118951

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432.

Durlak, Joseph A., Roger P. Weissberg, Allison B. Dymnicki, Rebecca D. Taylor, and Kriston B. Schellinger. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–32.

Earley, P. C., & Gardner, H. K. (2005). Internal dynamics and cultural intelligence in multinational teams. In *Managing multinational teams: Global perspectives*. Bradford, UK: Emerald Group Publishing Limited.

Eastern Florida State College: Degrees & Certificates. (n.d.). Retrieved from https://www.easternflorida.edu/academics/degrees-certifications/

Ekman, P. E., & Davidson, R. J. (1994). *The nature of emotion: Fundamental questions*. Oxford, England: Oxford University Press.

Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion recognition: a meta-analysis. *Psychological Bulletin*, *128*(2), 203.

English, H. B., & English, A. C. (1958). *A comprehensive dictionary of psychological and psychoanalytical terms: A guide to usage*. London, England: Longman.

Fan, H., Jackson, T., Yang, X., Tang, W., & Zhang, J. (2010). The factor structure of the Mayer–Salovey–Caruso Emotional Intelligence Test V 2.0 (MSCEIT): A meta-analytic structural equation modeling approach. *Personality and Individual Differences*, *48*(7), 781-785.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149-1160.

Fowler Jr, F. J., & Cosenza, C. (2009). Design and evaluation of survey questions. In L. Bickman and D. Rog (Eds.), *The SAGE handbook of applied social research methods* (2nd ed.; pp. 375-412). Thousand Oaks, CA: SAGE Publications, Inc.

Funderburk, N. S. (2007). *Measurement of emotional intelligence in African-American adolescence: Testing the validity and reliability of an original instrument.* (Doctoral Dissertation, North Carolina State University). NC State University Repository. http://www.lib.ncsu.edu/resolver/1840.16/3597

Gardiner, C. L. (2011, December). Examining the influence of racial identity, ethnicity, ethnic identity, cultural mistrust, and self-esteem of students of African descent and their preference for counselors' ethnicity. *National Forum of Multicultural Issues Journal*, *9*(1), 1-26.

George, J. M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations*, *53*(8), 1027-1055.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2), 486–489. https://doi.org/10.5812/ijem.3505

Gibbs, N. (1995, October 2). The EQ factor. *Time*, *146*, 60–68.

Goleman, D. (1996). Emotional intelligence. Why it can matter more than IQ. *Learning 24*(6), 49–50.

Goleman, D. (1998, March). The emotionally competent leader. In *The Healthcare Forum Journal*, *41*(2), 36-38).

Goleman, D., & Boyatzis, R. (2001). *Emotional Competence Inventory (ECI)*. Philadelphia, PA: McClelland Center for Research and Innovation, Hay Group.

Gougis, R. A. (1984). The impact of race prejudice on the emotional state and performance of black-American college students. In Neisser, U. (Ed.), *The school achievement of minority children: New perspectives* (Chapter 6). London and New York: Routledge. https://doi.org/10.4324/9781315060187

Gowing, M. K. (2001). Measurement of emotional competence. In C. Cherniss & D. Goleman (Eds.), *The emotionally intelligent workplace* (pp. 83–131). San Francisco, CA: Jossey-Bass

Grant, A. M., & Cavanagh, M. J. (2007). Coaching psychology: How did we get here and where are we going? *InPsych, 29*, 6 – 9.

Grissette-Banks, M. (2014). *The emotional intelligence of successful African American women leaders* (Doctoral dissertation, Fielding Graduate University). ProQuest Dissertations & Theses Open. https://portal.lib.fit.edu/login?url=https://www.proquest.com/dissertations-theses/emotional-intelligence-successful-african/docview/1494127478/se-2

Hakanen, E. A. (2004). Relation of emotional intelligence to emotional recognition and mood management. *Psychological Reports*, *94*(3), 1097-1103.

Harms, P. D., & Credé, M. (2010). Emotional intelligence and transformational and transactional leadership: A meta-analysis. *Journal of Leadership & Organizational Studies*, *17*(1), 5-17.

Harrell, S. P. (200). "A Multidimensional Conceptualization of Racism-Related Stress: Implications for the Well-Being of People of Color." *American Journal of Orthopsychiatry 70*(1*)*, 42–57.

Harvey, P., Summers, J. K., & Martinko, M. J. (2010). Attributional influences on the outcome-aggression relationship: A review and extension of past research. *International Journal of Organization Theory & Behavior*, *13*(2), 174-201.

Hay Group. (2011). Emotional and social competency inventory [description]. Retrieved from:http://www.haygroup.com/leadershipandtalentondemand/ourproducts/item_details.aspx?itemid=58&type=1&t=2

Hay/McBer. (1996) *Generic competency dictionary*. Boston, MA: Hay/McBer, in-house Publication available from Hay Group, London.

Hedlund, J., & Sternberg, R. J. (2000). Too many intelligences? Integrating social, emotional, and practical intelligence. In R. Bar-On & J. D. A. Parker (Eds.), *Handbook of emotional intelligence* (pp. 136–167). New York: Jossey-Bass

Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, *50*(1), 93-98.

Heppner, W. L., Spears, C. E., Vidrine, J. I., & Wetter, D. W. (2015). Mindfulness and emotion regulation. In B. D. Ostafin, M. D. Robinson, & B. P. Meier (Eds.), *Handbook of mindfulness and self-regulation* (pp. 107-120). New York: Springer.

Holmes, R. A. (2008*). Class effects: An exploratory study of the relationship between emotional intelligence and socio-economic status among African Americans.* (Doctoral dissertation, George Washington University). ProQuest Dissertations & Theses Open.

James, W. (1948). What is emotion? 1884. In W. D. (Ed.), *Readings in the history of psychology* (pp. 290–303). Appleton-Century-Crofts. https://doi.org/10.1037/11304-033

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

Joseph, D. L., & Newman, D. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology 95*(1), 54 - 78.

Kang, H. (2013). A guide on the use of factor analysis in the assessment of construct validity. *Journal of Korean Academy of Nursing*, *43*(5), 587-594.

Kaplan, R. M., & Saccuzzo, D. P. (2001). *Psychological testing: Principles, applications, and issues* (5th ed.). Belmont, CA: Wadsworth. Keller.

Kleinginna, P., & Kleinginna, A. M. (1981) A categorized list of motivation definitions, with a suggestion for a consensual definition. *Motivation and Emotion, 5*(3), 263–91.

Klonoff, E. A., & Landrine, H. (1999). Cross-validation of the schedule of racist events. *Journal of Black Psychology*, *25*(2), 231–254. Retrieved from https://doi.org/10.1177/0095798499025002006

Krathwohl, D. R., Bloom, B.S., & Masia, B. B. (1964). Taxonomy of educational objectives: Handbook II. *Affective Domain.* New York: David McKay Co.

Kruskal, J. B. (1964a). Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis. *Psychometrika* 29, (1) 1-27.

Kruskal, J. B. (1964b). Nonmetric multidimensional scaling: a numerical method. *Psychometrika, 29* (2), 115-129.

Laerd Statistics. (2013). How to perform a multiple regression analysis in SPSS statistics| Statistics. Retrieved from https://statistics.laerd.com/spss-tutorials/multiple-regression-using-spss-statistics.php

Landrine, H., & Klonoff, E. A. (1996). The schedule of racist events: A measure of racial discrimination and a study of its negative physical and mental health consequences. *Journal of Black Psychology, 22*(2) 144-168.

Lewis, M.K. (2004). *Differences in emotional intelligence and related constructs among academically resilient and academically nonresilient African American undergraduate students.* (Doctoral dissertation, Michigan State University). ProQuest Dissertations & Theses Open.

Linear, nonlinear, and monotonic relationships. (n.d.). Retrieved from https://support.minitab.com/en-us/minitab/21/help-and-how-to/statistics/basic-statistics/supporting-topics/basics/linear-nonlinear-and-monotonic-relationships/

Li, Q. I., Ouyang, D., & Racine, J. S. (2013). Categorical semiparametric varying-coefficient models. *Journal of Applied Econometrics*, *28*(4), 551-579.

Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American statistical Association, 83*(404), 1198-1202.

Malouff, J. M., Schutte, N. S., & Thorsteinsson, E. B. (2014). Trait emotional intelligence and romantic relationship satisfaction: A meta-analysis. *The American Journal of Family Therapy*, *42*(1), 53-66.

Martin, C. M. (2008). *A meta-analytic investigation of the relationship between emotional intelligence and leadership effectiveness*. (Doctoral dissertation, East Carolina University). ProQuest Dissertations & Theses Open.

Martinko, M. J., Harvey, P., & Dasborough, M. T. (2011). Attribution theory in the organizational sciences: A case of unrealized potential. *Journal of organizational behavior, 32*(1), 144-149.

Minitab, LLC. (2022). *Linear, nonlinear, and monotonic relationships*. Retrieved from https://support.minitab.com/en-us/minitab/21/help-and-how-to/statistics/basic-statistics/supporting-topics/basics/linear-nonlinear-and-monotonic-relationships/

Naresh Sen. (2019). *Testing assumptions; Independence of residuals.* Retrieved from https://www.youtube.com/watch?v=BioR3Ovk3PU

Nunnally, J.C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill.

Palencik, J. T. (2007). William James and the psychology of emotion: From 1884 to the present. *Transactions of the Charles S. Peirce Society*, *43*(4), 769-786.

Petrides, K. V. (2001). *A psychometric investigation into the construct of emotional intelligence.* (Unpublished doctoral dissertation). University College, London.

Petrides, K. V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire. In C. Stough, D. H. Saklofske, and J. D. Parker, *Advances in assessment of emotional intelligence* (pp. 85-101). New York: Springer. http://doi: 10.1007/978-0-387-88370-05.

Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established taxonomies. *European Journal of Personality, 15*(6), 425-448. https://doi.org/10.1002/per.416

Petrides, K. V., & Furnham, A. (2003). Trait emotional intelligence: Behavioural validation in two studies of emotion recognition and reactivity to mood induction. *European Journal of Personality, 17*(1), 39-57.

Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, *98*(2), 273–289. https://doi.org/10.1348/000712606X120618

Porter, L. (2017). *Emotional intelligence of African American women in higher education administration.* (Unpublished doctoral dissertation). Trevecca Nazarene University, Nashville, TN.

Roberts, R. D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion, 1,* 196–231.

Quarterman, D. T. (2011). *The emotional intelligence attributes and transformational leadership skills of African American men and women.* (Doctoral dissertation, University of Phoenix). ProQuest Dissertations & Theses Open. https://portal.lib.fit.edu/login?url=https://www.proquest.com/dissertations-theses/emotional-intelligence-attributes/docview/1668327518/se-2

Saarni, C. (2000). Emotional competence: A developmental perspective. In Bar-On, R. & Parker J. D. A. (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 68–91). Jossey-Bass/Wiley.

Schutte, N. S., Malouff, J. M., & Bhullar, N. (2009). The assessing emotions scale. In Parker, J. D. A., Saklofske, D., Stough, C. (Eds.), *Assessing emotional intelligence* (pp. 119–134). Springer. https://doi org.portal.lib.fit.edu/10.1007/978-0-387-88370-0

Sobraske, K. H., Boster, J. S., & Gaulin, S. J. (2013). Mapping the conceptual space of jealousy. *Ethos, 41*(3), 249-270.

Spearman's Rank-Order Correlation: A guide to when to use it, what it does and what the assumptions are. (n.d.). Retrieved from https://statistics.laerd.com/statistical-guides/spearmans-rank-order-correlation-statistical-guide.php

Spielberger, C. (Ed.). (2004). *Encyclopedia of applied psychology*. Cambridge, MA: Elsevier Academic Press.

Statistical power analysis. (n.d.). Statistics Solutions. Retrieved from https://www.statisticssolutions.com/dissertation-resources/sample-size-calculation-and-sample-size-justification/statistical-power-analysis/

Statistics Solutions: dissertation and research consulting. (n.d.). Statistics Solutions. Retrieved from https://www.statisticssolutions.com/

Suzuki, L., Yang, R., Ro, G. Abitbul, A., & Carriero, T. (August, 2014). *Race, ethnicity, culture and emotional intelligence: A preliminary meta-analysis*. Poster presented at the 2014 Annual Convention of the American Psychological Association, Washington, DC.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics (International edition)*. Boston, MA: Pearson.

Thorndike, E. L. (1914). *Education, a first book*. New York: The Macmillan Co.

Tsiampalis, T., & Panagiotakos, D. B. (2020). Missing-data analysis: socio-demographic, clinical and lifestyle determinants of low response rate on self- reported psychological and nutrition related multi- item instruments in the context of the ATTICA epidemiological study. *BMC Medical Research Methodology, 20*(1), 148. https://doi.org/10.1186/s12874-020-01038-3

Understanding Q-Q Plots: University of Virginia Library Research Data Services + Sciences. (n.d.). Retrieved from https://data.library.virginia.edu/understanding-q-q-plots/

Van der Maaten, L., & Hinton, G. (2008). Visualizing data using t-SNE. *Journal of Machine Learning Research, 9*(11), 2579-2605.

Van Rooy, D. L., Alonso, A., & Viswesvaran, C. (2005). Group differences in emotional intelligence scores: Theoretical and practical implications. *Personality and Individual Differences*, *38*(3), 689-700.

What does Cronbach's alpha mean? SPSS FAQ. (n.d.). Retrieved from https://stats.oarc.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/

Whitman, D. S., Van Rooy, D. L., Viswesvaran, C., & Kraus, E. (2009). Testing the second-order factor structure and measurement equivalence of the Wong and Law Emotional Intelligence Scale across gender and ethnicity. *Educational and Psychological Measurement, 69*(6), 1059-1074.

Worrell, F. C., Mendoza-Denton, R., Telesford, J., Simmons, C., & Martin, J. F. (2011). Cross Racial Identity Scale (CRIS) scores: Stability and relationships with psychological adjustment. *Journal of Personality Assessment, 93*(6), 637-648.

Zach. (2019). How to identify influential data points using Cook's Distance. *Statology*. Retrieved from https://www.statology.org/how-to-identify-influential-data-points-using-cooks-distance/

Zach. (2021). What is concurrent validity? (Definition & examples). *Statology*. Retrieved from https://www.statology.org/concurrent-validity/

Zach. (2021). The Durbin-Watson test: Definition & example. *Statology*. Retrieved from https://www.statology.org/durbin-watson-test/

Zaki, M. J., & Meira, W. Jr. (2020). *Data mining and machine learning: Fundamental concepts and Algorithms* (2nd ed). Cambridge, UK: Cambridge University Press.

Appendices

Appendix A

IRB Approval and Application

Appendix A.1: IRB Approvals

Appendix A.2: IRB Application

Appendix A.3: Supporting Application Materials

Appendix A.1: IRB Approvals

Initial Approval

Florida Institute of Technology
Institutional Review Board

Notice of Exempt Review Status
Certificate of Clearance for Human Participants Research

Principal Investigator:	Wayne Brown
Date:	February 15, 2020
IRB Number:	20-015
Study Title:	An Investigation of Emotional Intelligence Among African American College Student

Your research protocol was reviewed and approved by the IRB Chairperson. Per federal regulations, 45 CFR 46.101, your study has been determined to be minimal risk for human subjects and exempt from 45 CFR46 federal regulations. The Exempt determination is valid indefinitely. Substantive changes to the approved exempt research must be requested and approved prior to their initiation. Investigators may request proposed changes by submitting a Revision Request form found on the IRB website.

Acceptance of this study is based on your agreement to abide by the policies and procedures of Florida Institute of Technology's Human Research Protection Program (http://web2.fit.edu/crm/irb/) and does not replace any other approvals that may be required.

All data, which may include signed consent form documents, must be retained in a secure location for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Access to data is limited to authorized individuals listed as key study personnel.

The category for which exempt status has been determined for this protocol is as follows:.

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior so long as confidentiality is maintained.

a. Information is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the participant and/or
b. Subject's responses, if know outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing, employability, or reputation.

Approval of Initial Revisions (March, 2015)

Institutional Review Board Office
Dr. Jignya Patel, IRB Chair
Nathan M. Bisk College of Business
(p) 674-7391
FIT_IRB@fit.edu
https://www.fit.edu/research/faculty--researchers/compliance/human-subjects-regulation/

Request for Revision

Use this form to report any changes to a previously approved protocol or consent form. Changes must be approved by the IRB prior to their implementation.

1. Principal Investigator Name: Wayne Brown

   Title of Project: An Investigation of Emotional Intelligence Among African American College Students

   IRB Number: 20-015

2. Does this revision increase risks to participants enrolled in the study?

Yes	
No	X

3. Describe revision requested:

   1-Replace the TEIQue with the TEIQue-Short Form (SF)

   2-Replace the Survey Monkey tool with Qualitrics

   3-Include EFSC faculty profile link on the Consent Form

   4-Revised data set Spring 2020

4. Attach *revised* protocol and/or consent (highlight all revisions):

Signature of PI: wayne Brown Date 03/04/20

Signature of Major Advisor: Mary P Marchand Date 03/06/2020
(if PI is a student)

For IRB Use:

Approved	X
Not Approved	
Approved Pending Changes	

IRB Approval Jignya Patel, Ph. D. Digitally signed by Jignya Patel, Ph. D. Date: 2020.03.11 11:26:16 -04'00' Date

Approval of Final Revisions (April 2021)

Institutional Review Board Office
Dr. Jignya Patel, IRB Chair
Nathan M. Bisk College of Business
(p) 674-7391
FIT_IRB@fit.edu
https://www.fit.edu/research/faAculty--researchers/compliance/human-subjects-regulation/

FLORIDA TECH

Request for Revision

Use this form to report any changes to a previously approved protocol or consent form. Changes must be approved by the IRB prior to their implementation.

1. Principal Investigator Name: Wayne Brown

   Title of Project: An Investigation of Emotional Intelligence Among African American College Students

   IRB Number: 20-015

2. Does this revision increase risks to participants enrolled in the study?

Yes	
No	X

3. Describe revision requested:

   a) Having been made aware of the proprietary restrictions for use of the ESCI, notably that I am not permitted to embed ESCI items in the Qualtrics survey I plan to administer online, I have decided to remove this instrument from my research.

   b) With the possible impact the COVID-19 virus pandemic may have on how participants respond in my EI survey and the potential influence of "history" as a threat to the internal validity of my study. I added five (5) questions to my Demographic Questionaire:

   Choose one of the following to answer Questions 12-16
   Strongly Agree Agree Neutral Disagree Strongly Disagree

   12: The COVID-19 pandemic around the world does not really concern me
   13: The spread of COVID-19 across the U.S. has become a serious concern for me
   14: No one close to me (family or community) has been seriously affected by COVID-19
   15: COVID-19 has made my life very difficult
   16: Emotionally, I've found it easy to cope with everything going on as a result of COVID19

c- Added the statement below to the Cover letter/Letter of Invitation

Please read and respond to each question carefully.

4. Attach *revised* protocol and/or consent (highlight all revisions)

Signature of PI: Wayne Brown Date _____

Signature of Major Advisor: [signature] Date 4/14/2020
(if PI is a student)

For IRB Use:

Approved	
Not Approved	
Approved Pending Changes	

IRB Approval Jignya Patel, Ph. D Digitally signed by Jignya Patel, Ph. D Date: 2020.04.12 13:00:45 -04'00' Date _____

Appendix A.2: Initial IRB Application

Florida Institute of Technology

RESEARCH INVOLVING HUMAN PARTICIPANTS
EXEMPT APPLICATION

This form shall be used if there is **minimal risk** to human subjects; one of the categories on the next page applies to the research. If there is more than minimal risk associated with the research (none of the conditions apply) or if the research utilizes a special population (children, prisoners, institutionalized individuals, etc.), please use the expedited/full application form found on the IRB website.

You should consult the university's document "Principles, Policy, and Applicability for Research Involving Human Subjects" and instructions on the IRB Committee website prior to completion of this form.
https://www.fit.edu/research/compliance--regulations/institutional-review-board

Submit via email to FIT_IRB@fit.edu.

IRB Contact Information:
Dr. Jignya Patel
IRB Chairperson
FIT_IRB@fit.edu
321-674-7347

INVESTIGATOR INFORMATION

Title of Project: An Investigation of Emotional Intelligence Among African American College Students

Date of Submission: _____

Expected Project Start Date: _____ Expected Project Duration: Three months

Principal Investigator: Wayne Brown

Title: PhD Candidate

Academic Unit: Education & Interdisciplinary Studies

Phone: 3213680449 Email: wbrown@fit.edu

List all co-investigator(s). Please include name, title, academic unit/affiliation and email.

NA

CATEGORIES OF EXEMPT RESEARCH
Research must choose one:

☐ Research conducted in established or commonly accepted educational settings, involving **normal educational practices**, such as:
a. research on regular and special education instruction strategies, or
b. research on the effectiveness of or the comparison among instruction techniques, curricula or classroom management methods.

☒ Research involving the use of **educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior** unless:
a. the subjects can be identified, directly or through identifiers linked to the subjects and
b. any disclosure of subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability or reputation.
Note: This exemption does not apply to survey procedures or interviews involving minors.

☐ Research involving the use of educational tests, survey or interview procedures, or observation of **public behavior** if:
a. the subjects are elected or appointed public officials or candidates for public office, or
b. the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

☐ Research involving the **collection or study of existing data, documents, records or specimens** if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, indirectly or through identifiers linked to the subjects.

☐ Research and demonstration projects that are conducted by or subject to the approval of department or agency heads and that are designed to study, evaluate or otherwise examine:
a. **public benefit or service programs,**
b. procedures for obtaining benefits or services under those programs,
c. possible changes in or alternatives to those programs or procedures, or
d. possible changes in methods or levels of payment for benefits or services under those programs.

☐ **Taste and food quality evaluation** and consumer acceptance studies if:
a. wholesome foods without additives are consumed, or
b. food is consumed that contains food ingredients found to be safe by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

RESEARCH FUNDING
If any part of this study will be funded by an external funding source, you must note the funding source and award/solicitation number below:

Incentives provided by Eastern Florida State College and Florida Tech's Acopian Endowment

ANSWER THE FOLLOWING QUESTIONS AS THOROUGHLY AS POSSIBLE.

1. List the objectives of the proposed project.

To maintain confidentiality, the names, campuses, and email addresses of EFSC students who are invited to and who participate in this survey will be known only by me and my advisor. Each completed instrument will be assign an ID number to help ensure their anonymity. Finally, responses will be presented in summary form (aggregated for M, F, and all participants) to help further ensure anonymity.

2. Describe the research project design/methodology. Discuss how you will conduct your study, and what measurement instruments you are using. Attach all research materials to this application. Please describe your study in enough detail so the IRB can identify what you are doing and why.

This study will involve the use of survey research methods. With permission from the EFSC VPAA, personnel in the Office of Planning and Assessment will provide a list of all AA students on each campus. Male (M) and female (F) AA students on each campus will be: (a) randomly selected from these lists; and then (b) randomly assigned to one of two survey groups. Selected students in both groups will be invited to participate in this study via e-mail, and asked to complete a measure containing demographic and student-related items. I have also added five items on COVID-19 in the opening demographics section. Funderburks AAEIS, and Landrine and Klonoffs Schedule of Racist Events (SRE). In addition, students in each group will complete one measure of EI: Group 1 = Shutte et al.'s SSEIT and Group 2 = Petrides' TEIQue-SF. This would result in approximately 267 students in each group, for a total sample of 534 AA students. (see attached directions and instruments).

3. Describe the characteristics of the participant population, including number, age, sex and recruitment strategy (attach actual recruitment email text, recruitment fliers, etc).

The target population for this study includes AA college students who reside in Brevard County, or whose characteristics resemble those of students in this county. The accessible population includes all AA undergraduate students enrolled in any of the four branch campuses of EFSC. College records from Spring 2020 indicated that EFSC had a total of 14597 students, of whom 1605 (11.0%) self-identified as AA. This accessible population included 1,065 female and 534 male students. Stratified random sampling procedures will be used to select 50% of M and 25% of F students on each campus (approximately 268 M and 266 F AA students). As an incentive to participate students will be entered into a raffle to receive one of 15 Amazon gift cards worth $20, or one of 4 EFSC caps, or one of 4 EFSC t-shirts (i.e., 5, 1, and 1 per campus). In addition, all students who complete the survey will be provided with a link to a website containing tools they may use to enhance their EI.

4. Describe any potential risks to the participants (physical, psychological, social, legal, etc.) and assess their likelihood and seriousness. Describe steps that will be taken to mitigate each risk.

I do not anticipate any physical, psychological, or emotional risk to the students who agree to participate in the survey. Nonetheless, all responses will remain confidential and anonymous.

5. Describe the procedures you will use to maintain the confidentiality and privacy of your research participants and project data. If video or audio recordings will be made, you must review the video/audio recording policy found on the IRB website and address precautions you will take in this section.

To maintain confidentiality, the names, campuses, and email addresses of EFSC students who are invited to and who participate in this survey will be known only by me and my advisor. Each completed instrument will be assign an ID number to help ensure their anonymity. Finally, responses will be presented in summary form (aggregated for M, F, and all participants) to help further ensure anonymity.

6. Describe your plan for informed consent (attach proposed form).

Each participant will be contacted using an email message that contains an invitation to participate in the survey, a link to my profile and a link to the consent form, directions, and sections of the survey instrument on Qualtrics (i.e., using the FIT site license). (see attached participant consent form).

7. Discuss the importance of the knowledge that will result from your study (benefits to the field and to society) and what benefits will accrue to your participants (if any). Include information about participant compensation if appropriate.

Beyond being of personal and professional benefit, Mr. Brown's dissertation study will yield insights that may contribute to the work of Minority Male Initiative (MMI) at EFSC. In addition, by making these results available to EFSC personnel associated with the MMI, this study could contribute to subsequent initiatives which focus on factors associated with the academic retention and achievement concerns associated with minority males at EFSC.

8. Explain how your proposed study meets criteria for exemption from Institutional Review Board review (as outlined on page 2 of this form).

This study meets the criteria for exemption because: (a) from the sampling procedures and Qualtrics responses, only I, and possibly my advisor, will know how the names and email addresses of study participants correspond to assigned ID numbers; and, (b) there will be no risk of disclosure, criminal or civil liability, or damage to any participant due to the use of procedures noted above (assignment of ID numbers, reporting only aggregated results).

SIGNATURE ASSURANCES

I understand Florida Institute of Technology's policy concerning research involving human participants and I agree:

1. to accept responsibility for the scientific and ethical conduct of this research study.
2. to obtain prior approval from the Institutional Review Board before amending or altering the research protocol or implementing changes in the approved consent form.
3. to immediately report to the IRB any serious adverse reactions and/or unanticipated effects on subjects which may occur as a result of this study.
4. to complete, on request by the IRB, a Continuation Review Form if the study exceeds its estimated duration.

PI Signature Wayne Brown Digitally signed by Wayne Brown Date: 2020.03.30 09:34:01 -04'00' Date

PI Signature (print) Wayne Brown

ADVISOR ASSURANCE: IF PRIMARY INVESTIGATOR IS A STUDENT

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of the study, the necessity for the use of human subjects in the study to the student's academic program, and the competency of the student to conduct the project.

Major Advisor Signature Thomas Marcinkowski Date 4/4/2020

Major Advisor (print) Dr. Tom Marcinkowski

ACADEMIC UNIT HEAD: IT IS THE PI'S RESPONSIBILITY TO OBTAIN THIS SIGNATURE

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of this study and the competency of the investigator(s) to conduct the study. DocuSigned by:

Academic Unit Head Signature Muniewer Mine Subasi Date 4/6/2020

Academic Unit Head (print) Muniewer Mine Subasi

FOR IRB USE ONLY

IRB Approval Date

IRB #

Appendix A.3: Supporting Application Materials

Letter of Invitation

Dear EFSC Student,

My name is Wayne Brown and I am a PhD student at Florida Tech and currently carrying out a research study on Emotional Intelligence among African American male/female students at EFSC. I am also Program Manager for the Bachelor of Applied Science program and a Faculty Lead for the Minority Male Initiative (MMI) here at EFSC. I have had the privilege to work alongside Administration and several Faculty and Staff members at EFSC to develop the MMI with positive results. I have received overwhelming support from our VP of Academic Affairs, Dr. Miedema and Florida Tech to conduct this study.

You have been selected to participate in this study, please be aware this study is extremely important not only to both EFSC as it relates to the MMI and the African American (AA) student population, but to the Entire student population. I have worked for almost five years to get to this point, and I need your support in a huge way. There will be some raffled incentives that you will be eligible for in the event you agree to participate. The following is what you will be asked to do:

a. Click on the link, read over and complete the consent form
b. Be sure to complete the **entire four-part** survey which will take about 45-50 minutes

If you have any questions **before** you click on the link, please contact me:
brownw@easternflorida.edu

Know that the four part survey was generated by other researchers, and this is our opportunity to contribute to the conversation with this study.

Please be aware of this opportunity and the important role you play in this research, and lastly know how much I appreciate you for your time and effort.

Consent form and Online Survey link

Respectfully,

Wayne Brown

Wayne Brown RRT, MS, PhD Student
Program Manager, Bachelor of Applied Science/EFSC

Participant Consent Form

Study Title: Emotional Intelligence Among African American College Students

Principal Investigator: Mr. Wayne Brown, Ph.D. Candidate

Why am I Conducting This Study?

There are two purposes for this study. My primary purpose is to identify dimensions of emotional intelligence (EI) among African-American college students. To date, very few studies (6) have explored this. My second purpose is to assess the validity and reliability of the only measure of EI that has been developed for use with African-Americans: the African-American Emotional Intelligence Survey (AAEIS; Funderburk, 2007).
Link to my Profile: Click Experience, Education

https://www.easternflorida.edu/faculty-staff/faculty-homepage.cfm?opt=HHH7VNHB

How Were You Selected to Participate in This Study?

You have been identified as an African-American student engaged in study on one or more of the four campuses in the EFSC system. With appropriate research approvals and support by EFSC, you were randomly selected to participate in this study.

What Will You Be Asked to Do If You Choose to Participate in This Study?

- First, you are asked to read and complete this Participant Consent Form.
- Once you have done this, you are asked to review the short set of directions on the next page.
- After that, you are asked to complete all five parts to this online survey: a section on demographics, Funderburk's AAEIS, a second measure of EI, and the Schedule of Racist Events. Completion of all five parts will take approximately 45 minutes.
- Upon completion, you will be provided with the opportunity to participate in a raffle. To participate in this raffle, you will be asked to provide your e-mail address so that you can be notified of raffle results (see **Possible Benefits**, below).

What Are the Possible Risks to Your Participation?

Your participation on this study will not involve any physical, psychological, or emotional risk.

What Are the Possible Benefits to You or to Others?
The results of this survey may be used in conference presentations and articles for publication. In these ways, this study is intended to have a positive impact on AA students and on EFSC as a whole.

How Will You Protect the Information You Collect About Me?
Your responses will be kept confidential; only the researcher and his major advisor will have access to your responses and response-related information. In addition, your responses will be kept anonymous. When the results of this study are presented or published, participants' names and other personally identifiable information will not be used; only results for the entire sample will be used. Finally, each completed survey will be assigned an ID number to help ensure anonymity and confidentiality.

Subject's Rights: Your participation is voluntary. You may stop participating at any time by closing the browser window to withdraw from this survey. Partial responses will not be analyzed.

Questions or Concerns: If you have any questions about this pilot study or the broader study of which it is a part, please contact:

Mr. Wayne Brown, Principal Investigator: brownw@easternflorida.edu

Dr. Tom Marcinkowski, Major Advisor: marcinko@fit.edu

Dr. Lisa Steelman, Chair, FIT IRB Committee: lsteelma@fit.edu

Dr. Mark Quathamer, Chair, EFSC IRB Committee, quathamerm@easternflorida.edu

By clicking through to the next page (Directions), you are indicating your consent to participate in this study.

Demographic Survey

1. Age:

2. Gender: M/F

Your Involvement at EFSC
3. On which EFSC Campus do you attend classes?

4. How many terms have you completed at EFSC?

5.a. Have you chosen a major?
b. If yes, which major(s)?
6.a. Have you participated in intercollegiate sports at EFSC?
b. If yes, on which team(s)?
7.a. Have you participated in Student Government at EFSC?
b. If yes, in which position(s)?
8.a. Have you participated in other extracurricular activities at EFSC?
b. If yes, please list those in which you are most active (up to three).

Family Background
9a., b., & c.: Parental Level of Education
Mother's Education Father's Education Parental Guardian (PG)
( ) 12th grade or less ( ) 12th grade or less ( ) 12th grade or less
( ) High School Diploma ( ) High School Diploma ( ) High School Diploma or equivalent or equivalent or equivalent
( ) Some college ( ) Some college ( ) Some college
( ) Bachelor's Degree ( ) Bachelor's Degree ( ) Bachelor's Degree
( ) Master's Degree ( ) Master's Degree ( ) Master's Degree
( ) Doctorate Degree ( ) Doctorate Degree ( ) Doctorate Degree

10a, b,& c.: Parental Occupation
a) Father_____ b) Mother_____ c) PG_____

11: SES
Please indicate your current household income in U.S. dollars:
( ) < $25,000 per year
( ) $25,001 – $44,999 per year
( ) $45,000 - $74,999 per year
( ) $75,000 - $99,999 per year

COVID Survey

Items	*n*	Distribution of Responses[2] S	A	N	D	SD	IMP	*M*	*SD*
1.The COVID-19 pandemic around the world does NOT really concern me									
2. The spread of COVID-19 across the U.S. has become a serious concern for me									
3. No one close to me (family or community) has been seriously affected by COVID-19									
4. COVID-19 has made my life very difficult									
5. Emotionally, I've found it easy to cope with everything going on as a result of COVID-19									
COVID Subscale									

Funderburk's African American Adolescent
Emotional Intelligence Survey

1. When I hear a rumor about someone, I usually tell someone else before I stop and think
about how that person might feel.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

2. Whenever someone is being rude to me, I think it is better for me to be quiet than to say
something about it.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

3. When someone is messing with me, or getting on my nerves, it usually ends up in a fight.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

4. When I am mad, I try to hide it.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

5. I would rather avoid defending myself, even if I feel bad.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

6. When another person starts a fight or argument with me, I fight or argue back.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

7. I prefer to avoid the situation whenever somebody is bothering me.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

8. When I see two people talking and laughing, I think they are talking about me.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

9. I am willing to get some of what I want and the other person get some of what they want in order to find an answer to a problem.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

10. If I don't like someone, I get other people to hate on them with me.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

11. When someone does not agree with me, I try to look at the situation from the other person's point of view.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

12. Before I get to know someone, I can tell what kind of person they are going to be.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

13. I usually get angry quickly and do something crazy without thinking about it.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

14. When I am not sure what someone is thinking or feeling, I feel comfortable asking them to tell me so that I can understand.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

15. When I see a fight, I say things out loud that keep the fight going.

1	2	3	4
Almost Never	Rarely	Sometimes	Almost Always

Identify the emotion in the picture. Choose the one emotion you think the picture shows. Next, circle the number closest to the intensity shown in the picture.

16. 

a) Happy
b) Surprised
c) Joyous
d) Ecstatic

17. 

a) Disinterested
b) Lonely
c) Hostile
d) Hopeful

18. 

a) Scared
b) Hurt
c) Bored
d) Reserved

19. 

a) Anxious
b) Embarrassed
c) Playful
d) Tired

20. 

a) Frustrated
b) Satisfied
c) Jubilant
d) Content

TEIQue-SF

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1 . . . . . 2 . . . . . 3 . . . . . 4 . . . . . 5 . . . . . 6 7

Completely Disagree **Completely Agree**

1. Expressing my emotions with words is not a problem for me. 1 2 3 4 5 6 7
2. I often find it difficult to see things from another person's viewpoint. 1 2 3 4 5 6 7
3. On the whole, I'm a highly motivated person. 1 2 3 4 5 6 7
4. I usually find it difficult to regulate my emotions. 1 2 3 4 5 6 7
5. I generally don't find life enjoyable. 1 2 3 4 5 6 7
6. I can deal effectively with people. 1 2 3 4 5 6 7
7. I tend to change my mind frequently. 1 2 3 4 5 6 7
8. Many times, I can't figure out what emotion I'm feeling. 1 2 3 4 5 6 7
9. I feel that I have a number of good qualities. 1 2 3 4 5 6 7
10. I often find it difficult to stand up for my rights. 1 2 3 4 5 6 7
11. I'm usually able to influence the way other people feel. 1 2 3 4 5 6 7
12. On the whole, I have a gloomy perspective on most things. 1 2 3 4 5 6 7
13. Those close to me often complain that I don't treat them right. 1 2 3 4 5 6 7
14. I often find it difficult to adjust my life according to the circumstances. 1 2 3 4 5 6 7
15. On the whole, I'm able to deal with stress. 1 2 3 4 5 6 7
16. I often find it difficult to show my affection to those close to me. 1 2 3 4 5 6 7
17. I'm normally able to "get into someone's shoes" and experience their emotions.1 2 3 4 5 6 7

18. I normally find it difficult to keep myself motivated. 1 2 3 4 5 6 7

19. I'm usually able to find ways to control my emotions when I want to. 1 2 3 4 5 6 7

20. On the whole, I'm pleased with my life. 1 2 3 4 5 6 7

21. I would describe myself as a good negotiator. 1 2 3 4 5 6 7

22. I tend to get involved in things I later wish I could get out of. 1 2 3 4 5 6 7

23. I often pause and think about my feelings. 1 2 3 4 5 6 7

24. I believe I'm full of personal strengths. 1 2 3 4 5 6 7

25. I tend to "back down" even if I know I'm right. 1 2 3 4 5 6 7

26. I don't seem to have any power at all over other people's feelings. 1 2 3 4 5 6 7

27. I generally believe that things will work out fine in my life. 1 2 3 4 5 6 7

28. I find it difficult to bond well even with those close to me. 1 2 3 4 5 6 7

29. Generally, I'm able to adapt to new environments. 1 2 3 4 5 6 7

30. Others admire me for being relaxed. 1 2 3 4 5 6 7

Scoring key: Reverse-score the following items and then sum up all responses

I often find it difficult to show my affection to those close to me. (R) 16

I often find it difficult to see things from another person's viewpoint. (R) 2

I normally find it difficult to keep myself motivated. (R) 18

I usually find it difficult to regulate my emotions. (R) 4

I generally don't find life enjoyable. (R) 5

I tend to change my mind frequently. (R) 7

I tend to get involved in things I later wish I could get out of. (R) 22

Many times, I can't figure out what emotion I'm feeling. (R) 8

I normally find it difficult to stand up for my rights. (R) 10

I tend to "back down" even if I know I'm right. (R) 25

I don't seem to have any power at all over other people's feelings. (R) 26

On the whole, I have a gloomy perspective on most things. (R) 12

Those close to me often complain that I don't treat them right. (R) 13

I find it difficult to bond well even with those close to me. (R) 28

I often find it difficult to adjust my life according to the circumstances. (R) 14

The Schedule of Racist Events

We are interested in your experiences with racism. As you answer the questions below, please think about your ENTIRE LIFE, from when you were a child to the present. For each question, please circle the number that best captures the things that have happened to you. Answer each question TWICE, once for what has happened to you IN THE PAST YEAR, and once for what YOUR ENTIRE LIFE HAS BEEN LIKE. Use these numbers:

Circle 1 = If this has NEVER happened to you
Circle 2 = If this has happened ONCE IN A WHILE (less than 10% of the time)
Circle 3 = If this has happened SOMETIMES (10%-25% of the time)
Circle 4 = If this has happened A LOT (26% - 49% of the time)
Circle 5 = If this has happened MOST OF THE TIME (50% - 70% of the time)
Circle 6 = If this has happened ALMOST ALL OF THE TIME (more than 70% of the time)

1. How many times have you been treated unfairly by *teachers and professors* because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire live?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you?	1	2	3	4	5	6

2. How many times have you been treated unfairly by your *employers, bosses and supervisors* because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

3. How many times have you been treated unfairly by your *coworkers, fellow students and colleagues* because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire live?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you?	1	2	3	4	5	6

4. How many times have you been treated unfairly by people in *service jobs* (store clerks, waiters, bartenders, bank tellers, and others because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

5. How many times have you been treated unfairly by *strangers* because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

6. How many times have you been treated unfairly by *people in helping jobs* (doctors, nurses, psychiatrists, case workers, dentists, school counselors, therapists, social workers and others) because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

7. How many times have you been treated unfairly by *neighbors* because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

8. How many times have you been treated unfairly by *institutions* (schools, universities, law firms, the police, the courts, the Department of Social Services, the Unemployment Office and others) because you are Black?

How many times in the past year?	1	2	3	4	5	6
How many times in your entire life?	1	2	3	4	5	6
	Not at all					Extremely
How stressful was this for you	1	2	3	4	5	6

9. How many times have you been treated unfairly by *people that you thought were your friends* because you are Black?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

10. How many times have you been *accused or suspected of doing something wrong* (such as stealing, cheating, not doing your share of the work, or breaking the law) because you are Black?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

11. How many times have people *misunderstood your intentions and motives* because you are Black?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

12. How many times did you want to *tell someone off for being racist but didn't say anything* because you are Black?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

13. How many times have you been *really angry about something racist that was done to you?*

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

14. How many times were you *forced to take drastic steps* (such as filing a grievance, filing a lawsuit, quitting your job, moving away, and other actions) to deal with some racist thing that was done to you?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

15. How many times have you *been called a racist name like n_____, a coon, jungle bunny, or other names?*

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

16. How many times have you *gotten into an argument or a fight about something racist that was done to you or to someone else?*

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

17. How many times have you been *made fun of, picked on, pushed, shoved, hit, or threatened with harm* because you were Black?

How many times in the past year?	1	2	3	4	5	6	
How many times in your entire life?	1	2	3	4	5	6	
		Not at all					Extremely
How stressful was this for you		1	2	3	4	5	6

18. How *different* would your life be now if you ***HAD NOT BEEN*** treated in a racist and unfair way

In the past year?

Same as now	A little different	Different in a few days	Different in a lot of ways	Different in most ways	Totally different
1	2	3	4	5	6

In your entire life?

Same as now	A little different	Different in a few days	Different in a lot of ways	Different in most ways	Totally different
1	2	3	4	5	6

Appendix B.

Permission to Use Instruments

Appendix B.1: Permission to Use the AAEIS……
Appendix B.2: Permission to Use the TEIQue-SF……
Appendix B.3: Permission to Use the SRE……

Appendix B.1: Permission to Use the AAEIS

Sent: Wednesday, December 06, 2017 3:45 PM

To: Wayne Brown

Hi Wayne,

Thank you for your email explaining some of your research. Yes, it will be fine for you to use the AAEIS for this purpose. I would love to see the finished product and hear how the research turns out for you.

Take care,

Nannette Smith Funderburk, Ph.D., LPCS

The Social and Emotional Learning Group, PLLC

Appendix B.2: Permission to Use the TEIQue-SF

Dear Wayne,

11/15/2017

Thank you for your email. You do not need special permission to use any TEIQue form in your research. Please see our FAQ at http://www.psychometriclab.com/Home/Default/18

You can download the various TEIQue forms from the same website (see menu on the left), which also incorporates an automated on-line scoring system for the TEIQue and TEIQue-SF. For scoring information, please check http://www.psychometriclab.com/Home/Default/15

I hope this helps,

Dino

K V Petrides

www.psychometriclab.com

Appendix B.3: Permission to Use the SRE

On Oct 1, 2019, at 5:22 PM, Elizabeth Klonoff <Elizabeth.Klonoff@ucf.edu> wrote:
You have permission to use the scale. Good luck with your research.

Elizabeth A. Klonoff, Ph.D., ABPP
Vice President for Research and Dean of the College of Graduate Studies
University of Central Florida
4365 Andromeda Loop North, MH 243
Orlando, FL 32816-0005

Elizabeth.Klonoff@ucf.edu
Office: 407-823-5538

Appendix C.

Additional Analysis Materials, Tables, and Figures

Appendix C.1. Personal Communications from Dr. R. White Pertaining to Analysis of Missing Data Patterns

Appendix C.2. SPSS Output Files Pertaining to Missing Data Patterns

Appendix C.3. Scatterplots of AAEIS and TEIQue-SF Scores Used to Test Assumption #3 for Spearman Correlation Analyses

Appendix C.1. Personal Communications from Dr. R. White

Pertaining to Analysis of Missing Data Patterns

Ryan White

To: Wayne Brown

Thu 1/13/2022 9:42 AM

Hi Wayne. While I'm not familiar with SPSS, but it sounds like SPSS does not like the dimensionality of your data.

The way the software is written seems to have a limit.

There's no mathematical reason for this as far as I know.

Ryan White

To: Wayne Brown
Cc: Tom Marcinkowski

Mon 2/28/2022 2:12 AM

MCAR-apologetics.docx
I wrote up this stuff in the attached file.

Best,
Rw

Ryan T. White, Ph.D.
Assistant Professor
Department of Mathematical Sciences
Florida Institute of Technology
www.ryantwhite.com
(321) 848-8301

Ryan White

To: Wayne Brown

Sat 11/27/2021 8:00 PM

Hi Wayne,

Sorry, my schedule is incredibly busy this upcoming week, so I was trying to work out some other scheduling. I can join on Zoom Monday from 10-10:30.

Now that the estimation for the MCAR test converged, below is my point of view:

(1) This result of the test is good. The null hypothesis of the test is that the data are MCAR, so a p-value of 0.2 does not great statistical evidence to reject it.

(2) It's not clear the test is valid for use with categorical/ordinal variables. SPSS allows it to run somehow, but I'm not aware of a justification for its use based on Little's paper.

(3) The data visualization I did with PCA previously supports the MCAR assumption.

(4) I recommend explaining parts (1)-(2) above, acknowledge this is imperfect, and provide an explanation of the evidence found in (3) to support the assumption (I will write it), and carry on with the analysis.

(5) Is it possible for me to provide some language on (3) during finals week or do you need something sooner?

Best,
Rw

Appendix C.2. SPSS Output Files Pertaining to Missing Data Patterns

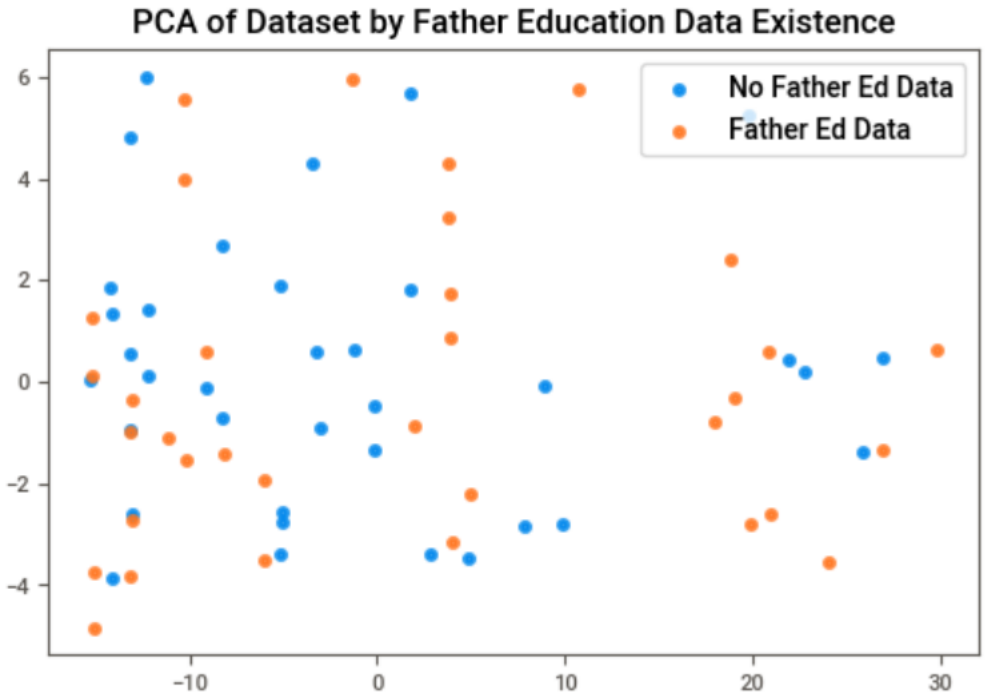
Little's test (Little 1988) for data missing completely at random (MCAR) was run with the SPSS, and it did not produce statistically significant evidence to reject the null hypothesis that father's education data is MCAR ($p = 0.2$).

While SPSS permitted this test to be run, the paper by Little assumes the data may be modeled as a multivariate normal distribution, or at least the data are quantitative with sufficiently large sample size. However, the test is not suitable for categorical variables (see Little 1988 or Li 2013), as are contained in the data collected in this study.

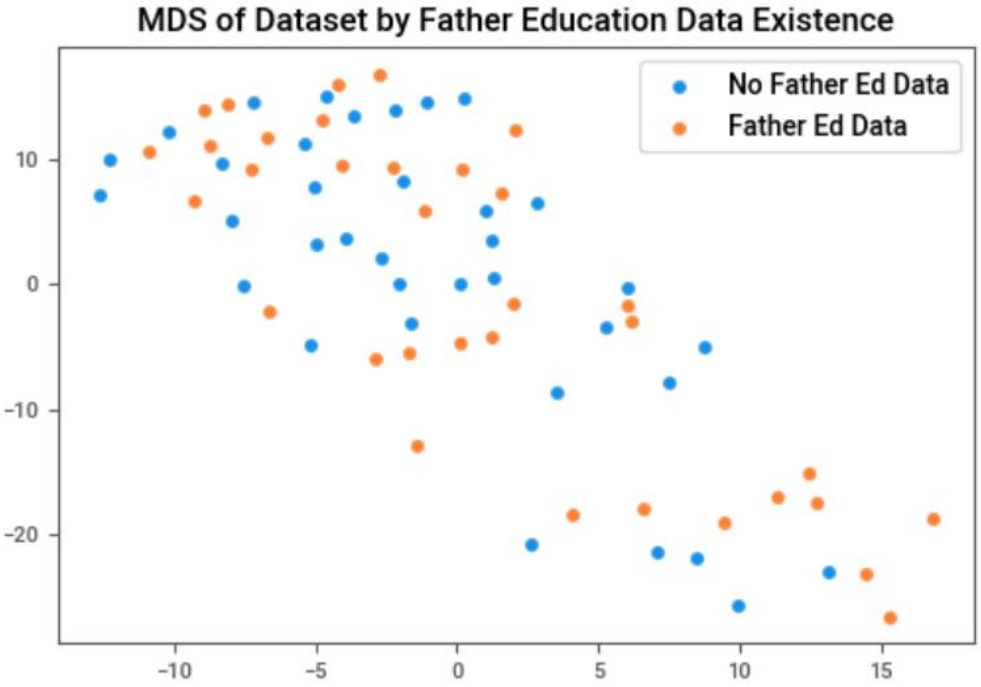
As a safeguard, we took an additional approach to gather further evidence that missing father's education data as a safeguard. We pursue an unsupervised machine learning task of dimensionality reduction for data visualization. Leaving out father's education, each subject's responses to the questions are represented as a vector in the 31-dimensional vector space, which is not possible to visualize in the usual sense. These methods project high-dimensional vectors onto a 2-dimensional space we can visualize in such a way that captures certain features of the vectors.

There are many such methods in the literature, but we use three of the most common methods: principal component analysis (PCA), multidimensional scaling (MDS), and *t*-stochastic neighbors embedding (t-SNE). For each method, we construct a 2-dimensional plot with data vectors color-coded by availability of father's education data to seek evidence of some qualitative differences between these two groups of vectors.

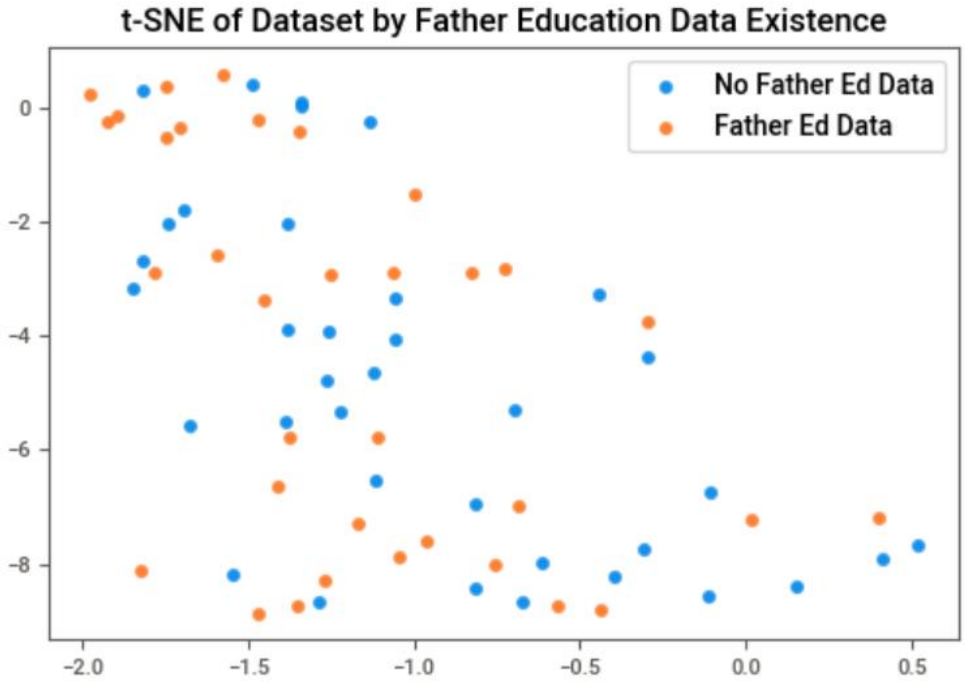
PCA projects the vectors into the 2-dimensional vector space that preserves the maximal total variance (Zaki and Meira, Jr. 2020). In this case, the 2D projection 90.5% of the variance in the original data, and the figure below shows no meaningful structure indicating the availability of father's education data impacts the nature of the vectors by the PCA criteria.



MDS (Kruskal, 1964a) aims to preserve the pairwise distances between vectors in the original high-dimensional space and in the 2-dimensional space. By this wholly different metric, the data with and without father's education do not indicate some qualitative difference.



t-SNE (Van der Maaten and Hinton 2008) is a probabilistic approach that constructs a probability distribution of pairs of vectors in high-dimensional space such that closer points have a higher probability. It then embeds these points into a 2-dimensional space such that the equivalent probability distribution over pairs of 2-dimensional vectors is as similar to the original as possible (in the sense of minimizing Kullback-Keibler divergence between the distributions). It is especially adept as pushing more similar points closer together in the 2-dimensional space and less similar points further from one another, revealing any natural clusters in the data. However, as the graph below shows, this method applied to our dataset fails to find such clusters, suggesting the availability of father's education is not exerting much influence on the vectors.



To summarize, SPSS indicates Little's test fails to find statistically significant evidence the father's education data is not MCAR. However, this capability of SPSS is of questionable applicability since our dataset includes categorical variables, so we additionally carried out several methods for dimensionality reduction for data visualization. Three methods (PCA, MDS, and t-SNE), each reducing dimension in an entirely different criterion, failed to reveal structure in the data indicating the availability of father's education has particular influence on the data vectors. As such, we conclude there is good evidence to accept the MCAR assumption.

Appendix: Data Preprocessing Code

Data preprocessing was performed with the Python programming language with the pandas and NumPy libraries.

The data was read into computer memory and preprocessed into a matrix containing the columns stored numerically without missing data along with the father's education (missing in 34 of 70 cases).

```
import numpy as np
import pandas as pd

# read data from CSV file
data = pd.read_csv('data.csv')

# columns for analysis (father education + columns without missing
# data)
useful_columns = [5, 6, 7, 8, 9, 11, 13, 15, 17, 27, 37, 42,
                  43, 44, 45, 46, 48, 49, 51, 52, 53, 54,
                  56, 57, 58, 60, 61, 63, 64, 66, 67, 70]

# extract only the specified data columns
data = data[data.columns[useful_columns]]

# convert the data to float
data = data.astype('float')

# convert data to a numpy array but drop father's education
X = data.drop('Q13', axis = 1).to_numpy().astype(float)

# convert father's education existence to a binary numpy array
y = data['Q13'].isna().astype(float)

target_names = ['No Father Ed Data', 'Father Ed Data']
```

The resulting matrix is 70 x 32 for the 70 subjects, each with 32 features.

Appendix: PCA, MDS, and t-SNE Code

All three methods were carried out with the scikit-learn library for Python. In each case, high-dimensional vectors are visualized in two-dimensions and plotted with color-coding indicating the presence or absence of father's education data.

First, PCA:

```
import matplotlib.pyplot as plt
from sklearn.decomposition import PCA

# apply PCA
pca = PCA(n_components=2)
X_r = pca.fit(X).transform(X)

# print the percentage of variance explained by each component
print('explained variance ratio (first two components): %s' %
str(pca.explained_variance_ratio_))

# plot the points color-coded by data inclusion
plt.figure()

# plot the projected points for points where father education data is
# and is not present
for i, target_name in enumerate(target_names):
    plt.scatter(X_r[y == i, 0], X_r[y == i, 1], alpha=.8, lw=2, label=target_name)

# add a legend and title
plt.legend(loc='best', scatterpoints=1)
plt.title('PCA of Dataset by Father Education Data Existence')
```

Second, MDS:

```
import matplotlib.pyplot as plt
from sklearn.manifold import MDS

# apply MDS
mds = MDS(n_components=2)
X_r = mds.fit_transform(X)

# plot the points color-coded by data inclusion
plt.figure()

# plot the projected points for points where father education data is
# and is not present
for i, target_name in enumerate(target_names):
    plt.scatter(X_r[y == i, 0], X_r[y == i, 1], alpha=.8, lw=2, label=target_name)

# add a legend and title
plt.legend(loc='best', scatterpoints=1)
plt.title('MDS of Dataset by Father Education Data Existence')
```

Third, t-SNE:

```
import matplotlib.pyplot as plt
from sklearn.manifold import TSNE

# apply t-SNE
tsne = TSNE(n_components=2)
X_r = tsne.fit_transform(X)

# plot the points color-coded by data inclusion
plt.figure()

# plot the projected points for points where father education data is
# and is not present
for i, target_name in enumerate(target_names):
    plt.scatter(X_r[y == i, 0], X_r[y == i, 1], alpha=.8, lw=2, label=target_name)

# add a legend and title
plt.legend(loc='best', scatterpoints=1)
plt.title('t-SNE of Dataset by Father Education Data Existence')
```

References

Roderick J. A. Little (1988) A Test of Missing Completely at Random for Multivariate Data with Missing Values, *Journal of the American Statistical Association*, 83:404, 1198-1202, DOI: 10.1080/01621459.1988.10478722

Cheng Li (2013) Little's Test of Missing Completely at Random. The Stata Journal. 2013;13(4):795-809. DOI: 10.1177/1536867X1301300407

Mohammed J. Zaki and Wagner Meira, Jr. (2020) *Data Mining and Machine Learning: Fundamental Concepts and Algorithms*, 2nd Edition, Cambridge University Press. Chapter 7: Dimensionality Reduction. ISBN: 978-1108473989.

Joseph B. Kruskal (1964a) Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis. *Psychometrika* 29, 1–27. DOI: 10.1007/BF02289565

Appendix C.3. Scatterplots of AAEIS and TEIQue-SF Scores Used to Test Assumption #3 for Spearman Correlation Analyses

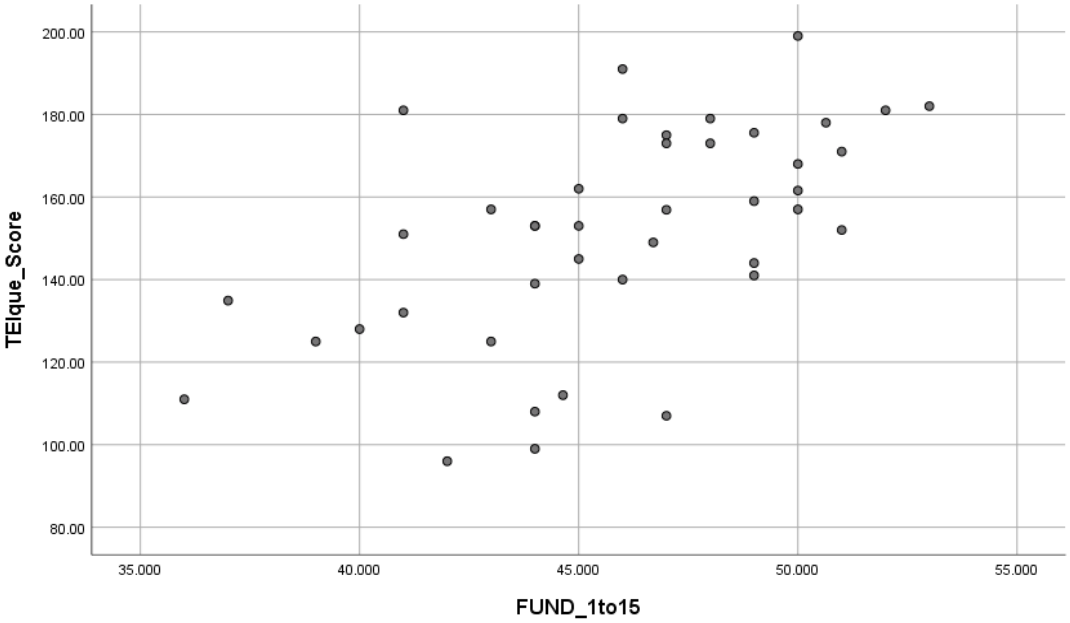


Figure 4.5. Scatterplot of AAEIS by TEIQue-SF scores.

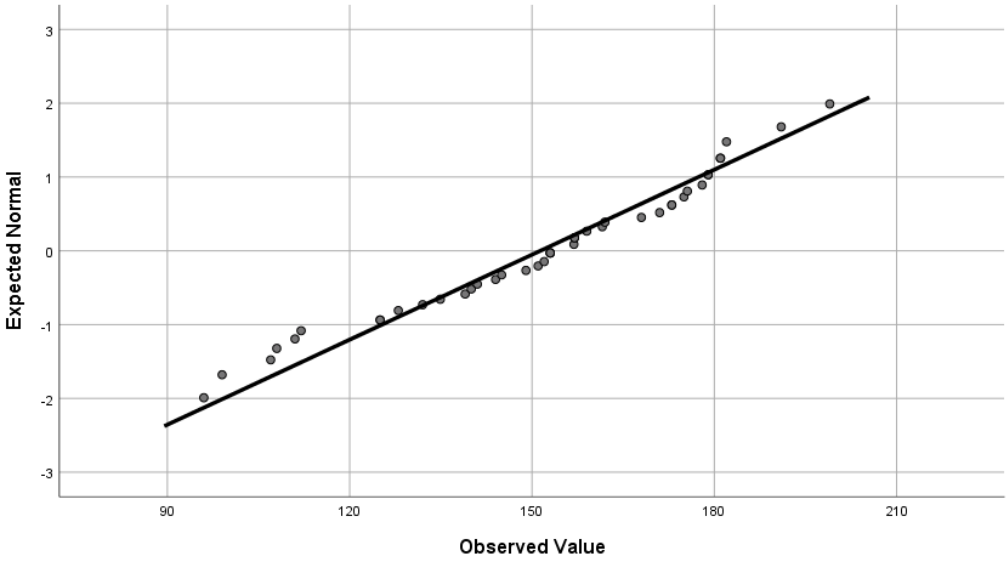


Figure 4.3. Q-Q plot for the distribution of TEIQue-SF total scores.

Appendix D

Raw Data

The raw survey data may be available from the researcher upon request.

Note: This raw data set does not reflect any of the following:
(a) the elimination of unusable (invalid or incomplete) responses;
(b) reverse scoring of responses to negatively worded items;
(c) dummy or ordinal coding of responses; or
(d) imputed values for missing responses.