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# The Interaction of Adversity, Hope, Social Support, and Academic Resilience in Emerging Appalachian Adults

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**Doctor of Education in Organizational Leadership**

Dr. Joey Cope, Dean of the College of Graduate and Professional Studies

September 5, 2020

Dissertation Committee:

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Dr. Rick Zomer

Abilene Christian University

School of Educational Leadership

# The Interaction of Adversity, Hope, Social Support, and Academic Resilience in Emerging Appalachian Adults

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Organizational Leadership

by

Daniel Joseph Gottron Jr.

September 2020

## Dedication

For God, my family, and the incredible people of Appalachia, especially my great friends in the state of West Virginia.

**Acknowledgements**

Reflecting upon this dissertation journey, there are many individuals who provided support, encouragement, guidance, and hope to me over the course of my research and writing. I am indebted to you more than you probably realize. Without these individuals, there is zero chance I would have completed this dissertation.

I do want to take time to personally acknowledge some who were part of this group, but please know that if you are not mentioned here that it does not mean you are unappreciated. I am very fortunate to have had such a great group of family, friends, mentors, and colleagues walk with me for part or all of this journey, and to name everyone would wind up a longer document than the dissertation itself.

First, I must acknowledge God and the way my faith journey is my dissertation journey. I see no scenario in which the twists and turns that have led me to a completed dissertation on this topic could have been purely the result of my own interests and pursuits. There have been far too many chance encounters and unexpected changes to have been of my own doing. If it were purely my journey, then I would have quit writing a long time ago, or perhaps never made it past the course work to begin writing. At the lowest points, something pushed me to keep going.

Second, my wife Heidi deserves tremendous credit for her level of support. She has made so many sacrifices and picked up so much extra slack during this process in order to help me through. I know that putting up with my late nights and early mornings could not have been easy, but it was done with grace.

Along with Heidi, I would like to acknowledge my children, Guy, Joanna, and Samantha. I hope they do not even know I have been writing a dissertation, as I tried very hard to not allow it to take away my time with them, but they were a huge driving force for me to keep working. It

was of top priority to finish my dissertation before my children started school, and before they were old enough to remember me working long hours writing a paper. Knowing that they were growing with every passing moment motivated me to keep up the pace.

Additionally, my parents have always served as a source of inspiration and encouragement, including during the dissertation process. They instilled in me the hard work, determination, and perseverance without which I could not have made it to this point. The same is true of my siblings, Jennifer, Michael, and John, who I spent most of my childhood competing with. These competitions made me better and forced me to try harder at all things, which came in very handy while navigating the dissertation process.

I also owe a debt of gratitude to Dr. Peter Williams for his guidance and support in navigating the dissertation process. Our countless phone conversations, email exchanges, and Zoom video conferences were invaluable in helping me reach the milestone of a completed dissertation. His willingness to freely share resources, offer feedback and input, and shepherd me through this process all helped me through the many difficult and uncertain parts of the process.

This same gratitude is extended to Dr. Robert Haussmann and Dr. Rick Zomer, who joined Dr. Williams as members of my dissertation committee. Dr. Zomer's background and experience in working with youth and young adults made a huge impact on the selection of the emerging adult age range, while his emphasis on making the study more accessible to individuals from adverse backgrounds helped me think through the best approaches to recruiting participants. Without Dr. Haussmann's incredible knowledge of statistics and quantitative analysis, it is a certainty that this study would never have come close to completion, or even gotten started for that matter. On multiple occasions, I found myself completely stuck on what to

do, and Dr. Haussmann provided the road map forward. They each brought a unique and important perspective to the study, both willingly helping and sharing throughout the process.

Last, but certainly not least, I would like to recognize my students, colleagues, and friends from my time in the great state of West Virginia. While both my interest area and the focus of this study extends to the entire Appalachian region, West Virginia is the heart of it. During some wonderful years there, I learned so much about the values and priorities that make West Virginia a truly wonderful place. The stereotypes and labels that frequently malign Appalachia are not just untrue and inaccurate but are a gross mischaracterization of reality. The reality that I have experienced over and over is one of extremely intelligent, hardworking, dedicated, supportive, and loyal people. This dissertation is my attempt to bring this reality to the forefront, and I intend to continue fighting for this well after the conclusion of this study.

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## Abstract

The negative impact of adverse childhood experiences on both short-term and long-term well-being has been repeatedly validated across multiple populations. While adverse childhood experiences have been thoroughly researched in many contexts, this is not the case for Appalachia, which has often been relegated to the fringe of scholarly research, resulting in an overall lack of research on Appalachia. Further lacking is research into how protective factors might be utilized to help overcome adversity. While some recent research on the relationship between adverse childhood experiences, hope, and resilience has been conducted, it too has been limited to select populations. It is for these reasons that this quantitative cross-sectional study of the relationship between adversity, hope, resilience, and perceived social support among emerging Appalachian adults was conducted. The study included 200 emerging Appalachian adults who submitted survey responses on their level of exposure to adverse childhood experiences, level of hope, level of academic resilience, and level of perceived social support. The data were analyzed using correlation analysis, linear regression analysis, and mediation and moderation analysis. The results very clearly illustrated and reinforced the negative implications of adverse childhood experiences. However, the results also reflected that higher levels of perceived social support amplified hope in individuals who have experienced adverse childhood experiences and indicated that higher levels of hope positively correlated to academic resilience. These findings supported the notion that while exposure to adverse childhood experiences is detrimental, hope can be harvested to help individuals display resilience in the face of adversity.


*Keywords:* Appalachia, ACEs, hope, resilience, social support

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# Chapter 1: Introduction

Stretching the length of the Appalachian Mountain range in the Eastern United States, the Appalachian region spans 200,000 miles and encompasses 13 different states (Appalachian Regional Commission, 2019). Approximately 25 million people reside in Appalachia, with 42% of this population living in locations classified as rural, more than double the national average of 20% (Appalachian Regional Commission, 2019).

Despite both a sizeable geographic footprint and substantial population, rural areas such as the Appalachian region have typically been relegated to the periphery of scholarly research (Schafft, 2016). There has been a far greater research focus on the urban context (Schafft, 2016), which has resulted in an overall lack of research on the Appalachian context (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011).

What is known about Appalachia is that many of its communities are isolated from critical resources such as grocery stores, medical care, and appropriate housing (Ali & Saunders, 2006, 2009; Cooke-Jackson & Hansen, 2008; Semke & Sheridan, 2011). This isolation, and other related issues, has resulted in an outsized percentage of places in Appalachia experiencing persistent poverty (Bright, 2018).

## Background of the Problem

Appalachian youth are particularly impacted by this chronic poverty, as it results in barriers at the individual, peer, family, and school levels (Byun et al., 2012; Evans et al., 2016; Hoffman et al., 2017; Smokowski et al., 2013). Specifically, these barriers include interpersonal victimization, financial strain, and adverse life events (Banyard et al., 2017; Hardaway et al., 2012; Smokowski et al., 2013).

The presence of such childhood difficulties, collectively known as adverse childhood events (ACEs), bring with them an array of negative outcomes (Banyard et al., 2017). For example, exposure to adversities can lead to numerous childhood problems, including poor mental health outcomes and reduced quality of physical well-being (Banyard et al., 2017; Hoffman et al., 2017). These negative outcomes have additionally been shown to carry from childhood into adulthood (Bright, 2018).

Beyond the presence of ACEs, there are a multitude of other home, school, and community barriers that might impact the academic development of a child. While not necessarily classified as traumatic experiences, these barriers are especially likely to be the reality for children who already face chronic poverty and exposure to ACEs (Werner, 1989), thus compounding the situation.

Repeated academic struggles resulting from these barriers can reduce student self-efficacy and desire to continue pursuing academic advancement (Ali & Saunders, 2009). There is also a lack of available academic role models in rural Appalachia, with many who pursue educational aspirations leaving the area (Ali & Saunders, 2009). In many cases, the primary adults in an Appalachian student's life are not familiar with the college exploration and application process or themselves have low levels of academic development (Ali & Saunders, 2006; Irvin et al., 2012). Family realities of rural youth serve to further hinder academic development, with many youth feeling pressures to take care of family members rather than pursue academic goals (Irvin et al., 2012). Pressures to maintain relationships and friendships have also discouraged rural youth from pursuing further academic development (Irvin et al., 2012).

Further complicating the pathway to student academic development is the fact that rural isolation and low levels of parental education contribute to a lack of quality partnerships between the home and school contexts as well as a lack of parent participation in educational decisions (Semke & Sheridan, 2011). Given that family and school connections have been shown to significantly impact student academic achievement (Semke & Sheridan, 2011), this lack of partnerships is concerning.

While exposure to extreme poverty and ACEs, along with other barriers, can be detrimental, there are youths that not only survive but also thrive. As noted by Werner (1989), "even in the most discordant and impoverished homes, and beset by physical handicaps, some children appear to develop stable and healthy personalities, and display a remarkable degree of resilience in the face of life's adversities" (p. 72). However, for every high-risk child that displays resilience, there are others that succumb to the barriers and challenges standing in front of them (Werner, 1989). The deciding factor between whether a child displays resilience appears to be the development of supportive and protective elements that help them overcome adversity (Werner, 1989). The greater the number and severity of ACEs in a child's life, the more protective factors they were likely to be needed to support continued resilience (Werner, 1989).

Resilience has been defined as both the capacity to successfully overcome challenging circumstances and the pattern of adapting to adversity (Cassidy, 2016). There are numerous types of resilience, with one notable type referred to as academic resilience (Cassidy, 2016). The presence of academic resilience allows an individual to overcome adversity that might threaten educational development (Cassidy, 2016). Those with academic resilience tend to succeed while others around them struggle and even fail (Cassidy, 2016).

One of the critical supportive strengths has proven to be the high levels of hope (Grund & Brock, 2019; Hellman et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). The presence of hope has shown to be connected to both resiliency and overall well-being (Grund & Brock, 2019; Hellman et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018).

Unfortunately, children experiencing significant adversity or traumas tend to have reduced hope (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). These reduced levels of hope result in significant psychological, cognitive, behavioral, and physiological setbacks (Baxter et al., 2017; Grund & Brock, 2019; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003) such as higher frequencies of self-doubt, depression, interpersonal struggles, anxiety, and even suicide (Munoz, Pearson et al., 2018; Rasmussen et al., 2018; Snyder, 2002; Snyder et al., 2003).

Given the critical role hope plays in fostering resiliency, it is important to acknowledge the role supportive, or protective, factors may play in sustaining hope through adversities and other barriers. The presence of a lasting positive relationship with a trusted adult has shown to be particularly powerful in supporting increased hope (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018; Werner, 1989).

**Statement of the Problem**

Thirty years ago, Werner (1989) issued a powerful and lasting statement for what is needed, stating “the challenge of the future is to discover how the chain of direct and indirect linkages between protective factors is established over time so as to foster escape from adversity

for vulnerable children" (p. 81). In the three decades since Werner's (1989) call, much has been established about the protective factors that help foster hope and resiliency in children from adverse backgrounds. Notably, lasting supportive relationships with an adult caregiver have been found to increase hope (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018).

While the relationship between adverse childhood events, hope, and resilience has been established, the research indicating these links has been limited to selected populations (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Hellman et al., 2018; Munoz, Pearson et al., 2018; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018), with further research needed from more diverse samples (Munoz, Pearson et al., 2018). Additionally, the optimal developmental window for building supportive relationships has not been established (Arincorayan et al., 2017). This lack of diversity echoes the overall scarcity of research regarding Appalachia (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011). For all these reasons, there is a clear and urgent need for further study of adversity, resilience, and hope in Appalachian youth.

**Purpose of the Study**

The purpose of this quantitative cross-sectional study is to examine the relationship among hope, resiliency, adversity, and perceived social support in the lives of Appalachian emerging adults. These relationships were explored through the use of five quantitative instruments, the Adverse Childhood Experience (ACE) scale (Felitti et al., 1998), the Adult Hope Scale, also known as the Trait Hope Scale or Dispositional Hope Scale (Snyder et al., 1991), the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988; see Appendix A), the Academic Resilience Scale (ARS-30; Cassidy, 2016), and the Multifactoral Assessment of Perceived Social Supports (MAPSS; Fredericksen et al., 2019). I looked

specifically at Appalachian emerging adults between the ages 18–29 (Arnett, 2000; Brown et al., 2009) who have spent the majority of their social and academic development in the Appalachian region.

## Research Questions

**Q1.** What is the relationship between adversities as measured by the Adverse Childhood Experiences (ACE) scale and hope as measured by the Dispositional Hope Scale?

**Q2.** What is the relationship between hope as measured by the Dispositional Hope Scale and academic resilience as measured by the Academic Resilience Scale (ARS-30)?

**Q3.** How does adversity as measured by the Adverse Childhood Experiences (ACE) scale and hope as measured by the Dispositional Hope Scale, predict academic resilience as measured by the Academic Resilience Scale (ARS-30)?

**Q4.** How does perceived social support as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) and the Multifactoral Assessment of Perceived Social Support (MAPSS) short form interact with hope to predict academic resilience among emerging adults in Appalachia?

## Hypotheses

The following hypotheses were included in the study. These hypotheses were developed in response to the intended research questions and are based upon the review of available literature related to adversity, social support, hope, and academic resilience. A visual depiction of these hypotheses is illustrated in Appendix B.

**H1.** Among emerging Appalachian adults, there will be a negative correlation between exposure to adverse childhood events and levels of hope.

**H2.** Among emerging Appalachian adults, there will be a positive correlation between perceived social support and hope.

**H3.** Among emerging Appalachian adults, there will be a positive correlation between hope and academic resilience.

**H4.** Among emerging Appalachian adults, hope will play a moderating role in the relationship between adverse childhood experiences and academic resilience.

**H5.** Among emerging Appalachian adults, perceived social support will play a moderating role in the relationship between adverse childhood experiences and hope.

## Definition of Key Terms

For clarity and understanding, it is necessary to define several key terms that will be used repeatedly throughout the study. The following terms and definitions represent the way they are utilized in this study.

**Academic resilience.** From an achievement standpoint, academic resilience is the ability to persevere when faced with adversity that threatens to harm the academic development of a student (Cassidy, 2016). A student who displays academic resilience can succeed academically in a situation where others continue to struggle and fail (Cassidy, 2016). Additionally, students who are academically resilient are able to reverse their own personal academic misfortune, flourishing in spite of adversity (Cassidy, 2016).

**Adverse childhood event.** An adverse childhood event (ACE) is defined as childhood exposure to one or more occurrences of abuse or household dysfunction (Felitti et al., 1998). Abuse includes psychological, physical, or sexual abuse, while household dysfunction includes elements such as exposure to substance abuse, mental illness, violent behavior toward a parental

figure, or criminal behavior (Felitti et al., 1998). These adverse events are quantified using the adverse childhood experiences (ACE) scale (Felitti et al., 1998).

**Appalachia.** Appalachia is defined as an approximately 200,000 square mile region that traces the Appalachian Mountains through all of West Virginia and parts of 12 other states (Appalachian Regional Commission, 2019). Appalachia is broken down into northern, central, and southern subregions (Appalachian Regional Commission, 2019). Almost half of the Appalachian population is rural, which is more than double the national population breakdown (Appalachian Regional Commission, 2019).

**Emerging adults.** Emerging adults have been defined as individuals between the ages of 18 and 25, with emerging adulthood often stretching as late as age 29 (Arnett, 2000; Brown et al., 2009). More than an age range, emerging adulthood is reflective of the life stage after the conclusion of adolescence but prior to the full responsibilities of adulthood (Arnett, 2000).

**Hope.** Hope is defined as a state of positive motivation marked by goal setting and development of avenues to achieve these goals (Snyder, 2002). Hope is comprised of both agency thinking, or goal-directed thinking, and pathway thinking about how to reach goals (Snyder, 2002).

**Perceived social support.** Perceived social support is defined as the belief that an individual has support available from others in the form of love, accompaniment, care, attention, respect, and assistance (Seyyedmoharrami et al., 2018).

**Resilience.** Resilience is defined as the ability to achieve a successful outcome in the face of challenging or threatening situations (Cassidy, 2016).

**Social support.** Social support has been defined as being loved and cared for by others (Kim et al., 2008). Social support includes the presence of communication and mutual responsibility (Kim et al., 2008).

**Young adulthood.** The phase of life that follows emerging adulthood, which is marked by accepting responsibility for one's self, making independent decisions, and making financially independent decisions (Arnett, 2000). Some individuals reach young adulthood as early as age 19, while some individuals reach the end of their 20s without transitioning to young adulthood (Arnett, 2000).

## Chapter Summary

Children in the Appalachian region face significant adversity resulting from factors such as persistent poverty and lack of home, school, and community support. These adversities are compounded by the prevalence of stereotypes and marginalization of the Appalachian people and culture. The presence of these barriers and adversities frequently manifests in the form of limited social and emotional development, physical and mental health problems, behavioral issues, and a lack of academic development. While many students succumb to the crushing weight of these barriers and adversities, a significant percentage display hope and resilience in the face of great challenges.

While there is a limited research base regarding these interactions between adversity, supportive factors, hope, and resilience, there is a clear need for more study of these topics (Munoz, Pearson et al., 2018). This same lack of research base is apparent for scholarly research focused on rural areas in general, and Appalachia, specifically (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Schafft, 2016; Semke & Sheridan, 2011). It is because of the lack of existing

research regarding these topics, and because of the significant positive impact that further research may have on the lives of Appalachian youth, that this study was conducted.

## Chapter 2: Literature Review

Children in the Appalachian region face significant adversity resulting from factors such as persistent poverty and a lack of home, school, and community support. These adversities are compounded by the prevalence of stereotypes and marginalization of the Appalachian people and culture. The presence of these barriers and adversities frequently manifests in the form of limited social and emotional development, physical and mental health problems, behavioral issues, and a lack of academic development.

While many students succumb to the crushing weight of these barriers and adversities, a significant percentage display hope and resilience in the face of great challenges. However, there currently exists limited research regarding the interactions of adversity, hope, and resilience in Appalachian youth. This limited knowledge base is the crux of the problem that is to be investigated, which is the examination of the relationship among hope, resilience, and adversity within the specific population of Appalachian emerging adults. The key elements the research intends to explore include the manner in which hope may mitigate adversity in order to produce academic resilience and the extent to which social support may increase the presence of hope.

This review of existing literature and ensuing study intends to build upon what is known about hope and resilience in emerging Appalachian adults, with a particular focus on academic development. In order to develop a thorough and comprehensive review of the existing literature, multiple keyword searches were conducted for terms related to the research. Examples of search terms included words and phrases such as Appalachia, adverse childhood experiences, emerging adults, hope, resilience, and social support. In addition to individual keyword searches, these phrases were searched in conjunction with each other (i.e., Appalachia + emerging adults). Searches were conducted through both the Abilene Christian University library and Google

Scholar, with results filtered to include only full-text research articles in peer-reviewed scholarly journals. Another method utilized to obtain relevant research articles involved scanning the reference list of articles to find studies that may have been cited as part of the foundation for more recent research studies. The cited by feature in Google Scholar was also utilized to search for current research that built upon previously published studies.

The literature review begins with a discussion of what is known about the Appalachian region and the barriers and challenges present for children growing up in this area. The review then moves to evaluate ACEs and the detrimental effect they can have on the development and life of an individual. From here, I look at resilience, social support, and the critical support role that hope plays in fostering resilience.

**Theoretical Framework**

Appalachian youth experience adversity at high rates, and without intervention it is likely that they will struggle mightily under the weight of these adverse experiences (Banyard et al., 2017; Bright, 2018; Felitti et al., 1998; Norman et al., 2012; Shonkoff & Gardner, 2011; Southwick et al., 2014; Werner, 1989). As these traumas take their toll, they are likely to reduce hope (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). This loss of hope can cause setbacks in regard to psychological, cognitive, behavioral, and physiological development (Baxter et al., 2017; Grund & Brock, 2019; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003)

It is theorized that the effects of these traumas can be mitigated through the presence of supportive elements (Shonkoff & Gardner, 2011; Werner, 1989). These supports include a lasting positive relationship with a trusted adult (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018; Werner,

1989), strong family connections and support (Ali & Saunders, 2006; Werner, 1989), nonfamily social support (Banyard et al., 2017), counseling support (Irwin et al., 2012), and strong connections to a school community (Semke & Sheridan, 2011).

Among these mitigating protective factors, the presence of hope has emerged as a critical supportive strength (Grund & Brock, 2019; Hellman, Munoz et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). Those with hope that is fostered in the face of adverse experiences will theoretically develop increased resilience, overcoming adversity and succeeding when others around them might fail (Cassidy, 2016; Southwick et al., 2014; Werner, 1989).

It is expected that emerging Appalachian adults from adverse backgrounds will encounter either supportive factors or barriers to academic development. Those who do not encounter enough supportive factors will in turn experience decreased hope and low levels of academic resilience, while those who do experience high levels of support will develop increased academic resilience. This research will attempt to validate the notion that those who encounter what Werner (1989) refers to as a chain of protection fostered over time are much more likely to possess the positive trait of academic resilience. It is believed that these individuals will be much more likely to succeed academically despite their background and will continue to persevere when others struggle and fail.

**Appalachian Realities**

Growing up in the Appalachian region means facing a complex array of challenges, misperceptions, and pressures. While Appalachia has a deep and rich cultural heritage, these positive elements are frequently overshadowed by some harsher realities such as normalized stereotypes and mistreatment by people in other regions (Cooke-Jackson & Hansen, 2008).

These stereotypes and mistreatments are reinforced by outside stereotypes of Appalachian people as ignorant, lazy, uneducated, and incestuous (Cooke-Jackson & Hansen, 2008).

An overall lack of research regarding Appalachia exists (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011) in conjunction with the demeaning attitude and outlook that is reflected in the existence of negative stereotypes (Cooke-Jackson & Hansen, 2008) and the marginalization of the Appalachian people. Some have even gone as far as to call the Appalachian people a forgotten minority (Nadel & Sagawa, 2002; O'Hare, 2009). In capturing this forgotten and neglected status, Appalachian author Gurney Norman noted in Billings et al. (1999) that Appalachian people are often not afforded the same societal protections as other historically marginalized people groups, such as Native Americans, Hispanics, African Americans, and women.

Compounding these external perceptions are difficult realities that exist for many Appalachian youth. The isolated nature of many Appalachian communities can limit access to critical resources such as grocery stores, medical care, and appropriate housing (Ali & Saunders, 2006, 2009; Cooke-Jackson & Hansen, 2008; Semke & Sheridan, 2011). One example of this limited access is reflected in the lack of mental health support available to many Appalachian youth (El-Amin et al., 2018). Communities lacking suitable mental health support see increased instances of deaths caused by drug and alcohol overdoses, suicides, and diseases associated with chronic alcoholism (El-Amin et al., 2018).

Another factor that has an impact on Appalachian youth is the chronic poverty in the region (Byun et al., 2012; Evans et al., 2016; Hoffman et al., 2017; Smokowski et al., 2013). It has been observed that growing up in this type of systemic poverty can produce cumulative negative outcomes and limited opportunities that carry forward from childhood and into

adulthood (Bright, 2018). These long-term outcomes can include poor diets, reduced health, unemployment, and low socioeconomic status (Seals & Harmon, 1995). Some adult caregivers have been found to adopt unhealthy lifestyles as coping mechanisms, struggling to support their own children and even exposing them to toxic stress (Shonkoff & Gardner, 2011).

Appalachian youth growing up in a cycle of chronic poverty are likely to face interpersonal victimization, financial strain, and adverse life events (Banyard et al., 2017; Hardaway et al., 2012; Smokowski et al., 2013). These risk factors have shown to play a significant role in shaping the lives of children (Mizra & Arif, 2018; Yavuz & Kutlu, 2016).

**The Academic Challenges of Rural Appalachia**

One area of difficulty for Appalachian youth comes in the educational realm. Appalachian youth frequently find themselves facing repeated academic struggles that reduce their self-efficacy and desire to pursue academic advancement (Ali & Saunders, 2009). Those students who do successfully finish high school tend to have reduced post-secondary aspirations in comparison to their peers in other regions (Irvin et al., 2012). There are numerous factors that contribute to this prevalence of academic struggles, some of which are a result of deficiencies within the school system itself. In terms of the school system, students in Appalachia encounter both high levels of staff turnover and positions staffed by underqualified teachers (Irvin et al., 2012; Semke & Sheridan, 2011). Additionally, rural Appalachian school systems have struggled to engage parents and families in the educational process (Semke & Sheridan, 2011). These types of connections have shown to significantly impact student achievement (Semke & Sheridan, 2011).

In addition to challenges within the school system are challenges within the home and community. Due to the extremely rural nature of some Appalachian communities, many students

start and end their days by enduring extremely long bus rides to and from school (Seals & Harmon, 1995). While they are at home, many students face the reality that their parents are not equipped to support them in their educational journey (Ali & Saunders, 2006; Irvin et al., 2012). Many Appalachian parents have a low level of academic development themselves and are unable to participate in educational processes and programs with their children (Ali & Saunders, 2006; Irvin et al., 2012; Semke & Sheridan, 2011).

In part, because of their own low levels of academic development, many parents of children in rural areas have reduced educational expectations compared to other communities (Byun et al., 2012). One prominent example of this comes in the form of a lack of familiarity with the college exploration process (Ali & Saunders, 2006; Irvin et al., 2012).

Not a single state in the Appalachian region ranks among the top 20 for the percentage of residents with a high school diploma, while 10 of them rank among the bottom 20 states for this same category (United States Census Bureau, 2010). Only Pennsylvania, Ohio, and Maryland rank in the top half (United States Census Bureau, 2010), with the caveat that the majority of Maryland and Ohio are not even located within the Appalachian region. Out of 16 states in which less than 25% of the population holds a bachelor's degree, six of these states are part of Appalachia (United States Census Bureau, 2010). West Virginia has the lowest percentage of college graduates in the United States (17.5%), while Mississippi has the second lowest percentage (19.5%), and Kentucky has the fourth lowest percentage (20.5%; United States Census Bureau, 2010).

These low levels of educational attainment reflect that it is not always a realistic option for Appalachian youth to seek academic support outside their home, as Appalachian communities suffer from a lack of available academic role models (Ali & Saunders, 2009). Many

individuals from Appalachia who succeed academically end up leaving the area (Ali & Saunders, 2009), taking with them any educational experiences that may have been useful to others. From a cumulative standpoint, these educational barriers negatively impact academic achievement and overall developmental outcomes (Hoffman et al., 2017).

**The Social Challenges of Rural Appalachia**

Many social and community pressures add to the academic challenges faced by Appalachian youth. From a cultural standpoint, Appalachian youth may face pressures to remain close to home and take care of family instead of pursuing personal goals and ambitions (Irvin et al., 2012). This conflict between personal aspirations and family obligations is more often present in rural youth than their nonrural peers (Byun et al., 2012).

This is compounded by social pressures to maintain relationships and friendships with individuals within the local context (Irvin et al., 2012). In some instances, these social pressures and peer influences can have extremely detrimental impacts. Whenever rural youth find themselves involved in negative peer relationships, they are more likely to both turn to the use of illegal substances and disengage from positive influences in favor of an antisocial or delinquent peer group (Evans et al., 2016).

**Adverse Childhood Events (ACEs)**

One of the most significant life challenges facing Appalachian youth is the increased likelihood that they will be exposed to adverse events (Banyard et al., 2017; Hardaway et al., 2012; Smokowski et al., 2013). These experiences, referred to as adverse childhood events (ACEs), are extreme childhood difficulties (Banyard et al., 2017). These difficulties take the form of exposure to one or more instances of sexual abuse, physical abuse, emotional abuse, or neglect (Norman et al., 2012).

It has been established that exposure to ACEs can bring a wide range of negative outcomes (Banyard et al., 2017). As an individual is exposed to ACEs, there is a permanent change to brain structure and functioning (Shonkoff & Gardner, 2011). Due to the permanent nature of this rewiring, ACEs tend to have a negative impact that lasts throughout the lifespan. This lifelong influence is noted by Felitti et al. (1998) to be both strong and cumulative.

For those exposed to one or more ACEs, they will likely have increased morbidity and mortality later in life (Felitti et al., 1998; Shonkoff & Gardner, 2011). Among other outcomes, individuals who have experienced ACEs may find themselves with increased fear and anxiety, altered mood functioning, and impaired judgment of whether something is safe (Shonkoff & Gardner, 2011).

Adverse childhood events during childhood have been linked to a wide range of adulthood problems, such as smoking, severe obesity, eating disorders, high-risk sexual behavior, lack of physical activity, depression, use of illicit drugs, and suicide attempts (Felitti et al., 1998; Norman et al., 2012; Shonkoff & Gardner, 2011; Southwick et al., 2014). Adults struggling to come to terms with adverse experiences from their childhood are likely to struggle to maintain supportive social networks and find themselves living in a cycle of persistent poverty, homelessness, crime, and incarceration (Shonkoff & Gardner, 2011).

Particularly troubling about the lifelong implications of ACEs is the way in which they extend out to future generations. As adults struggle to cope with the realities of their past, they tend to adopt unhealthy lifestyles, find themselves unable to maintain employment or a stable living situation, and have difficulties supporting their own children (Shonkoff & Gardner, 2011). As a result of these struggles, the next generation becomes exposed to the same ACEs and toxic stresses as their parents before them (Shonkoff & Gardner, 2011). This cycle entraps families to

such a degree that exposure to ACEs frequently occurs at the hands of a parent or guardian (Norman et al., 2012).

As will be discussed in the ensuing sections on ACEs and their negative association with both hope and educational development, there is significant literature that supports these negative outcomes. Despite these associations, there is also a significant base that indicates some children will not only survive exposure to ACEs but thrive (Cassidy, 2016; Southwick et al., 2014; Werner, 1989)

### *ACEs and Educational Development*

As can be imagined, this cycle of adversity tends to have a large influence on the educational development of children caught in its grasp. One landmark study found that 66% of children who score four or higher on the ACE scale developed serious learning or behavioral problems prior to the age of 10 (Werner, 1989).

The permanent changes to brain structure play a large part in this, as it impairs memory and has been shown to inhibit educational attainment and lifetime economic productivity (Shonkoff & Gardner, 2011). Instead of academic success, individuals find themselves with delinquency records, increased teen pregnancy rates, and an array of mental health problems (Werner, 1989).

### *Hopelessness and the Cycle of Adversity*

Perhaps most devastating to the development of a child is the tendency of ACEs to reduce hope (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). Reduced hope can lead to setbacks at the psychological, cognitive, behavioral, and physiological levels (Baxter et al., 2017; Grund & Brock, 2019; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). These setbacks can include

increased self-doubt, bouts of depression, and interpersonal struggles (Munoz, Pearson et al., 2018; Rasmussen et al., 2018; Snyder, 2002; Snyder et al., 2003).

## Resilience

Given the tremendous strain and stress created by exposure to ACEs, it is not at all surprising that so many individuals would find themselves with such a multitude of problems. However, what is surprising is the reality that children can overcome ACEs not just to survive but also thrive. This fact is captured in the work of Werner (1989), which observed that "even in the most discordant and impoverished homes, and beset by physical handicaps, some children appear to develop stable and healthy personalities, and display a remarkable degree of resilience in the face of life's adversities" (p. 72).

This notion of resilience connects to various coping strategies (Southwick et al., 2014). Part of being resilient is that individuals learn, grow, and adapt to an environment (Southwick et al., 2014). Resilient individuals can intentionally bounce back and move forward to successfully adapt to disturbances that threaten their well-being (Cassidy, 2016; Southwick et al., 2014). As they develop a pattern of adapting to adversity, they can successfully overcome challenging circumstances (Cassidy, 2016; Southwick et al., 2014).

This elasticity and ability to overcome significant challenges have resulted in resilience being widely seen as a positive asset (Cassidy, 2016). Resilient individuals are much more likely to revert to normal more quickly after a setback or adverse experience and tend to have increased health and overall well-being (Cassidy, 2016).

## Resilience and Academic Development

One type of resilience is referred to as academic resilience, or the ability to overcome adversity that might threaten educational development (Cassidy, 2016). The presence of

academic resilience allows an individual to succeed academically when others around them will fall short (Cassidy, 2016; Werner, 1989). These students tend to achieve academic success even though they have faced one or more risk factors in their life (Yavuz & Kutlu, 2016).

There are many factors that support the development of academic resilience, with cognitive flexibility serving as a significant contributor to academic resilience (Yavuz & Kutlu, 2016). There are steps that can be taken to increase cognitive flexibility, and in turn, academic resilience. One such step involves creating problem situations that ask students to navigate different approaches and solutions to the problems (Yavuz & Kutlu, 2016). Teachers can further support the development of academically resilient students by providing mechanisms and activities that protect students and allow for academic resilience to develop (Mirza & Alif, 2018).

**Social Support That Mitigates Adversity**

It is these protective factors and perceptions of social support that lead to academically resilient individuals (Mizra & Alif, 2018; Yavuz & Kutlu, 2016). In order for an individual from an adverse background to have a chance of developing resilience, there is a need for the presence of these protective or supportive factors that can mitigate the adversity that has been experienced (Werner, 1989). These supportive factors can form a chain of protection that forms over time help a vulnerable child escape from adversity by establishing resilience (Werner, 1989). The presence of these supportive factors increases the chances of a child from an adverse background thriving and becoming a healthy adult (Shonkoff & Gardner, 2011). The greater amount of support that is in place, the better chance an individual will experience brain development and strong physical and mental health (Shonkoff & Gardner, 2011). The need for numerous supportive and protective factors becomes more evident as the level of adversity increases, with individuals facing the greatest adversity needing the greatest support (Werner, 1989).

In many instances, ACEs and other barriers are directly connected to the presence of, or lack of, social support. Social support has been defined as being loved and cared for by others (Kim et al., 2008). Being socially supported involves participating in a framework of communication and mutual responsibility (Kim et al., 2008). Social support has shown to have the potential to mediate the impact of adversities (Hambrick et al., 2018; Kim et al., 2008; Melkman, 2017; Munoz et al., 2019; Powell & Davis, 2019). The presence of social support in the home, school, or community protects children from negative outcomes related to ACEs (Powell & Davis, 2019). Specifically, social support has shown to be an influential factor in the presence of hope (Sahranc et al., 2017). At the individual level, traits such as self-efficacy, self-regulation, prosocial behaviors, coping, and personality traits have all shown to help develop resilience in the face of adversity (Powell & Davis, 2019). Within the family, stable caregivers and an overall supportive family unit can protect those who have experienced adversity (Hambrick et al., 2018; Powell & Davis, 2019). Community-level support includes positive peer associations, role models from outside the home, and other social relationships that help mitigate adverse experiences, along with prevention and intervention services (Powell & Davis, 2019). Because of the importance of social support at each of these levels, it is crucial that all elements effecting well-being are addressed (Powell & Davis, 2019). Multiple social support functions, including emotional, practical, and information and guidance, each play a part in impacting the correlation between childhood adversity and well-being later in life (Melkman, 2017).

Even the mere perception that social support is available for a student who does not even utilize them can result in a stronger sense of control, independence, and self-efficacy (Melkman, 2017). Existing research has reinforced the importance of perceived support as a predictor of psychological well-being during adverse life events (Wethington & Kessler, 1986). Perceived

support has a significant relationship with several indicators, including academic competence (Demaray & Malecki, 2002). Individuals with higher levels of perceived social support have better outcomes on these indicators than those with lower levels of perceived social support (Demaray & Malecki, 2002). Perceived support is further significant in that those who perceive the presence of support are likely to decide to seek out that support (Jayaratne et al., 1988). Additionally, those who perceive a lack of available support may experience problems, such as depression (Jayaratne et al., 1988). For these reasons, it has been argued that the perception of available support is even more important than actual support received (Wethington & Kessler, 1986).

Unfortunately, this potential is double-edged, as children from adverse backgrounds are more likely to have reduced social support (Melkman, 2017). Further compounding this is the perception that many children from adverse backgrounds do not have social support available to them or that the support networks available to them will not meet their needs (Melkman, 2017). This real or perceived lack of support ultimately serves as one more link in the high-risk chain (Hambrick et al., 2018; Melkman, 2017). The isolation and lack of resources in high-poverty rural communities (Powell & Davis, 2019) make the impact of real and perceived social support particularly relevant to the Appalachian population.

One powerful supportive factor involves the formation of a lasting positive relationship with a trusted adult (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018; Werner, 1989). The presence of this type of nurturing relationship, and the positive example it provides, can help high-risk youth find meaning and help them believe they have control over their life (Werner, 1989).

In some cases, this strong and lasting relationship comes in the form of a strong emotional connection to and affection for family (Werner, 1989). Whenever an individual perceives that they have a high level of support from their parent or familial caretaker, they are in turn going to feel supported and be more likely to display resilience (Ali & Saunders, 2006; Arincorayan et al., 2017).

While this strong family connection is ideal, all is not lost if an individual finds that they are without it, as the relationship does not have to be with a parent (Arincorayan et al., 2017). Nonfamilial social support can support resilience (Banyard et al., 2017). A relationship with a coach, religious leader, teacher, or other therapeutic support can also increase resilience (Arincorayan et al., 2017). Further boosting support networks can be factors such as strong counseling support and a strong connection between the home and school (Semke & Sheridan, 2011).

Additionally, it should be noted that aspects of individual personality have been established as a support for overcoming adversity and developing resilience (Werner, 1989). Some of these individual traits include practicing forgiveness, practicing meaning making, and developing emotional regulation (Banyard et al., 2017).

**Hope: The Critical Supportive Strength**

One critical supportive strength that connects to both resiliency and well-being is hope (Grund & Brock, 2019; Hellman, Munoz, et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Qunton et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). Hope has shown to serve as a significant psychological strength that promotes resilience and psychological well-being (Munoz, Pearson et al., 2018). Those with high levels of hope have healthier lifestyles, avoid life crises, and cope better with stressors (Snyder et al., 1991), and as a

result, experience improved physical well-being (Snyder, 2002). Hope serves as a leading gauge of life happiness and factors in relational success, academic success, and career success (Counts et al., 2017).

The presence of hope has repeatedly proven to be a critical supportive strength in establishing resilience (Grund & Brock, 2019; Hellman, Munoz et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Qunton et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). Hopeful individuals can maintain goal pursuits and overcome challenges at a greater level than those without hope (Snyder et al., 1991). As individuals encounter trauma, hope helps to mitigate the impact trauma has on the brain (Counts et al., 2017). For example, those with hope are less likely to suffer from PTSD or high levels of anxiety (Munoz, Pearson et al., 2018).

In terms of academic success specifically, hope contributes to academic achievements (Buckelew et al., 2008; Chang, 1998; Levi et al., 2014). While other factors such as self-efficacy and engagement have also been connected to academic achievement, hope has shown to consistently impact academic achievement beyond consideration for these other variables and beyond what would be expected based on educational history (Gallagher et al., 2017). In addition to current academic achievement, it has also been established that high levels of hope are positively associated with future academic performance (Day et al., 2010).

Hope can be broken into two distinct components: pathways (or outcomes and agency) or efficacy (Snyder et al., 1991). The agency component refers to a high level of determination to meet goals in the past, present, and future (Snyder et al., 1991). Those with high levels of agency hope embrace goals, are more certain about goal attainment and perform higher on goal-oriented

tasks (Snyder et al., 1991). They also pursue larger and more challenging goals than those without agency hope (Snyder et al., 1991).

In tandem with agency hope, pathways hope is the generation of successful plans to meet a goal (Snyder et al., 1991). Those with high levels of pathways hope have an ability to find alternative paths forward when facing barriers or impediments (Snyder, 2002). The development of alternative paths frequently involves calling upon friends and family for support during stressful situations (Snyder, 2002). This reliance upon a network of friends and family connects back to hope's role as a critical supportive strength and the important place supportive relationships occupy in the development of resilience.

For an individual to develop hope, and in turn, establish resilience, there needs to be the presence of both the pathways and agency components (Snyder et al., 1991). The most influential variable in hope has previously been found to be social support (Sahranc et al., 2017), with research showing that supportive factors can help high-risk individuals find meaning, cope with stress, and develop a sense of control (Demaray & Malecki, 2002; Shonkoff & Gardner, 2011; Werner, 1989). This reinforces the importance of lasting and positive relationships that can be drawn upon in order to establish alternative paths forward.

**Chapter Summary**

The interactions among childhood adversities, social support, hope, and resilience are complex and important. Children who experience a significant number of adversities tend to have lower hope, which is likely to manifest in the form of stress-induced disorders such as post-traumatic stress disorder and heightened anxiety (Munoz, Pearson et al., 2018). The overwhelming force of traumatic experiences can shatter an individual's ability to see a path forward, consuming the traumatized individual (Snyder, 2002). The same circumstances that

could be mitigated by high levels of hope, such as parental divorce or the death of a parent, are associated with low levels of hope (Snyder, 2002). Hope is lost over time because of these hope-reducing experiences and victimizations, culminating in a potential lifelong struggle with healthy relationships (Snyder, 2002).

However, hope is learned (Snyder, 2002). Not all children who experience adversity succumb to their circumstances (Arincorayan et al., 2017). With enough nurturing, emotional support, and social support, youth from adverse backgrounds have displayed remarkable resilience (Werner, 1989). This resilience allows an individual to achieve positive outcomes in the face of threats and adversities (Arincorayan et al., 2017). As Werner (1989) observed, with the help of these supportive elements, "resilient children acquired a faith that their lives had meaning and that they had control over their fate" (p. 74). This perception of faith and control is synonymous to the self-perceptions of hopeful individuals, who tend to feel they have high levels of social support (Snyder, 2002). These levels of hope will result in improved life outcomes, including in the realm of academic development and performance (Cassidy, 2016; Snyder, 2002).

# Chapter 3: Research Method

This quantitative study examined the relationship among hope, resiliency, social support, and adversity in the lives of emerging Appalachian adults. In order to effectively assess these relationships, I utilized a nonexperimental cross-sectional design that was exploratory in nature. The study was conducted using quantitative measures. This chapter provides an overview of the research approach, including the quantitative instruments used for data collection, the sample population and selection, sample size, and the type of data analysis that were used as part of the research process. The research process was focused around four primary research questions.

## Research Questions

**Q1.** What is the relationship between adversities as measured by the Adverse Childhood Experiences (ACE) scale and hope as measured by the Dispositional Hope Scale?

**Q2.** What is the relationship between hope as measured by the Dispositional Hope Scale and academic resilience as measured by the Academic Resilience Scale (ARS-30)?

**Q3.** How does adversity as measured by the Adverse Childhood Experiences (ACE) scale and hope as measured by the Dispositional Hope Scale predict academic resilience as measured by the Academic Resilience Scale (ARS-30)?

**Q4.** How does perceived social support as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) and the Multifactoral Assessment of Perceived Social Support (MAPSS) short form interact with hope to predict academic resilience among emerging adults in Appalachia?

## Hypotheses

**H1.** Among emerging Appalachian adults, there will be a negative correlation between exposure to adverse childhood events and levels of hope.

**H2.** Among emerging Appalachian adults, there will be a positive correlation between perceived social support and hope.

**H3.** Among emerging Appalachian adults, there will be a positive correlation between hope and academic resilience.

**H4.** Among emerging Appalachian adults, hope will play a moderating role in the relationship between adverse childhood experiences and academic resilience.

**H5.** Among emerging Appalachian adults, perceived social support will play a moderating role in the relationship between adverse childhood experiences and hope.

## Research Design and Methodology

In establishing the most appropriate type of research to employ, it is important to look at the question being investigated (Rutberg & Bouikidis, 2018). This type of approach is defined by several characteristics, including the emphasis on research questions that focus on real-life contextual understandings, multilevel perspectives, and cultural influences (Klassen et al., 2012). This type of research is not simply the collection of quantitative information, it also involves using this data to help answer the research questions (Klassen et al., 2012).

A quantitative approach was selected based upon the research questions. The quantitative instruments were utilized to establish the amount of adversity respondents have been exposed to, the degree of perceived social support, and the presence of hope and academic resilience. The respondents completed these quantitative components during a single session. While the data was collected during a single administration involving the same set of respondents, the data was analyzed separately and then brought together, making the study convergent in nature (Klassen et al., 2012; McCrudden & McTigue, 2019).

### *Quantitative Methods*

In a quantitative research design, the researcher takes a highly controlled approach and makes use of precise measurement tools (Rutberg & Bouikidis, 2018; Stahl et al., 2019). Quantitative measures can address a lack of research on a topic or attempt to tackle unanswered research questions about human conditions and actions (Rutberg & Bouikidis, 2018; Stahl et al., 2019). Quantitative research aims to be both objective and scientific (Stahl et al., 2019). Quantitative research can be experimental, quasiexperimental, or nonexperimental (Rutberg & Bouikidis, 2018). Timeline and research objectives are additional important considerations of quantitative research (Johnson, 2001). A quantitative study might have descriptive, predictive, or exploratory aims, and it can occur via a cross-sectional, longitudinal, or retrospective timeline (Johnson, 2001).

Examining these relationships of hope, resiliency, social support, and adversity was done using a nonexperimental cross-sectional research approach and was exploratory in nature. The use of a nonexperimental approach is appropriate whenever a study focuses on observing a phenomena and identifying relationships without manipulating the variables (Johnson, 2001; Rutberg & Bouikidis, 2018). The cross-sectional timeframe is appropriate for the study because the data was collected from research participants during a relatively brief time period (Johnson, 2001), with all participants completing the survey instrument in either March or April of 2020.

One reason a variable may not be able to be manipulated may be a scenario in which the manifestation of the variable has already taken place (Johnson, 2001). Nonexperimental research has great relevance to researchers in the field of education due to the prevalence of important variables that cannot be manipulated (Johnson, 2001). This study met both criteria. It evaluated many variables (i.e., number of adverse childhood experiences, degree of perceived social

support, presence of hope, level of academic resilience) that had already manifested when the study was conducted, and it involved variables that cannot be manipulated.

Another component of quantitative research involves the use of standardized methods of data collection (Rutberg & Bouikidis, 2018). At the beginning of their participation in the research, each respondent provided basic demographic information such as gender, age, and whether they identified with the Appalachian region and Appalachian Coalfields. The demographic items were structured to maintain the anonymity of individual respondents.

### *Instruments*

This study included several different quantitative measurement tools, including the Adverse Childhood Experience Questionnaire (ACE-Q; Felitti et al., 1998), the adult trait hope scale (AHS; Snyder et al., 1991), the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), the Academic Resilience Scale (ARS-30; Cassidy, 2016), and the Multifactoral Assessment of Perceived Social Support short form (MAPSS-SF; Fredericksen et al., 2019). These scales either do not have active copyrights associated with them or were used based upon the fair use exemption to copyrighted materials. Additionally, the original scale developers are noted in each instance that one of the scales appears in this research. The selection and rationale for each of these scales is discussed in the ensuing sections.

**ACE Scale.** One such quantitative instrument is the ACE Questionnaire (ACE-Q; Felitti et al., 1998). Felitti et al. (1998) created the ACE instrument by using prior constructs such as the Conflicts Tactics Scale, the Wyatt, the National Health Interview, and the National Institute of Mental Health (Felitti et al., 1998). The ACE-Q was created for the purpose of measuring the level of childhood exposure to emotional abuse, physical abuse, sexual abuse, and childhood dysfunction and the relationship of these childhood experiences to behavioral and health

problems in adulthood (Felitti et al., 1998). Prior to Felitti et al. (1998) conducting the ACE study, these relationships had not been previously discussed.

The ACE-Q groups instances of childhood abuse exposure into categories of psychological abuse, physical abuse, and sexual abuse (Felitti et al., 1998). Meanwhile, the presence of household dysfunction falls under the groupings of parental separation, exposure to substance abuse, mistreatment of mother or stepmother, mental illness, or criminal behavior in the household (Felitti et al., 1998). Exposure to an abuse or dysfunction category is established by an affirmative answer to at least one question related to a category (Felitti et al., 1998). The instrument consists of 16 items, with four items regarding violent treatment of mother or stepmother; four items regarding sexual abuse; two items pertaining to each of the following: psychological abuse, physical abuse, exposure to substance abuse, and exposure to mental illness; and one item pertaining to criminal behavior in the household (Felitti et al., 1998). An affirmative response to any one of the items qualifies as exposure to that ACE category (Felitti et al., 1998). While there are 16 different items included, the actual ACE output spans from 0 to 10 and is considered ratio data (Felitti et al., 1998). When administering the ACE-Q, it is necessary that respondents complete all the items. Respondents that do not complete the entire inventory are excluded from the data analysis (Felitti et al., 1998). The specific questions included in the ACE-Q can be found in Appendix C.

The use of the ACE-Q has been able to establish a relationship between the number of childhood exposures and the prevalence of multiple health risk factors later in life (Felitti et al., 1998). Logistical regression models conducted by Felitti et al. (1998) as part of the initial ACE study reinforced the health impacts of exposure to ACEs, showing a strong relationship between childhood ACEs and leading causes of death among adults. Additionally, it was established that

those exposed to one ACE category are highly likely to have been exposed to at least one other ACE (Felitti et al., 1998). The greater the number of ACEs, the more likely an individual has been shown to be at risk for alcoholism, drug use, depression, and other high-risk behaviors (Felitti et al., 1998).

In the two decades since the initial ACE study, numerous studies have reinforced the connection of ACEs to a multitude of serious health problems in adulthood (Zarse et al., 2019). These problems include mental health disorders, substance use disorders, and general medical conditions (Zarse et al., 2019). The strength of this relationship between ACEs and negative health outcomes in adulthood will provide a strong baseline for establishing the level of risk research participants may be facing for negative outcomes in adulthood.

It is important to note that the ACE inventory has been modified and adapted several times (Finkelhor et al., 2012; Warne et al., 2017). This study utilized the initial ACE inventory developed by Felitti et al. (1998) and is not directly comparable to the results from other versions of the ACE scale.

**Adult Hope Trait Scale.** This study utilized the adult trait hope scale (Snyder et al., 1991). This construction, which was developed by Snyder et al. (1991), is based upon an initial survey consisting of 45 items that was ultimately reduced to 12 items. Eight of the 12 items are hope related, with four items related to agency thinking about goals and four items related to pathways thinking about multiple means for overcoming goal related obstacles (Snyder et al., 1991). The remaining four items on the scale consist of filler material (Snyder et al., 1991). For each of the eight hope-related items, the output is ordinal data spanning a scale range from 1 to 4 (Snyder et al., 1991). Responses to each of these items are added in order to determine hope scores for pathways hope, agency hope, and total hope (Snyder et al., 1991). Given the scale

ranges, the output will produce an agency hope range of 4 to 16, a pathway hope range of 4 to 16, and a total hope range of 8 to 32 (Snyder et al., 1991). These summed hope scores are interval in nature. See Appendix D for the full list of items included in the scale.

It should be noted that in addition to the original version of the hope scale used in this study, a second version of the scale utilizes the same questions but is scored on an eight-point scale (Lopez et al., 2000). This version changes the scoring so that pathway and agency hope range from 4 to 32 and total hope ranges from 8 to 64 (Lopez et al., 2000). While this study utilized the original four-point scale, both versions of the scale are appropriate for use (Lopez et al., 2000).

Upon its initial development, the dispositional hope scale was viewed to have multiple different contributions (Snyder et al., 1991). Participant responses to the dispositional hope scale have shown to be predictive of both goal setting and academic achievement (Snyder et al., 1991). The scale has further proven useful in understanding how people relate to their life goals (Snyder et al., 1991). Because of these contributions, the use of this scale has the potential to aide in answering many important questions (Snyder et al., 1991).

Snyder et al. (1991) showed that high scores on the hope scale predicted goal setting and academic achievement beyond previous achievement levels. They also determined that those with high levels of agency and pathway hope as measured by the hope scale were likely to maintain these characteristics through adverse circumstances (Snyder et al., 1991). As a result, higher hope individuals are more likely to have a healthy lifestyle, avoid life crises, and cope more effectively with stressors than those with lower hope (Snyder et al., 1991). In follow-up studies built upon the initial hope scale (Snyder et al., 1991), high levels of hope have repeatedly and consistently related to positive outcomes in both well-being and academic performance

(Snyder, 2002). This connection to persevering through adverse circumstances makes the hope scale of interest in this study.

**Academic Resilience Scale (ARS-30).** The third quantitative scale that was utilized in the study was the Academic Resilience Scale (ARS-30) developed by Cassidy (2016). This scale was developed to establish academic resilience to measure students' specific responses to academic challenges and adversities (Cassidy, 2016). It is set apart from other resilience-related scales because of its explicit focus on academic resilience (Cassidy, 2016).

The academic resilience scale consists of 30 items that measure student responses to hypothetical academic adversity (Cassidy, 2016). The items were chosen to reflect the conceptual domains of self-efficacy and self-regulation in conjunction with other components often connected to resilience (Cassidy, 2016). The ARS-30 contains three subscales, with 14 items that measure perseverance, seven items that measure negative affect and emotional response, and nine items that measure reflective and adaptive help seeking. Each item on the scale allows for respondents to answer in either an adaptive or nonadaptive fashion (Cassidy, 2016). This construct allows for academic resilience to be measured based on specific occurrences of academic adversity (Cassidy, 2016). The full construct of the ARS-30 (Cassidy, 2016) can be found in Appendix E.

From a design standpoint, the academic resilience scale has shown to be a valid and reliable measure for academic resilience and self-efficacy (Cassidy, 2016). The ARS-30 has shown to have a significant effect size (Cassidy, 2016). The scale items were developed using best practices for questionnaire design (Cassidy, 2016). Each response item is based upon a five-point Likert scale response based upon the hypothetical academic adversity (Cassidy, 2016). The data output for each individual item is ordinal in nature, while the summed scores for total

academic resilience and each of the academic resilience subscales are interval in nature. The possible ARS-30 score range is 30 to 150, based upon responses to each of the items, with a range of 14 to 70 for the perseverance subscale, 7 to 35 for the negative affect and emotional response subscale, and 9 to 45 for the reflective and adaptive help seeking subscale (Cassidy, 2016). Positive and negative response items are reversed so that higher academic resilience scale scores would reflect greater degrees of resilience (Cassidy, 2016).

Of interest to the current study is that the ARS-30 was designed specifically for application in schools and among university students (Cassidy, 2016). Additionally, while there are several scales designed to measure resilience, there is a limited body of work related specifically to academic resilience (Cassidy, 2016). This lack of existing focus on the academic construct served as the catalyst for the development of the ARS-30 scale (Cassidy, 2016). This target demographic and emphasis on the academic realm matches the target population of this study.

**Multidimensional Scale of Perceived Social Support (MSPSS).** The fourth quantitative scale used in the study was the Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988). This scale was designed to produce a quantitative measure of subjective social supports (Zimet et al., 1988). The MSPSS was developed to be a brief inventory that can be easily administered (Zimet et al., 1988).

The complete MSPSS inventory consists of 12 items (Zimet et al., 1988). These items are broken into three different groupings of four items each (Zimet et al., 1988). Each of the groupings represents a different element of perceived social support, with one grouping representing family support, a second grouping representing support from friends, and the third grouping representing support from a significant other (Zimet et al., 1988). All 12 of the items

utilize a seven-point rating scale, with response options ranging from *very strongly disagree* to *very strongly agree* (Zimet et al., 1988). The data output for each individual item is ordinal in nature, while the output for each subscale and the overall MSPSS is interval in nature, with score ranges of 4 to 28 for each of the categories of family support, friend support, and support from a significant other (Zimet et al., 1988). When the items from each category are totaled, the overall score range for total level of perceived social support spans from 12 to 84 (Zimet et al., 1988).

There are several rationales for the selection of the MSPSS for research purposes. It was designed to be a scale that is self-explanatory, easy to use, and quick to administer (Zimet et al., 1988). One of the considerations taken when the MSPSS was first developed was its concise nature that allowed it to be effectively administered alongside multiple other inventories during a limited window of time (Zimet et al., 1988).

The MSPSS has additionally shown to have strong reliability, both in terms of internal reliability and test-retest reliability (Zimet et al., 1988). It also has a high level of factorial validity, along with a sufficient level of construct validity (Zimet et al., 1988). These validity and reliability characteristics, along with the ability for MSPSS to be quickly administered as part of a study that incorporates multiple instruments, made the MSPSS a valuable scale for inclusion in this study.

**Multifactoral Assessment of Perceived Social Support Short Form (MAPSS-SF).** The fifth quantitative instrument used in the study was the Multifactoral Assessment of Perceived Social Support short form (MAPSS-SF; Fredericksen et al., 2019). The Multifactoral Assessment of Perceived Social Support (MAPSS) was initially developed as a measure of social support to be administered to clinical patients living with HIV (Fredericksen et al., 2019). The

initial inventory was developed using a literature review based upon the key terms of social support, emotional support, and social isolation (Fredericksen et al., 2019).

The initial efforts to develop the MAPSS produced a pool of 72 possible items (Fredericksen et al., 2019). However, this initial pool was narrowed down further, first to 14 response items, and ultimately to nine (Fredericksen et al., 2019). This reduction was done in order to have an instrument that was feasible to administer in a busy clinical setting (Fredericksen et al., 2019). In addition to the standard nine-item MAPSS, a short form, the MAPSS-SF, was developed that totals three response items only (Fredericksen et al., 2019). This short form is the version used in this study (see Appendix F). The data output for each item on the MAPSS-SF is nominal in nature, with respondents choosing between the binary responses of *not enough* and *enough* or *more than enough* (Fredericksen et al., 2019). Thus, participant responses for the overall scale could produce a ratio data output between 0 and 3 based upon their responses to each item (Fredericksen et al., 2019). Upon its development, the MAPSS was tested for validity utilizing a sample of 708 participants (Fredericksen et al., 2019). The results of this testing showed a high degree of external validity (Fredericksen et al., 2019).

While the MAPSS was initially developed for use with patients living with HIV who are receiving treatment in a clinical setting (Fredericksen et al., 2019), there are several factors that lend to its use in measuring perceived social support among other populations. For one, the MAPSS was developed utilizing an extensive review of medical literature from 1965 to 2015 (Fredericksen et al., 2019). Additionally, the development of the instrument reflects a geographically and demographically diverse group of research participants (Fredericksen et al., 2019). Another purpose of incorporating MAPSS is that it supplemented the use of the MPSS to improve upon the research.

**Population and Setting**

Participant selection is crucial to the success of a research study, as the participants need to have had exposure to or experience with the content that is being investigated (Rutberg & Bouikidis, 2018). In order to ensure valid and effective participant selection, participants were intentionally selected for the research study. Because the study was focused on individuals within the Appalachian region, the research participants were selected to represent this population appropriately.

This region stretches 205,000 square miles and includes 420 different counties in parts of 12 different states and all of West Virginia (Appalachian Regional Commission, 2019). More than 25 million people reside within the boundaries of Appalachia (Appalachian Regional Commission, 2019). Within the Appalachian region, the population is further broken down into five subregions, including the northern, north central, central, south central, and southern Appalachian subregions (Appalachian Regional Commission, 2019).

In consideration of the cultural differences between these subregions, a demographic item was included to identify those residing the northern, north central, and central subregions in counties that make up what is collectively referred to as the Appalachian Coalfields (Appalachian Magazine, 2017). These Appalachian Coalfields include the Southwestern corner of Pennsylvania, the Central and Western portion of West Virginia, and the Eastern portion of Kentucky, as well as a small number of counties in Southeastern Ohio and North Central Tennessee (Appalachian Magazine, 2017). A map outlining the Appalachian regions and which counties are considered the Appalachian Coalfields can be found in Appendix G. For this study, 77.5% of respondents ($n$ = 155) identified specifically to the Coalfield counties. Individuals from

these Coalfield communities have distinct similarities to each other and significant differences from those hailing from other Appalachian subregions (Appalachian Magazine, 2017).

Within Appalachia, participants were further selected based upon their status as emerging adults. Emerging adults have been classified as individuals between the ages of 18 and 29 who have concluded adolescence but not yet taken on the full responsibilities of adulthood (Arnett, 2000; Brown et al., 2009). A demographic question for age was included in the survey instrument. Those not between the ages of 18–29 were excluded from participation.

Additionally, only participants that completed all five survey instruments in their entirety were included in the final sample. Any potential participants who failed to complete all items were not included in the data analysis.

After each of these criteria were applied, the final group of participants that were included in the study consisted of 200 individuals between the ages of 18 and 29 who spent most of their life and educational experience within the Appalachian region. Most respondents identified specifically with the Coalfield region. This exceeded the minimum number of respondents ($n = 67$) that had been determined using a G*Power analysis that utilized a bivariate normal model of correlation as the anticipated statistical test, and assumed a medium effect size of .3 and an $\alpha$ of .05, with a power rating of .80 (Faul et al., 2007, 2009).

Each of these selected research participants completed the quantitative instruments to determine the number of ACEs present in their life, their level of hope, their degree of perceived social support, and their level of academic resilience. These quantitative survey instruments were all administered remotely via the use of online survey instruments. While paper copies of the instruments were made available for participants who could not access the web-based platform, no participants submitted these paper-based surveys.

**Sample**

In order to reach and recruit a diverse group of candidates from the desired pools, recruitment materials were developed to promote research participation. These recruitment materials were distributed as flyers, emailed communications, and social media messages (see Appendix H). The other recruitment materials can be found in Appendix I.

Participants were recruited through several avenues. One avenue was through the distribution of the research instruments to selected high schools for completion by current seniors who had already turned 18. School personnel such as guidance counselors and administrators were contacted in order to use them as the recruitment and distribution channels for these current high school students. The contact with these high school personnel was made as a result of already established professional and personal contacts with educators throughout the Appalachian region. These relationships have been forged over the past 10 years of living and working in Appalachian Coalfield communities.

A second avenue included distribution to community colleges, colleges, and universities located within the Appalachian Coalfields for their students to participate. Research instruments were distributed to vocational and technical training centers located within the Appalachian Coalfields to include emerging adults who may have pursued postsecondary education at a location other than a college or university. School personnel such as professors, instructors, and administrators served as the recruitment and distribution channels for students at their respective institutions. These individuals were contacted via existing personal and professional relationships in these settings.

Two additional populations targeted included students who entered directly into the workforce upon high school graduation and those who did not complete high school

successfully. These two populations were more challenging to recruit and harder to reach and distribute the survey instruments due to their lack of affiliation with a postsecondary educational institution. Struggles to reach these populations may have been detrimental to the study in the form of a possible selection bias that would skew participation toward those who have already shown some level of academic resilience.

Steps were taken to try to ensure these populations were represented. The primary avenue through which they were recruited for participation was using proxy recruiters that were on the ground in Appalachian Coalfield communities. I have maintained connections to and relationships with several individuals within the Appalachian Coalfields who I contacted to ask for assistance with recruitment. I made initial outreach to these potential proxy recruiters through written requests for their assistance. The template for this communication can be found in Appendix J.

I then provided proxy recruiters who agreed to assist with the study with the link to the survey instrument for distribution to potential participants. I also asked them to publicize the research study in their local community by posting the recruitment materials from Appendix I in local community centers such as post offices, local workplaces and businesses, and other local community centers. Another resource that I made available to the proxy recruiters came in the form of paper copies of the survey instrument and self-addressed stamped envelopes to return to me. This provision was designed to enhance the ability to participate for those who did not have internet access to complete the online survey instrument. None of the proxy recruiters expressed a need for these paper copies. At least one proxy recruiter made their personal office available to participants who did not have access to technology to complete the online instrument.

These proxy recruiters included community members who have close contact to and relationships with the difficult to reach populations. Examples of these proxy recruiters included peers who have remained in the local community, employers, teachers, or counselors who have maintained contact with their past students, church leaders, civic leaders, and other community members as well as established contact with me.

It should be noted that this recruitment process took place during the early stages of the COVID-19 pandemic arrival in the Appalachian region. As a result, many schools, businesses, and community organizations closed during the administration window. This negatively impacted the in-person recruitment of participants, particularly for those who would have completed the survey at their school. For example, one proxy recruiter had expressed that they would be inviting their students to complete the survey instrument during class, but their school closed before this administration occurred. The presence of the COVID-19 pandemic also contributed to the lack of paper-based survey responses.

**Data Collection and Analysis**

Previous research on ACEs, hope, and resilience has supported the notion that social support increases hope (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018). However, this existing body of evidence has been limited to certain populations (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Hellman, Munoz et al., 2018; Munoz, Pearson et al., 2018; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018). In order to extend the existing body of evidence to the additional population of emerging Appalachian adults, this study collected data and analyzed it using several methods of statistical analysis.

Most of the data was collected utilizing the data collection instruments (ACE-Q, Dispositional Hope Scale, MSPSS, MAPSS, and ARS-30). Additionally, respondents completed some basic demographic information to determine their age, gender, and identification with the Appalachian region and Appalachian Coalfields. The full data collection instrument can be found in Appendix K.

Several measures of quantitative analysis were conducted as part of the study. Version 26 of the SPSS was used for all data analyses. Prior to running each analysis, the appropriate statistical assumptions were assessed. The analysis began with the generation of various descriptive statistics for the different response items. Next, variables were compared utilizing a Bivariate (Pearson) Correlation analysis. Additionally, linear regression analysis was conducted to evaluate the relationship among the different variables. An assessment of mediation and moderation was also conducted to evaluate the magnitude of the effect and the mechanisms that impact the effect (Judd et al., 2001). These assessments were completed using PROCESS macro version 3.5 (Hayes, 2018).

**Validity, Reliability, Trustworthiness, and Confirmability**

Several steps were taken to protect the trustworthiness and reliability of the data collected. These steps were evident in both the approach to participant selection and data collection.

Each of the quantitative instruments that were included in the study (ACE-Q, Dispositional Hope Scale, MSPSS, MAPSS-SF, and ARS-30) have been developed and validated in prior research studies (Cassidy, 2016; Felitti et al., 1998; Fredericksen et al., 2019; Snyder et al., 1991; Zimet et al., 1988). This helped ensure that responses collected via these instruments was trustworthy and reliable.

Each of the steps put in place regarding the selection of participants further protected the trustworthiness and reliability of the data collected. Participants included in the study wholly represented the intended target population. Thus, observations based upon their responses can more reliably be concluded to represent the greater population of Appalachian emerging adults who have been exposed to ACEs.

**Ethical Considerations**

Steps were taken to ensure appropriate ethical considerations were made. Informed consent was obtained from all research subjects prior to their participation in the study. The informed consent information can be found in Appendix L. Prior to the study being conducted, appropriate approval from the Abilene Christian University Institutional Review Board (IRB) was obtained. A letter of IRB approval can be found in Appendix M.

Additionally, to maintain transparency in participant recruitment, participants were provided with the study's description (see Appendix N). This allowed for participants to have a full and clear understanding of the study they were participating in prior to completing the informed consent information.

A third ethical consideration related to the comfort level of participants in responding to survey items that are potentially sensitive in nature. To avoid placing unnecessary stress on respondents, they were informed that survey item responses were marked as not required. While it was beneficial to the study to have the full instrument completed by as many respondents as possible, it was important that participants did not feel coerced into any responses. This meant that none of the items were marked as required for completion, with participants who did not complete all items excluded from the final analysis.

A fourth ethical consideration was that all identifying information for the individual participants was excluded from the study to protect the research participants' anonymity. Participants were assigned a randomly generated participant number. While some demographic information such as gender and age were collected and utilized as part of the research, personally identifiable information such as the names of the participants were not collected. To further protect the identities of the individuals, the identifying information of participating institutions was excluded from the study. In the research findings, participating institutions are described in nonidentifiable terms. Terms used connected them to the Appalachian region but not to any specific institution or location. Additionally, Internet Protocol (IP) addresses were not recorded for any participants completing the online survey instrument.

**Assumptions**

For this study's purpose, it was assumed that all participants were members of the targeted study population. This target population included emerging adults between the ages of 18–29 who have spent most of their life and educational experiences in the Appalachian region. In order to support the validity of this assumption, a question was posed as part of the survey instrument that asked the participant to indicate that they have spent most of their life and educational experience in the appropriate region (see Appendix K). Any participants that answered that they did not meet this assumption, or who failed to indicate a response, were not included in the study.

A second primary assumption of the study was that the participants answered all questions openly, honestly, and to the best of their ability. The anonymity of the data collection instruments should have supported the collection of honest responses. Participants who did not complete the full survey instrument were excluded from the final data analysis.

## Limitations

There are several limiting factors that need to be considered as part of the study. The first one is the number of resources available to complete the study. It was not feasible in terms of time or resources to conduct a widespread sample of the entire Appalachian region, and the study only focused on one subset of this population.

Additionally, as a cross-sectional study, there was not the luxury of seeing the data points develop over time. The study was limited to the level of hope and resilience that participants reported during a single snapshot. For this reason, the study was not able to evaluate whether the levels of hope, resilience, or perceived social support changed over an extended period.

A further limitation was the relatively small window of participants in terms of age range. By looking only at emerging adults, the participants were limited to those in an 11-year window only from age 18–29. The fact that this study was conducted in the middle of a school year further limited the eligible participants, as some high school seniors had not turned 18 at the time the research was conducted.

Additionally, given the fact that emerging adulthood is not a concrete age range but rather a phase of life (Arnett, 2000), it is difficult to know definitively whether participants are indeed emerging adults or whether they have transitioned into young adulthood. For this reason, it is possible that some participants were included who fit the age range of emerging adulthood but who have transitioned to the life stage of young adulthood.

## Delimitations

This study included a specific population of emerging Appalachian adults. By nature of it being singularly focused on Appalachia, the study did not include any participants from outside of Appalachia.

The study focused on individuals within this target population who were between the ages of 18–29 at the time of the research study. It did not include any children under the age of 18, and it did not include any adults who were age 30 or above. While the focus of the study was on emerging adults, it was not the purpose or intention of this study to identify exactly when individuals transition from emerging adulthood to young adulthood.

Some demographic information was collected for the study. This demographic data included age, gender, education level, and whether an individual is from the Appalachian region. No other demographic data such as ethnicity or education level was included.

The entirety of the survey instrument was designed to look at only four components. These components included participant exposure to ACEs, participant hope as measured by Snyder's (1991) hope scale, participant academic resilience as measured by Cassidy's (2016) AR-30 scale, and level of perceived social support as measured by the MSPSS (Zimet et al., 1988) and MAPSS-SF (Fredericksen et al., 2019). No other components were included in the study, and no other information was included beyond these focus areas.

**Chapter Summary**

The Appalachian region represents an area that has generally been pushed to the margins of scholarly research (Schafft, 2016), with an overall lack of research conducted in the Appalachian context (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011). There also exists a lack of research regarding the interactions that occur between adversity, supportive factors, hope, and resilience, with a definite need for more study in these areas (Munoz, Pearson et al., 2018). This study aimed to build upon the limited body of research regarding both the Appalachian context and the interactions among adversity, supportive factors, hope, and resilience through the use of nonexperimental cross-sectional research that was

quantitative in nature. Several quantitative instruments were utilized in the research, including the Adverse Child Experiences (ACEs) scale (Felitti et al., 1998), the Dispositional Hope Scale (Snyder et al., 1991), the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), and the Academic Resilience Scale (ARS-30; Cassidy, 2016).

The focus of the study was a target population that consists of emerging adults in the Appalachian region between the ages of 18 and 29. Consideration was given to ensure that participants accurately represented the intended research population, with all respondents included being required to have spent the majority of their adolescent experience in the targeted Appalachian region. Efforts were further made to reach respondents with education levels ranging from completion of some high school to attainment of a four-year college degree.

The data was analyzed through the conduction of a Bivariate (Pearson) Correlation, a linear regression analysis, and an assessment of mediation and moderation using Hayes (2018) PROCESS macro version 3.5. Appropriate assumptions were assessed prior to running each analysis. This data analysis allowed for an accurate and valid reporting of the research findings, which helped expand the existing body of research related to Appalachian emerging adults as well as hope, resilience, adversity, and social support.

Based upon the theories tested thus far, it is theorized that hope and resilience in emerging Appalachian adults who have been previously exposed to one or more ACEs will be dependent upon their perception of social support. Specifically, it is believed that the more frequent or severe the exposure to ACEs, the greater the level of social support will be required, and that the presence of enough social support will lead to increased hope that in turn will foster higher levels of academic resilience. Appendix B provides a conceptual model of this theorized outcome.

# Chapter 4: Results

The study's results and analysis are presented for the purpose of answering the research questions and testing the hypotheses presented in previous chapters. The presentation and analysis include a section describing the sample included in the study, as well as sections discussing each of the research questions and corresponding hypothesis. All analyses were conducted using IBM SPSS version 26.

## Descriptive Statistics

A total of 589 potential participants opened the survey, but only 200 met the final criteria for inclusion in the study by both completing all survey items and identifying as an emerging adult who spent most of their life and educational experience within the Appalachian region. Many of the excluded participants were removed due to leaving one or more items incomplete, or in some cases, opening the survey but not completing any items. Some respondents completed all items up until a certain point before dropping out of the survey. Additionally, due to the optional nature of the items, there were some participants who skipped individual items but continued through to the end of the survey.

Sixty-six individuals opened the survey and exited it prior to completing any items, while an additional 26 did not indicate informed consent. Thirty-three participants completed the informed consent but did not complete any additional items, and one only completed the informed consent and age questions. Twenty-four remaining respondents did not indicate necessary demographic details, 22 for age and two for identification with Appalachia. Of these, seven could have otherwise been included in the study, while 17 either dropped out of the survey or skipped multiple items. Fifty-four individuals were disqualified due to not completing the ACE scale in its entirety, 45 who dropped out prior to starting the scale, and nine who skipped

one or more items. Of those nine, six also skipped at least one other item, while three would have otherwise been considered for inclusion. Forty-one individuals dropped out prior to starting the hope scale, while eight individuals skipped at least one item, five of which would have been otherwise eligible. Sixty individuals completed the hope scale but dropped out prior to advancing to the academic resilience items, with an additional 24 participants either dropping out during the academic resilience scale or failing to complete at least one item, with three of these 24 participants otherwise eligible to participate. Twenty-six individuals dropped out prior to completing the MSPSS scale, while one participant dropped out prior to the MAPSS-SF, and one participant did not complete one of the MAPSS-SF items.

All of this points to several factors that caused potential participants to be excluded from the study. One factor was that there were clear patterns of participants dropping off at the conclusion of each scale. As the survey moved from scale to scale, groups of participants appeared to find out they still had more to do and opted not to continue with the survey. A second factor was that some participants skipped individual items across multiple scales all the way until the end of the survey. There was no apparent pattern to the skipped items. A third factor was individuals that failed to complete only one item on the entire survey. While this group accounted for only 13 potential respondents, it proved to be the most frustrating, as they could have been included in the analysis if not for skipping a single item. It is likely that these individuals skipped a single item as a result of both the survey design and user error. Because item responses were not marked as required, a participant could have accidentally clicked next to move past an item without responding. The items were marked not required to avoid participants feeling pressured to answer questions that caused them distress, but this issue could have been

improved in the survey design through participants being directed back to any items they skipped.

When all these exclusions were considered, 224 participants remained who completed all survey items. However, a number of these respondents were excluded from the final data set due to failing to meet the eligibility requirements. An additional 17 participants had to be removed due to their age being 30 or higher, and seven had to be removed because they did not identify with Appalachia.

The resulting usable sample included 200 individuals between the ages of 18–29. The mean participant age was 24.5 (*SD* = 3.21, $\sigma^2 = 10.29$). The full breakdown of participants by age can be found in Table 1.

**Table 1**

*Age of Research Participants*

| Age | *f* | Percent of Total |
|---|---|---|
| 18 | 10 | 5.0 |
| 19 | 8 | 4.0 |
| 20 | 5 | 2.5 |
| 21 | 24 | 12.0 |
| 22 | 10 | 5.0 |
| 23 | 23 | 11.5 |
| 24 | 18 | 9.0 |
| 25 | 23 | 11.5 |
| 26 | 14 | 7.0 |
| 27 | 24 | 12.0 |
| 28 | 18 | 9.0 |
| 29 | 23 | 11.5 |

*Note:* (*N* = 200)

All the individuals included in the analysis reported spending most of their life and educational experiences within the Appalachian region. Of the 200 participants, 155 (77.5%)

reported having spent most of their life and educational experiences within the Appalachian Coalfields.

Ninety-six participants (48%) identified as male, while 98 (49%) identified as female. Additionally, five participants (2.5%) indicated that their gender was not listed, while one participant (0.5%) preferred not to share their gender.

There was some variance in participant hope, academic resilience, and perceived social support based upon age, though the small sample for each age, along with differences in the mean number of ACEs for participants at each age, makes it difficult to draw any meaningful conclusions about the data. Descriptive statistics for the age breakdown and each variable can be found in Appendix O.

Participant exposure to ACEs did not differ significantly for those identifying as male or female. In comparison to their male counterparts, female respondents were slightly more hopeful (female, $M = 25.23$, $SD = 3.57$, $\sigma^2 = 12.72$; male, $M = 24.64$, $SD = 4.12$, $\sigma^2 = 16.98$). Like hope levels, female participants had slightly higher levels of total academic resilience than male respondents (female, $M = 108.74$, $SD = 16.38$, $\sigma^2 = 268.38$; male, $M = 105.24$, $SD = 19.36$, $\sigma^2 = 374.7$). Perceived social support according to the MSPSS followed this same pattern, with female respondents expressing perceptions of social support at a level slightly higher than males (female, $M = 66.32$, $SD = 12.55$, $\sigma^2 = 157.6$; male, $M = 62.64$, $SD = 16.65$, $\sigma^2 = 277.16$).

Those indicating that their gender was not listed reported experiencing adversity at a higher rate ($M = 4$, $SD = 2.92$, $\sigma^2 = 8.5$), had a lower average hope score in comparison to those identifying as male or female ($M = 21.8$, $SD = 3.9$, $\sigma^2 = 15.2$), and recorded similar levels of academic resilience to the male respondents ($M = 105.8$, $SD = 21.65$, $\sigma^2 = 468.7$). Additionally, this group of participants reported the highest perceived social support levels of the three groups

(*M* = 67, *SD* = 9.03, $\sigma^2$ = 81.5). Although these differences are interesting, the small sample (*n* = 5) is insufficient to draw meaningful conclusions.

Participants identifying specifically with the Coalfields had greater exposure to ACEs than those residing elsewhere in Appalachia (Coalfields, *M* = 2.35, *SD* = 2.23, $\sigma^2$ = 5.19; broader Appalachia, *M* = 1.13, *SD* = 1.65, $\sigma^2$ = 2.71). Respondents identified with the Coalfields also had lower overall hope levels (Coalfields, *M* = 24.7, *SD* = 3.95, $\sigma^2$ = 15.62; broader Appalachia, *M* = 25.58, *SD* = 3.66, $\sigma^2$ = 13.43), lower overall academic resilience levels (Coalfields, *M* = 106.23, *SD* = 18.64, $\sigma^2$ = 347.28; broader Appalachia, *M* = 110.1, *SD* = 15.55, $\sigma^2$ = 241.84), and slightly lower levels of perceived social support according to MSPSS (Coalfields, *M* = 64.47, *SD* = 14.90, $\sigma^2$ = 222.12; broader Appalachia, *M* = 65.31, *SD* = 14.12, $\sigma^2$ = 199.45). Again, while interesting data, it is based on a sample that had mostly individuals from the Coalfield region, with only 22.5% (*n* = 45) from other parts of Appalachia.

***Adverse Childhood Experiences***

The selected participants experienced childhood adversity at varied levels. Participants reported a mean ACE score of 2.08 (*SD* = 2.20, $\sigma^2$ = 4.87). Additionally, certain items on the ACE inventory proved to be much more common than others. Parental divorce or separation and having a household member struggle with depression, mental illness, or attempt suicide were by far the two most common ACE items, with 78 respondents (39%) reporting experiencing each of these ACEs. Full details about both the prevalence of individual ACEs and the overall number of ACEs experienced by research participants can be found in Table 2 and Figure 1.

**Table 2**

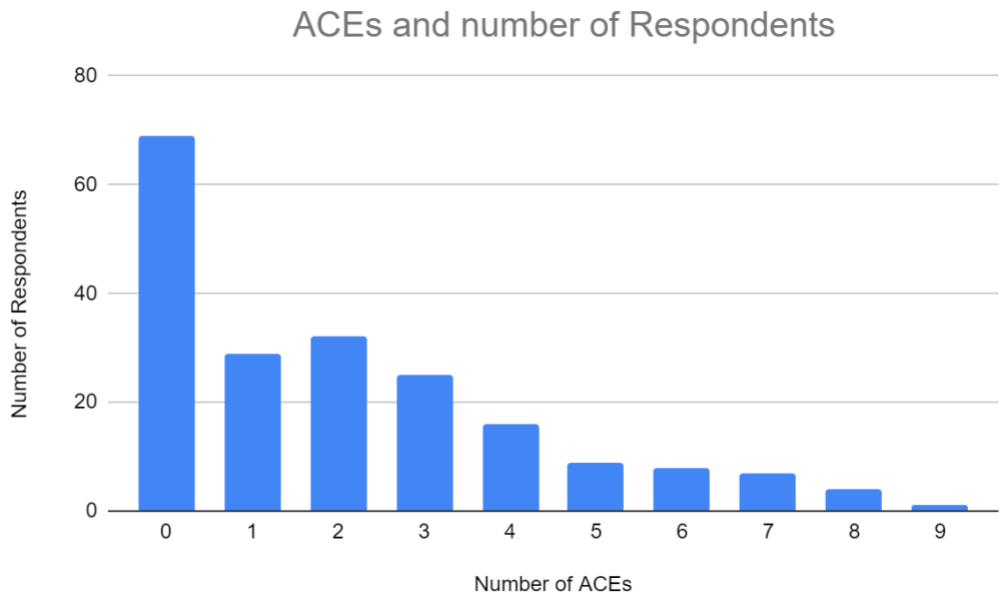
*ACEs Experienced by Research Participants*

| ACE | *f* | Percent of Total |
|---|---|---|
| Verbal Abuse | 60 | 30.0 |
| Physical Abuse | 21 | 10.5 |
| Sexual Abuse | 24 | 12.0 |
| Feeling Unloved or Uncared For | 51 | 25.5 |
| Lack of Food/Clothing or Parent Too Drunk/High To Care for You | 13 | 6.5 |
| Parental Divorce/Separation | 78 | 39.0 |
| Physical Abuse of Mother | 14 | 7.0 |
| Lived with Problem Drinker or Alcoholic, or Street Drug User | 62 | 31.0 |
| Household Member Depressed, Mental Illness, or Suicide Attempt | 78 | 39.0 |
| Household Member Incarceration | 14 | 7.0 |

*Note:* (*N* = 200)

**Figure 1**

*Overall Number of Respondents Reporting Each ACE Score (N = 200)*




***Participant Levels of Hope***

Participant hope levels were broken down by total hope levels and both agency and pathway hope levels. See Table 3 for full descriptive statistics regarding participant hope.

**Table 3**

*Descriptive Statistics for Hope*

| | Total Hope | Agency Hope | Pathway Hope |
|---|---|---|---|
| Mean | 24.9 | 12.16 | 12.74 |
| *SD* | 3.9 | 2.43 | 1.95 |
| $\sigma^2$ | 15.19 | 5.92 | 3.78 |
| *Mdn* | 25.0 | 12 | 13 |
| Mode | 24.0 | 12 | 13 |
| Minimum | 12.0 | 5 | 5 |
| Maximum | 32.0 | 16 | 16 |

*Note:* (*N* = 200)

In terms of the level of hope reported by research participants, participants had a mean total hope score of 24.9 (*SD* = 3.9, $\sigma^2$ = 15.19). The total hope score had a range of 20, with the lowest hope participant reporting a total hope score of 12, and the highest hope participant reporting a total hope score of 32, which is the maximum score possible on the hope scale. Participants scored slightly higher in the domain of pathways hope, with a mean pathway score of 12.74 (*SD* = 1.95, $\sigma^2$ = 3.78). The pathway hope score had a range of 10, with a low score of six and a high score of 16, which is the maximum score possible for pathway hope. In the domain of agency hope, participants had a mean score of 12.16 (*SD* = 2.43, $\sigma^2$ = 5.92). The agency hope score had a range of 11, with a low score of 5 and a high score of 16, which is the maximum score possible for agency hope.

Pathway hope scores were higher as a result of participants scoring highly on “I can think of many ways to get myself out of a jam” (*M* = 3.36, *SD* = 0.59, $\sigma^2$ = 0.35) and “There are a lot of ways around any problem” (*M* = 3.25, *SD* = 0.65, $\sigma^2$ = 0.42). In contrast, agency hope scores

were lower as a result of participants scoring lowest on "I meet the goals that I set for myself" (*M* = 2.83, *SD* = 0.7, $\sigma^2$ = 0.59). Full descriptive statistics for individual scale items on participant levels of hope can be found in Appendix P.

***Participant Levels of Academic Resilience***

Participant levels of academic resilience were broken down by total academic resilience levels, as well as by the perseverance, negative affect and emotional response, and reflecting and help seeking subscales. Full descriptive statistics for participant academic resilience can be found in Table 4.

**Table 4**

*Descriptive Statistics for Academic Resilience*

| | Total AR | Perseverance | Negative Emotion | Reflective/Help Seeking |
|---|---|---|---|---|
| Mean | 107.1 | 53.32 | 20.71 | 33.07 |
| *SD* | 18.02 | 7.89 | 6.21 | 7.04 |
| $\sigma^2$ | 324.8 | 62.31 | 38.56 | 49.50 |
| *Mdn* | 108 | 54 | 21 | 34 |
| Mode | 92, 106, 108, 127 | 58 | 21 | 31 |
| Minimum | 59 | 29 | 7 | 16 |
| Maximum | 140 | 67 | 35 | 45 |

*Note:* (*N* = 200)

Participants had a mean total academic resilience score of 107.1 (*SD* = 18.02, $\sigma^2$ = 324.8). Participant academic resilience had a range of 81, with a minimum score of 59 and a maximum score of 140.

Across the three academic resilience factors, participants reported a mean perseverance score of 53.32 (*SD* = 7.89, $\sigma^2$ = 62.31). Participant perseverance has a range of 38, with the

lowest participant scoring 29 and the highest participant scoring a 67. Additionally, the reflecting and adaptive-help-seeking factor saw a mean score of 33.07 (*SD* = 7.04, $\sigma^2$ = 49.50). The reflecting and help-seeking factor had a minimum participant score of 16 and a maximum score of 45. For the negative affect and emotional response factor, there was a score of 20.81 (*SD* = 6.21, $\sigma^2$ = 49.50). Participant scores ranged from 7 to 35. Appendix R displays the mean, standard deviation, and variance for each item on the ARS-30 from the current study.

While each of the three resilience subcategories contains a different number of items and thus a different score range, there are several items that point to negative affect and emotional response being the subcategory in which participants displayed the lowest levels of academic resilience. Out of the 30 items on the ARS-30 (Cassidy, 2016), three of the four individual items with a mean score below 3.0 were items from this subscale. These items included "I would probably get annoyed" (*M* = 2.43, *SD* = 1.18, $\sigma^2$ = 1.39), "I would probably get depressed" (*M* = 2.96, *SD* = 1.36, $\sigma^2$ = 1.85), and "I would be very disappointed" (*M* = 2.25, *SD* = 1.31, $\sigma^2$ = 1.71). Additionally, in comparing the mean score of each subscale to the maximum range for that scale, participants decisively scored the lowest on negative affect and emotional response, with the mean participant only scoring 59.5% of the available academic resilience points available, in comparison to the mean participant scoring 76.2% of the points available for perseverance and 73.5% available for help seeking. Appendix R displays the mean, standard deviation, and variance for each item on the ARS-30 from the current study.

***Participant Levels of Perceived Social Support***

Given that perceived social support was recorded utilizing two different scales, the descriptive statistics for each scale is reported. Full descriptive statistics for perceived social support can be found in Table 5.

**Table 5**

*Descriptive Statistics for Perceived Social Support*

| | Total MSPSS | MSPSS Sig. Other | MSPSS Family | MSPSS Friends | MAPSS-SF |
|---|---|---|---|---|---|
| Mean | 64.66 | 23.41 | 19.56 | 21.69 | 2.47 |
| *SD* | 14.7 | 6.08 | 7.29 | 5.85 | .92 |
| $\sigma^2$ | 216.12 | 37 | 53.17 | 34.26 | .85 |
| *Mdn* | 67 | 25 | 22 | 23 | 3.00 |
| Mode | 84 | 28 | 28 | 28 | 3.00 |
| Minimum | 12 | 4 | 4 | 4 | 0.00 |
| Maximum | 84 | 28 | 28 | 28 | 3.00 |

*Note:* (*N* = 200)

When looking at perceived social support as measured by Zimet et al.'s (1988) Multidimensional Scale of Perceived Social Support (MSPSS), respondents had a mean overall social support score of 64.66 (*SD* = 14.7, $\sigma^2$ = 216.12). Participants ranged in overall level of perceived social support, with a minimum MSPSS score of 12 and a maximum score of 84, which is also the maximum possible score on the MSPSS scale.

In breaking this score down into the MSPSS subcategories, participants perceived the greatest level of social support from a significant other, with a mean score of 23.41 (*SD* = 6.08, $\sigma^2$ = 37). The second highest level of perceived social support came from friends, with a mean score of 21.69 (*SD* = 5.85, $\sigma^2$ = 34.26). For perception of social support from family, participants had a mean score of 19.56 (*SD* = 7.29, $\sigma^2$ = 53.17). In each of these subscales, participants showed a range in level of perceived social support, with each subscale having a minimum score of 4 and a maximum score of 28. This range represents the minimum and maximum possible scores for each subscale.

Two items related to social support from family emerged as the two particular items to have the lowest mean score. “I get the emotional help and support I need from my family” had a mean response score of 4.65 (*SD* = 2.03, $\sigma^2 = 4.15$). “I can talk about my problems with my family” had a mean response score of 4.43 (*SD* = 2.09, $\sigma^2 = 4.39$). A full report of the individual items from the MSPSS can be found in Appendix S.

On the Multifactoral Assessment of Perceived Social Support short form (MAPSS-SF), participants had a mean MAPSS score of 2.47 (*SD* = .924, $\sigma^2 = 0.85$). Many participants, 68.5% (*n* = 137), reported perceiving enough or more than enough social support on all three scale items. Seventeen-point five percent (*n* = 35) of respondents perceived support in two of the three domains. Smaller numbers reported perceiving social support on 0 or 1 items, with 8% (*n* = 16) feeling they did not perceive enough support on any of the scale items and 6% (*n* = 12) feeling they only perceived enough support in one of the areas.

Participants were most likely to report that they had enough or more than enough trust toward those in their personal life. In contrast to this, participants were less likely to report that they had enough or more than enough acceptance from those who were important to them or that the people in their personal life supported their ability to stay healthy. The full information about participant responses on the MAPSS-SF can be found in Table 6.

**Table 6**

*MAPSS-Short Form Responses of Research Participants*

| Scale Item | *f* Not Enough | Percent of Total | *f* Enough or More than Enough | Percent of Total |
|---|---|---|---|---|
| How much do you feel accepted for who you are by those important to you? | 40 | 20.0 | 160 | 80.0 |
| How much do you feel that you can trust those in your personal life? | 30 | 15.0 | 170 | 85.0 |
| How much do you feel that people in your personal life support your ability to stay healthy? | 37 | 18.5 | 163 | 81.5 |

**Data Analysis and Evaluation of Research Questions and Hypotheses**

The ensuing section contains the statistical analysis performed utilizing the participant data. Relationships between variables were deemed to be significant if they had a *p* value that was < .05. Because multiple tests are being conducted, an alpha correction was conducted using a Bonferroni correction. After this correction was applied, the *p* value to indicate a significant relationship was < .01. This section also discusses the results of homogeneity and normality tests that were conducted in order to support the conducted analysis. Additionally, the evaluation of the research questions and hypotheses posed are discussed considering the results of the study.

***H1: Relationship Between Adversities and Hope***

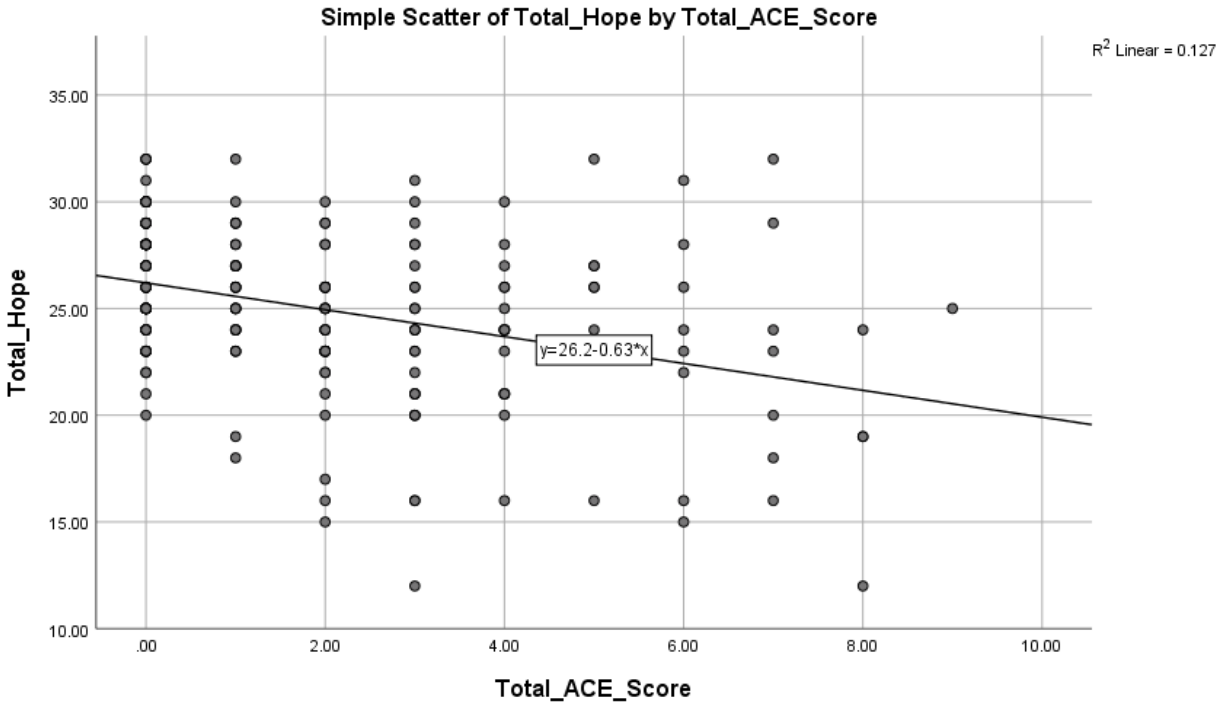
It was hypothesized that there would be a negative correlation between exposure to adverse childhood events and levels of hope. To validate this negative connection between ACEs and hope, a Bivariate (Pearson) Correlation analysis was conducted for the level of adversity and the level of hope at the pathway, agency, and total hope levels.

Prior to conducting this analysis, each of the variables was assessed to determine the appropriateness of this correlation. Each of the variables analyzed fell into either the interval or ratio level. Additionally, since all 200 participants completed all items on the survey instrument, there were no missing data sets, with every ACE score having a hope score for the same participant.

In order to establish that a linear relationship existed between adversity and hope, a simple scatterplot was generated and visually inspected. The inspection of these scatterplots supported that a linear relationship existed between total ACE score and total hope score, as well as between total ACE score and each of the pathway and agency hope subscales. The scatter plot showing total hope and total ACE scores can be found in Figure 2, while the plots reflecting agency and pathway hope can be found in Appendix T.

**Figure 2**

*Scatterplot of Total Hope and Total ACE Score*




There were a small number of outliers in the data that fell more than three standard deviations away from the mean. These outliers included one participant who reported an ACE score of 9 and a total hope score of 25, as well as two participants who reported total hope scores of 12 and ACE scores of 8 and 3, for a total of three possible outliers. These outliers were included in order to fully capture those with high numbers of ACEs and low hope scores.

The skewness and kurtosis for each variable can be found in Table 7. The data for total hope, and for each of the hope subscales, reflected a negative skewness. While the data is skewed, the Pearson correlation was still deemed appropriate since it is considered somewhat robust to deviations from normality (Laerd Statistics, 2018).

**Table 7**

*Skewness and Kurtosis for Research Variables*

| Variable | Skewness | *SE* | *z* | Kurtosis | *SE* | *z* |
|---|---|---|---|---|---|---|
| ACE Score | 1.033 | .172 | 6.0 | .325 | .325 | .95 |
| Total Hope | -.722 | .172 | -4.2 | .779 | .342 | 2.27 |
| Agency Hope | -.769 | .172 | -4.47 | .537 | .342 | 1.57 |
| Pathway Hope | -.527 | .172 | -3.06 | .526 | .342 | 1.54 |
| Total MSPSS | -.911 | .172 | -5.29 | .769 | .342 | 2.24 |
| MSPSS SO | -1.604 | .172 | -9.32 | 1.86 | .342 | 5.44 |
| MSPSS Family | -.682 | .172 | -3.97 | -.680 | .342 | -1.99 |
| MSPSS Friends | -1.071 | .172 | -6.23 | .864 | .342 | -6.23 |
| MAPSS-SF | -1.675 | .172 | 9.74 | 1.643 | .342 | 4.80 |
| Total AR | -.571 | .172 | -3.32 | -.114 | .342 | -.33 |
| AR Perseverance | -.730 | .172 | -4.24 | .247 | .342 | .722 |
| AR Reflective/Help Seek | -.434 | .172 | -2.52 | -.479 | .342 | -1.40 |
| AR Negative/Emotion | -.062 | .172 | -.36 | -.470 | .342 | -1.37 |

*Note:* ($N$ = 200)

The analysis supported several statistically significant correlations at the .01 level. The weakest but still statistically significant correlation was observed between ACEs experienced and pathways hope score ($r$ = -.26, $p$ < .01). Adverse childhood events experienced and total hope score had a moderate correlation ($r$ = -.357, $p$ < .01). Adverse childhood events experienced

and agency hope had the strongest correlation of the three scales. Though still in the moderate range, this correlation was slightly stronger than that of the total hope scale ($r$ = -.363, $p$ < .01). Table 8 shows the full correlation details for ACEs and hope.

**Table 8**

*Descriptive Statistics and Correlations for ACEs and Hope*

| Variable | *n* | *M* | *SD* | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|
| 1. ACEs experienced | 200 | 2.08 | 2.21 | __ | -.357* | -.260* | -.363* |
| 2. Total Hope Score | 200 | 24.89 | 3.9 | -.357* | __ | .861* | .913* |
| 3. Pathways Hope Score | 200 | 12.73 | 1.95 | -.260* | .861* | __ | .579* |
| 4. Agency Hope Score | 200 | 12.16 | 2.43 | -.363* | .913* | .579* | __ |

*Note:* ($N$ = 200)

*$p$ < .01(two-tailed)

As evidenced in the Pearson correlation analysis, the data supports the hypothesis that there would be a negative correlation between total ACE score and level of participant hope. The ACE score statistically explained 7% of the variability in pathway hope ($R^2$ = -.067), with an increase in the number of ACEs experienced reflecting a small correlation with a decrease in pathway hope in emerging Appalachian adults, $r$(198) = -.26, $p$ < .01. Additionally, 13.2% of the variability in agency hope ($R^2$ = -.132) could be statistically explained by the number of ACEs experienced, with an increase in the number of ACEs experienced reflecting a moderate correlation with a decrease in agency hope in emerging Appalachian adults, $r$(198) = -.363, $p$ < .01. When looking at the overall hope scale, 13% of the variability in total hope ($R^2$ = -.127) was statistically explained by ACE score, with an increase in the number of ACEs experienced

reflecting a moderate correlation with a decrease in total hope in emerging Appalachian adults, $r(98) = -.357$, $p < .01$.

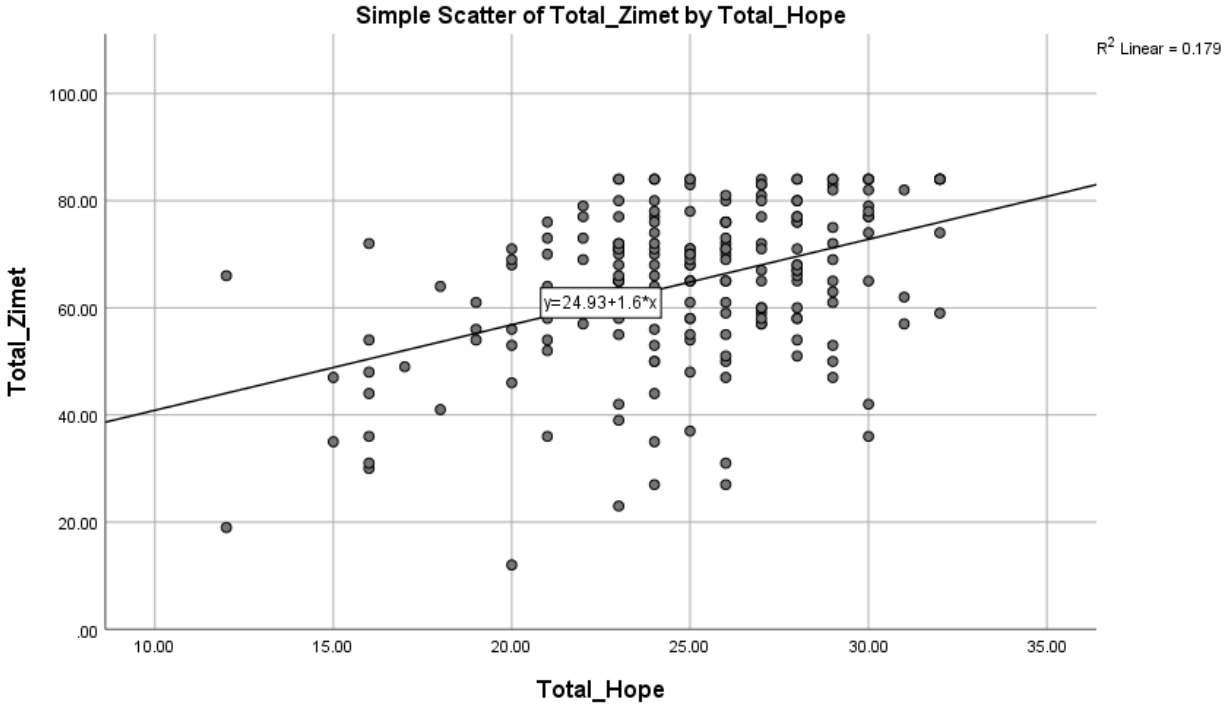
***H2: Relationship Between Perceived Social Support and Hope***

It was hypothesized that there would be a positive correlation between perceived social support and hope. A Pearson correlation was conducted for hope and social support to evaluate the positive connection between hope and perceived social support. Prior to this analysis, the variables included were assessed to determine whether this was an appropriate analysis for the data. Each of the variables analyzed fell into either the interval or ratio level. Additionally, since all 200 participants completed all items on the survey instrument, all 200 responses were paired.

To establish that a linear relationship existed between perceived social support and hope, a simple scatterplot was generated and visually inspected. A visual inspection of scatterplot points supported the existence of a linear relationship between the total hope score and total perceived social support. This linear relationship was present between total hope, pathways, and agency hope when compared to total perceived social support as measured by both the MSPSS and MAPSS-SF. This linear relationship was also evident when comparing total hope, pathway hope, and agency hope to each of the MSPSS subscales. The scatterplot for total MSPSS and total hope can be found in Figure 3, while the other scatterplots can be found in Appendix U.

**Figure 3**

*Scatterplot of Total Hope and Total Social Support*




Three instances of outliers in the data were more than three standard deviations from the mean. Two respondents reported total hope scores of 12, with total MSPSS scores of 19 and 66. One additional respondent reported a total MSPSS score of 12, with a total hope score of 20. It was decided to include these outliers to allow for a full snapshot of individuals with reduced social supports and hope levels.

In assessing the data for normality, the MSPSS total scale and various MSPSS subscales reflected skewness and kurtosis values that did not fully support a normal distribution. Additionally, as discussed during the analysis for hypothesis 1, the data for total hope, and for each of the hope subscales, reflected a negative skewness. Skewness and kurtosis values for each variable used in the analysis can be found in Table 7. While the skewness and kurtosis values do

not fully support a normal distribution, the Pearson correlation was still deemed appropriate since it is considered somewhat robust to deviations from normality (Laerd Statistics, 2018).

Based upon this correlation analysis, all analyzed measures of hope reflected statistically significant correlations with all analyzed measures of perceived social support, with effect sizes ranging from small to moderate. Overall, pathway hope scores had a weaker correlation with measures of perceived social support than agency hope and total hope scores.

The strongest effect size was found in the correlation between agency hope and total perceived social support on the MSPSS scale, $r(198) = .47$, $p < .01$, with the level of total perceived social support statistically explaining 22% of the variability in agency hope score ($R^2 = .22$). There was also a moderate effect size in the correlation between total hope and overall perceived social support as measured by the MPSS scale, $r(198) = .42$, $p < .01$, with the level of total perceived social support statistically explaining 18% of the variability in total hope score ($R^2 = .18$). A summary of correlation results for all the hope and social support subscales can be found in Table 9.

**Table 9**

*Descriptive Statistics and Correlations for Hope and Perceived Social Support*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Total Hope | 24.90 | 3.90 | ___ | .86* | .91* | .42* | .24* | .36* | .37* | .33* |
| 2. Pathway Hope | 12.74 | 1.95 | .86* | ___ | .58* | .27* | .16* | .22* | .23* | .21* |
| 3. Agency Hope | 12.16 | 2.43 | .91* | .58* | ___ | .47* | .26* | .40* | .40* | .36* |
| 4. Total MPSS | 64.66 | 14.7 | .42* | .27* | .47* | ___ | .77* | .77* | .75* | .60* |
| 5. MSPSS Sig. Other | 23.41 | 6.08 | .24* | .16* | .26* | .77* | ___ | .35* | .45* | .47* |
| 6. MPSS Family | 19.56 | 7.29 | .36* | .22* | .40* | .77* | .35* | ___ | .34* | .51* |
| 7. MPSS Friends | 21.68 | 5.85 | .37* | .23* | .40* | .75* | .45* | .34* | ___ | .37* |
| 8. Total MAPSS | 2.47 | 0.92 | .33* | .21* | .36* | .48* | .40* | .40* | .30* | ___ |

*Note:* (*N* = 200)

*$p < .01$ (two-tailed)

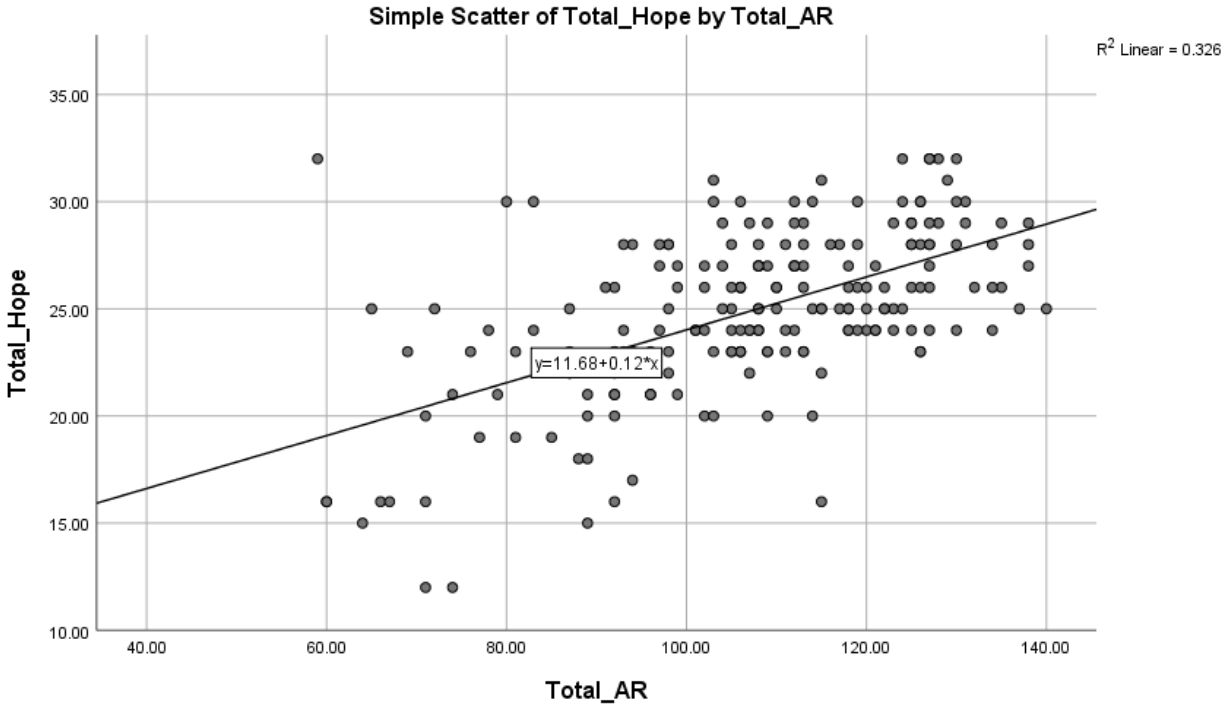
***H3: Relationship Between Hope and Academic Resilience***

It was hypothesized that there would be a positive correlation between level of hope and level of academic resilience. To evaluate this connection, a Pearson correlation analysis was conducted for hope and academic resilience. Prior to conducting this analysis, the data sets included were evaluated for certain assumptions in order to assess the appropriateness of a Pearson correlation. Each of the variables analyzed fell into either the interval or ratio level. Additionally, since all 200 participants completed all items on the survey instrument and were identified throughout data collection, all 200 responses were paired.

In order to establish that a linear relationship existed between hope and academic resilience, a simple scatterplot was generated and visually inspected. A visual inspection of scatterplot points supported the existence of a linear relationship between total hope score and total academic resilience, as well as among all the related hope and academic resilience subscales. The scatterplot for total academic resilience and total hope can be found in Figure 4, while the other scatterplots can be found in Appendix V.

**Figure 4**

*Scatterplot of Total Hope and Total Academic Resilience*




There were a small number of outliers included for total hope, pathway hope, and agency hope in order to reflect the full picture of low hope individuals. For academic resilience, there were no outliers for total academic resilience, the reflective subcategory, or the negative emotion subcategory. There were a minimal number of outliers included in the perseverance category. It

was decided to include these outliers to reflect an individual's various hope and resilience levels in the full analysis.

In assessing the data for normality, as discussed in the analysis for hypothesis 1, the data for total hope, and for each of the hope subscales, reflected a negative skewness. Additionally, the data for total academic resilience and for the academic resilience perseverance subscale both reflected a negative skewness. Skewness and kurtosis values for each variable used in the analysis can be found in Table 7. Although the data from both the hope and academic resilience scales reflected levels of skewness, it was determined that a Pearson correlation would still be appropriate to conduct since it is considered somewhat robust to deviations from normality (Laerd Statistics, 2018).

Based upon the correlation analysis, all evaluated hope measures reflected the hypothesized positive correlation at a statistically significant level. Total hope and agency hope were more strongly correlated with the level of academic resilience than pathway hope. The correlation between the academic resilience subscales and level of hope were similar in effect size, with the negative emotion subscale indicating a slightly stronger effect size than the other two subscales. Overall, the strongest effect size came in the correlation between the total hope score and the total academic resilience level, $r(198) = .57$, $p < .01$, with total level of hope statistically explaining 33% of the total academic resilience score ($R^2 = .33$). A strong effect size, $r(198) = .55$, $p < .01$, was also evident in the correlation between agency hope and total academic resilience, with agency hope statistically explaining 31% of the variation in total resilience ($R^2 = .31$). The full results of the correlation analysis can be found in Table 10.

**Table 10**

*Descriptive Statistics and Correlations for Hope and Academic Resilience*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Total Hope | 24.89 | 3.90 | ___ | .86* | .91* | .57* | .48* | .48* | .5* |
| 2. Pathway Hope | 12.73 | 1.95 | .86* | ___ | .58* | .45* | .37* | .35* | .44* |
| 3. Agency Hope | 12.16 | 2.43 | .91* | .58* | ___ | .55* | .47* | .49* | .45* |
| 4. Total Ac. Resil. | 107.10 | 18.02 | .57* | .45* | .55* | ___ | .92* | .87* | .74* |
| 5. AR Persevere | 53.32 | 7.89 | .48* | .37* | .47* | .92* | ___ | .77* | .54* |
| 6. AR Reflective | 33.07 | 7.04 | .48* | .35* | .49* | .87* | .77* | ___ | .42* |
| 7. AR Emotion | 20.71 | 6.21 | .5* | .44* | .45* | .74* | .54* | .42* | ___ |

*Note:* ($N$ = 200)

*$p$ < .01 (two-tailed)

***H4: Hope as Moderator Between ACEs and Academic Resilience***

It was hypothesized that hope would serve as a moderator between number of ACEs experienced and level of academic resilience. In order to evaluate this hypothesis, a multiple regression analysis was conducted. Prior to conducting the analysis, assumptions were evaluated to ensure that a multiple regression analysis was appropriate for testing this hypothesis. All charts and figures used in the assumption testing can be found in Appendix W.

It was determined that a linear relationship existed among the variables. This linearity was evaluated through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, academic resilience, and the independent variables, ACE score and total hope score. There was homoscedasticity, as assessed by a visual inspection of a plot of studentized residuals versus unstandardized predicted values.

There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.87. All correlations between variables were at a level lower than $R$ = .7, and tolerance and VIF

values were with the acceptable range (total ACE score, tolerance = .87, VIF = 1.15; total hope, tolerance = .87, VIF = 1.15). This supports that the data was free of multicollinearity.

One respondent was identified as a potential outlier based upon standardized residual (-4.04) and studentized deleted residual (-4.31) numbers. However, all 200 participants were ultimately included in the analysis, with all having a Cook's distance value of less than 1, which reflects that there were not any highly influential points (Cooke & Weisberg, 1982). Based upon a visual analysis of both a histogram and normal P-P plot, it was determined that the residuals were approximately normally distributed.

The overall model had an $R^2$ value of 39.1%, with an adjusted $R^2$ of 38.5%, a large effect size according to Cohen (1988). The number of ACEs experienced and overall hope score statistically significantly predicted academic resilience, $F(2, 197) = 63.22$, $p < .001$. The coefficient for ACEs experienced was -2.24 (95% CI, -3.19 to -1.28, $p < .001$). The coefficient for total hope score was 2.187 (95% CI, 1.64 to 2.73, $p < .001$).

Predictions were made to determine the mean academic resilience levels for both high and low hope individuals who experienced four ACEs. For an individual with a below average hope score of 22, mean academic resilience was predicted as 96.46 (95% CI, 93.69 to 99.23). For an individual with an above average hope score of 28, mean academic resilience was predicted as 109.58 (95% CI, 106.07 to 113.1).

The multiple regression analysis was repeated to assess these interactions and relationships when taking both the agency and pathway hope subscales into consideration. Assumptions were again evaluated for the use of a regression analysis that incorporated each subscale.

Total ACE score, agency hope score, and total academic resilience score, were found to be linear. This linearity was evaluated through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, academic resilience, and the independent variables, ACE score and agency hope score. There was also homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values.

There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.9. The data was free of multicollinearity, with all correlations lower than .7, and acceptable tolerance and VIF values (total ACE score, tolerance = .87, VIF = 1.15; agency hope score, tolerance = .87, VIF = 1.15).

One respondent was identified as a potential outlier based upon standardized residual (-3.79) and studentized deleted residual (-3.85) numbers. Ultimately, all 200 participants were included in the analysis, with all having a Cook's distance value of less than 1, which reflects that there were not any highly influential points (Cooke & Weisberg, 1982). Based upon a visual analysis of both a histogram and normal P-P plot, it was determined that the residuals were approximately normally distributed.

The overall model had an $R^2$ value of 37.3%, with an adjusted $R^2$ of 36.6%. The number of ACEs experienced and the agency hope score statistically significantly predicted total academic resilience, $F(2, 197) = 58.54$, $p < .001$. The coefficient for ACEs experienced was -2.27 (95% CI = -3.25 to -1.3, $p < .001$). The coefficient for agency hope score was 3.34 (95% CI = 2.46 to 4.23, $p < .001$).

For the analysis that utilized total ACE score, it showed there was linearity between pathways hope score and total academic resilience score. This linearity was evaluated through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, academic resilience, and the independent variables, ACE score and pathway hope score.

This analysis also had homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.76. The data was free of multicollinearity, with all correlations lower than .7, and with tolerance and VIF values within the acceptable range (total ACE, tolerance =.93, VIF = 1.07; pathway hope, tolerance = .93, VIF = 1.07).

One respondent was identified as a potential outlier based upon standardized residual (-3.39) and studentized deleted residual (-3.45) values. All 200 participants were included in the analysis, with all having a Cook's distance value of less than 1, which reflects that there were not any highly influential points (Cooke & Weisberg, 1982). Based upon a visual analysis of both a histogram and normal P-P plot, it was determined that the residuals were approximately normally distributed.

The overall model had an $R^2$ value of 31.7%, with an adjusted $R^2$ of 31.0%. The number of ACEs experienced and the pathways hope score significantly predicted total academic resilience, $F(2, 197) = 45.75$, $p < .001$. The coefficient for ACEs experienced was -2.29 (95% CI = -3.83 to -1.86, $p < .001$). The coefficient for pathway hope score was 3.344 (95% CI = 2.23 to 4.46, $p < .001$).

In order to determine whether hope was a moderating variable between ACEs experienced and level of academic resilience, a moderation analysis was conducted using Andrew F. Hayes's PROCESS macro version 3.5. This analysis looked at whether total hope played a moderating role in the relationship between ACEs experienced and total academic resilience. The interaction term was not statistically significant ($b$ = -.04, $SE$ = .10, $p$ = .7), indicating that total hope did not play a moderating role in the relationship between ACEs experienced and total academic resilience.

Since hope was found not to be a moderating variable, Hayes's PROCESS was repeated, this time analyzing whether hope played a mediating role. In this analysis, hope was found to play a mediating role in the relationship between ACEs experienced and total academic resilience. Adverse childhood experiences had a total effect on academic resilience of -3.61 (95% CI = -4.63 to -2.59), with a direct effect of -2.23 (95% CI = -3.19 to -1.27, $p$ < .001). When hope is considered, the unstandardized indirect effect is -1.38 (95% CI = -2.16 to -.696, $p$ < .001). Thus, while ACEs still negatively impact academic resilience when higher levels of hope are present, this negative impact is significantly mediated by hope, with 38% of total academic resilience managed through the hope level of the individual.

***H5: Perceived Social Support as a Mediator Between ACEs and Hope***

It was hypothesized that perceived social support would serve as a mediator between ACEs experienced and hope. In order to evaluate this hypothesis, a multiple regression analysis was conducted. Prior to conducting the analysis, the relevant assumptions were evaluated to assure a regression analysis was appropriate. All charts and figures used in the assumption testing can be found in Appendix X.

It was determined that a linear relationship existed among the variables. This linearity was initially evaluated through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, total hope, and the independent variables, number of ACEs experienced and perceived social support as measured by the total MSPSS score.

The data had independence of residuals, as assessed by a Durbin-Watson statistic of 2.28. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals verses unstandardized predicted values. The data was free of multicollinearity, with all correlations lower than $r = .7$ and acceptable tolerance and VIF values (total ACE, tolerance = .82, VIF = 1.21; total MSPSS, tolerance = .82, VIF = 1.21).

One respondent was identified as a potential outlier based upon standardized residual (-3.65) and studentized deleted residual (-3.78) numbers. All 200 participants were included, as all leverage points were smaller than .2 and there were no Cooke's distance values above 1.0. Based upon a visual analysis of both a histogram and normal P-P plot, it was determined that the residuals were approximately normally distributed.

The overall model had an $R^2$ value of 21.8%, with an adjusted $R^2$ of 21.0%. The number of ACEs experienced and the overall perceived social support score on the MPSS statistically significantly predicted total hope, $F(2, 197) = 27.44$, $p < .001$. The coefficient for ACEs experienced was -.38 (95% CI = -.63 to -.142, $p < .001$). The coefficient for total perceived social support as measured by MPSS was .09 (95% CI = .05 to .12, $p < .001$).

Predictions were made to determine the mean total hope levels for both individuals reporting high levels and low levels of perceived social support while experiencing four ACEs.

For an individual with a below average MSPSS score of 51, mean total hope was predicted as 22.96 (95% CI, 22.25 to 23.66). For an individual with an above average MPSS score of 79, mean total hope was predicted as 25.331 (95% CI, 24.4 to 26.27).

The multiple regression analysis was repeated to assess these interactions and relationships when taking both the agency and pathway hope subscales into consideration. Assumptions were again evaluated for the use of a regression analysis that incorporated each subscale.

For the agency subscale, a linear relationship was determined through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, agency hope, and the independent variables, adversity as measured by total ACE score, and total social support as measured by total MSPSS score.

There was homoscedasticity, as assessed by a visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was independence of residuals (Durbin-Watson = 2.15). The data was free of multicollinearity, with all correlations below .7 and tolerance and VIF values in the acceptable range (total ACE score, tolerance = .824, VIF = 1.21; MSPSS total, tolerance = .82, VIF = 1.21).

One respondent was identified as a potential outlier based upon standardized residual (-3.32) and studentized deleted residual (-3.42) values. All 200 participants were included, with all leverage points smaller than .2, and all having a Cook's distance value of less than 1, which reflects that there were not any highly influential points (Cooke & Weisberg, 1982). A visual analysis of both a histogram and normal P-P plot reflected residuals that were approximately normally distributed.

The overall model had an $R^2$ value of 25.1%, with an adjusted $R^2$ of 24.3%. The number of ACEs experienced and overall MSPSS score statistically significantly predicted agency hope, $F(2, 197) = 32.98$, $p < .001$. The coefficient for total ACE score was -.23 (95% CI = -.37 to -.08, $p = .003$). The coefficient for total MSPSS score was .06 (95% CI = .04 to .09, $p < .001$).

For the pathway subscale, a linear relationship was determined through visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Additionally, partial regression plots were visually inspected to establish a linear relationship between the dependent variable, agency hope, and the independent variables, adversity as measured by total ACE score, and total social support as measured by total MSPSS score.

There was homoscedasticity, as assessed by a visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was independence of residuals (Durbin-Watson = 2.14). The data was free of multicollinearity, with all correlations below .7 and tolerance and VIF values in the acceptable range (total ACE score, tolerance = .82, VIF = 1.21; MSPSS total, tolerance = .82, VIF = 1.21).

Two respondents were identified as potential outliers based upon standardized residual (-3.39, -3.02) and studentized deleted residual (-3.54, -3.10) values. All 200 participants were included, with all leverage points smaller than .2, and all having a Cook's distance value of less than 1, which reflects that there were not any highly influential points (Cooke & Weisberg, 1982). A visual analysis of both a histogram and normal P-P plot reflected residuals that were approximately normally distributed.

The overall model had an $R^2$ value of 9.7%, with an adjusted $R^2$ of 8.8%. The number of ACEs experienced and overall MSPSS score statistically significantly predicted pathway hope,

$F(2, 197) = 10.6$, $p < .001$. The coefficient for total ACE score was -.16 (95% CI = -.29 to -.029, $p = .017$). The coefficient for total MSPSS score was .03 (95% CI = .01 to .05, $p = .012$).

In order to determine whether perceived social support was a mediating variable between ACEs experienced and level of hope, a mediation analysis was conducted using Andrew F. Hayes's PROCESS macro version 3.5. This analysis looked at whether total perceived social support as measured by the MSPSS scale played a moderating role in the relationship between ACEs experienced and total hope.

In this analysis, perceived social support was found to play a mediating role in the relationship between ACEs experienced and total hope. Adverse childhood experiences had a total effect on total hope of -.63 (95% CI = -.86 to -.4), with a direct effect of -.38 (95% CI = -.63 to -.14, $p = .002$). When perceived social support is considered, the unstandardized indirect effect is -.25 (95% CI = -.40 to -.11). Thus, while ACEs still negatively impact hope when higher levels of perceived social support are present, this negative impact is significantly mediated by perceived social support, with 39% of total hope managed through the perceived social support level of the individual.

**Conclusion**

There were several consistent themes that emerged from the research findings and analysis. One was that increased exposure to ACEs was negatively correlated with all measures of hope, academic resilience, and perceived social support. The strength and statistical significance of these correlations can be found in the correlation matrix in Appendix Y, as well as in Tables 9 and 10. These negative correlations support the first research hypothesis that there would be a negative correlation between exposure to ACEs and levels of hope. This negative correlation was moderate between ACEs and agency hope ($r = -.36$, $p < .01$) and between ACEs

and total hope ($r$ = -.36, $p$ < .01). While smaller, this negative correlation was also evident in the relationship between ACEs and pathways hope ($r$ =-.26, $p$ < .01).

Another theme to emerge was the positive role that perceived social support played in interacting with hope and academic resilience levels. As shown in Figure 2 and Tables 9 and 10, perceived social support showed positive correlations with levels of hope and academic resilience. These positive correlations support the second research hypothesis that there would be a positive correlation between perceived social support and hope.

The positive correlation was moderate between perceived social support and total hope (total MSPSS, $r$ = .42, $p$ < .01; total MAPSS-SF, $r$ = .33, $p$ < .01), as well as between perceived social support and agency hope (total MSPSS, $r$ = .47, $p$ < .01; total MAPSS-SF, $r$ = .36, $p$ < .01). While smaller, this positive correlation was also evident in the relationship between perceived social support and pathways hope (total MSPSS, $r$ = .27, $p$ < .01; total MAPSS-SF, $r$ = .21, $p$ < .01).

This positive relationship between hope and perceived social support also supports the fifth research hypothesis that perceived social support would play a mediating role in the relationship between ACEs and hope. There was definite evidence of the impact perceived social support had implications for the relationship between ACEs and levels of hope (total hope and total MSPSS, $R^2$ = 21.8%, adjusted $R^2$ = 21.0%; agency hope and total MSPSS, $R^2$ = 25.1%, adjusted $R^2$ = 24.3%; pathway hope and total MSPSS, $R^2$ = 9.7%, adjusted $R^2$ = 8.8%). Thus, the level of perceived social support predicted the level of hope when controlling for how many ACEs were experienced. Additionally, the hypothesis that perceived social support would serve as a mediating variable between ACEs and hope was supported.

A third theme to emerge was the positive role that levels of hope played in the academic resilience levels of participants. As shown in both Table 10 and Figure 2, hope showed positive correlations with academic resilience levels. These positive correlations support the third research hypothesis that there would be a positive correlation between hope and academic resilience. Both total hope and agency hope reflected a large correlation with academic resilience levels (total hope and total academic resilience, $r = .57$, $p < .01$; total academic resilience and agency hope, $r = .55$, $p < .01$). A moderate positive correlation was also evident in the relationship between pathway hope and academic resilience ($r = .45$, $p < .01$).

These positive interactions between hope and academic resilience partially support the fourth research hypothesis in the sense that hope has a statistically significant interaction in the relationship between ACEs and academic resilience. However, it was incorrect that hope would play a moderating role between ACEs and academic resilience, as it instead played a mediating role. Total hope affected the relationship between ACEs experienced and levels of academic resilience, with higher levels of hope amplifying academic resilience levels for respondents experiencing adversities (total hope and total academic resilience, $R^2 = 39.1\%$, adjusted $R^2 = 38.5\%$; agency hope and total academic resilience, $R^2 = 37.3\%$, adjusted $R^2 = 36.6\%$; pathway hope and total academic resilience, $R^2 = 31.7\%$, adjusted $R^2 = 31.0\%$).

Also emerging as a significant theme was the increased relationship that total hope and agency hope had with the number of ACEs, academic resilience, and perceived social support levels in comparison to pathway hope. For example, total hope ($r = -.36$, $p < .01$) and agency hope ($r = -.36$, $p < .01$) were both more negatively affected by ACEs than was pathway hope ($r = -.26$, $p < .01$). This same trait, though in positive form, emerged in assessing the relationships between hope and social support, as well as hope and academic resilience. Figure 2 depicts a

visual reflection of these relationships, with positive correlations to both academic resilience and perceived social support levels greater for total hope and agency hope than those for pathway hope.

Because of this, total hope ($R^2$ = 39.1%, adjusted $R^2$ = 38.5%) and agency hope ($R^2$ = 37.3%, adjusted $R^2$ = 36.6%) levels explained a greater percentage of the variability in academic resilience levels than did pathway hope levels ($R^2$ = 31.7%, adjusted $R^2$ = 31%). The same was true when looking at how perceived social support levels predicted hope levels. Total hope ($R^2$ = 21.8%, adjusted $R^2$ = 21%) and agency hope ($R^2$ = 25.1%, adjusted $R^2$ = 24.3%) were once again more connected than pathway hope ($R^2$ = 9.7%, adjusted $R^2$ = 8.8%).

A final theme to emerge was the consistent presence of data that reflected concerns involving family support and emotional and mental health concerns. Thirty-nine percent of respondents ($n$ = 78) reported having a household member who struggled with depression, mental illness, or attempted suicide. Perception of social support from family had the largest negative correlation with ACEs ($r$ = -.577, $p$ < .01). When looking at overall MSPSS levels, participants reported lower mean levels of family support ($SD$ = 7.29, $\sigma^2$ = 53.17) than that received from a significant other ($M$ = 23.41, $SD$ = 6.08, $\sigma^2$ = 37) or friends ($M$ = 21.68, $SD$ = 5.85, $\sigma^2$ = 34.26). The two MSPSS individual scale items with the lowest mean scores, “I get the emotional help and support I need from my family” ($M$ = 4.65, $SD$ = 2.03, $\sigma^2$ = 4.15) and “I can talk about my problems with my family” ($M$ = 4.43, $SD$ = 2.09, $\sigma^2$ = 4.39), further point to the concerns surrounding family support and mental health.

From a mental health and emotional health standpoint, participants seemed to particularly struggle with their emotions. Three of the lowest four mean scores on the ARS-30 came in the domain of negative affect and emotional response. These items included “I would probably get

annoyed" ($M$ = 2.43, $SD$ = 1.18, $\sigma^2$ = 1.39), "I would probably get depressed" ($M$ = 2.96, $SD$ = 1.36, $\sigma^2$ = 1.85), and "I would be very disappointed" ($M$ = 2.245, $SD$ = 1.31, $\sigma^2$ = 1.71). The overall academic resilience subscale scores reflected this same trend, with the mean participant only scoring 59.5% of the total academic resilience points available in the negative affect and emotional response subscale, far lower than the mean percentages for perseverance (76.2%) and help seeking (73.5%).

Overall, all five of the research hypotheses were supported by the data. The correlations between hope and academic resilience were the largest. This was followed by the relationship between social support and hope. Both correlations were larger than the negative correlation between adversity and hope. For hypotheses four and five, a greater percentage of variability in academic resilience for individuals facing adversity could be statistically explained by hope levels than the percentage of variability in hope levels could be explained by levels of perceived social support.

In Chapter 5, I look at what these results mean in a broader applied context. Recommendations for application in the field of education are discussed, as well as applications for mental health and family supports. Implications for future research studies are also discussed.

# Chapter 5: Discussion, Implications, and Recommendations

The previous chapter discussed the presentation and analysis of the data for each of the research hypotheses. The analyses supported each of the research hypotheses and affirmed the relationships between adversity, hope, social support, and academic resilience. This chapter looks at these statistical findings and what they mean for the study and application of these topics moving forward. The findings of this study are compared to the results of previous similar studies. Additionally, findings for each of the research questions investigated in the study are discussed, as are the application of these findings in the areas of education, mental health, and family supports. A review of the limitations of the current study and recommendations for future research studies on the topic are also included.

## Summary of the Study

This study set out to examine the relationship between adversity, hope, resilience, and social supports among emerging Appalachian adults. While some existing research has supported a relationship between these areas, the findings have been limited only to select populations (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Hellman, Munoz et al., 2018; Munoz, Pearson et al., 2018; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018). Calls to expand research to more diverse samples (Munoz, Pearson et al., 2018), along with an overall scarcity of research regarding Appalachia (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011) served as the primary rationale for exploring the topic and context.

## Discussion of Findings

The discussion of findings begins with a comparison of the results of the current study to data from other sample populations. The results of the current research are discussed in the

context of prior related studies. Additionally, each research question from the present study is discussed considering the current research findings.

### *Comparison to Other Samples*

The participants in this study experienced adversity at an elevated rate in comparison to other groups, with 65.5% (*n* = 131) reporting at least one ACE and 22.5% (*n* = 45) reporting exposure to four or more ACEs. According to the Centers for Disease Control and Prevention (2020), 61% of adults surveyed across 25 states reported exposure to at least one ACE, with almost 17% exposed to four or more ACEs (Centers for Disease Control and Prevention [CDC], 2020). These CDC reported numbers are higher than the results of the initial ACE study of Kaiser Permanente patients, which found 52.1% of respondents experiencing at least one ACE, and 6.2% experiencing four or more ACEs (Felitti et al., 1998).

When looking at participant hope levels, the mean hope level of 24.9 (*SD* = 3.89; $\sigma^2$ = 15.19) was slightly above the average hope score of other groups. Numerous studies using the four-point version of Snyder et al.'s (1991) Adult Hope Scale have found average hope scores for college and noncollege people to be approximately 24, though these averages decline significantly among adults seeking psychological help and those who are inpatients at psychiatric hospitals (Lopez et al., 2000; Santilli et al., 2014; Snyder, 1995).

From an academic resilience standpoint, participants in the current study had a mean total academic resilience score of 107.1 (*SD* = 18.02; $\sigma^2$ = 324.8). For the academic resilience subscales, the means were as follows: perseverance, *M* = 53.32, *SD* =7.89, $\sigma^2$ = 62.31; reflecting and help seeking, *M* = 33.07, *SD* = 7.04, $\sigma^2$ = 49.50; and negative affect and emotional response, *M* = 20.71, *SD* = 6.21, $\sigma^2$ =38.56. The recorded participant levels of academic resilience were lower than the mean score recorded in Cassidy's (2016) initial study, which focused on a sample

population of British undergraduate students and found a mean total academic resilience score of 115.61 for participants who completed the original AR-30 instrument. The mean subscale scores in this initial study were also higher than those in the current study, with Cassidy's (2016) sample recording a mean perseverance score of 59.17, a mean reflecting and help seeking score of 35.41, and a mean negative affect and emotional response score of 21.04.

Mean levels of perceived social support from the current sample (total MSPSS, *M* = 64.66, *SD* =14.7, $\sigma^2$ =216.1; MSPSS significant other, *M* = 23.41, *SD* = 6.08, $\sigma^2$ = 40; MSPSS family, *M* = 19.56, *SD* = 7.29, $\sigma^2$ = 53.17; MSPSS friends, *M* = 21.69, *SD* = 5.58, $\sigma^2$ =34.26) were comparable overall than a sample of 549 first-year university students in Canada (Clara et al., 2003; total MSPSS, *M* = 65.1, *SD* =14.06; MSPSS significant other, *M* = 22.25, *SD* = 6.18; MSPSS family, *M* = 20.69, *SD* = 6.18; MSPSS friends, *M* = 22.16, *SD* = 5.16). The current sample did report slightly higher levels of perceived support from a significant other and lower perceived support from friends and family. The current study was also comparable overall to a sample of Australian adults recruited from the national population. Most of these participants had completed university, college, or postgraduate studies (Gallagher & Vella-Brodrick, 2008; MSPSS significant other, *M* = 22.79, *SD* = 6.38; MSPSS family, *M* = 21.19, *SD* = 6.33; MSPSS friends, *M* = 22.34, *SD* = 5.18). The current sample had slightly higher levels of perceived support from a significant other and lower levels of support from friends and family. It is worth noting that levels of perceived social support were found to be significantly lower in a sample of 156 individuals seeking psychiatric outpatient care (Clara et al., 2003; total MSPSS, *M* = 51.76, *SD* = 17.61; MSPSS significant other, *M* = 18.74, *SD* = 7.45; MSPSS family, *M* = 16.21, *SD* = 7.16; MSPSS friends, *M* = 16.81, *SD* = 6.93).

In consideration of these comparisons to other studies, the sample for the current study appears to have experienced childhood adversity at a higher than the average rate. Despite elevated adversity levels, the sample group had higher than average hope levels. Additionally, average levels of reported academic resilience for the current sample were slightly lower than another group of undergraduate college students. Last, levels of perceived social support for the current sample were in line with those recorded by other cohort groups.

**Q1. What is the Relationship Between Adversities as Measured by the Adverse Childhood Experiences (ACE) Scale and Hope as Measured by the Dispositional Hope Scale?**

The first research question in this study evaluated the possible relationship between ACEs and levels of hope. Several previous studies in other populations found evidence that trauma reduces hope (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). Based upon these prior samples, it was hypothesized that there would also be a negative relationship among emerging Appalachian adults.

The current results support and reinforce these findings among Appalachian emerging adults, with negative correlations evident between ACEs and total hope ($r$ = -.357, $p$ < .01), as well as between ACEs and both the agency ($r$ = -.363, $p$ < .01) and pathway ($r$ =-.260, $p$ < .01) hope scales. Among the current research sample, the number of ACEs experienced statistically explained 13% of the variability in total hope ($R^2$ = -.127), 13.2% of the variability in agency hope ($R^2$ = -.132), and 7% of the variability in pathway hope ($R^2$ = -.067). A similar difference in the impact of ACEs on the hope subscales was observed by Creamer et al. (2009), with ACEs having a significant negative association with agency hope but not pathway hope.

**Q2. What is the Relationship Between Hope as Measured by the Dispositional Hope Scale and Academic Resilience as Measured by the Academic Resilience Scale (ARS-30)?**

The third research question in this study set out to evaluate the relationship between levels of hope and levels of academic resilience. Prior research has pointed to hope serving as a critical supportive strength that connects resilience and well-being (Grund & Brock, 2019; Hellman, Munoz et al., 2018; Hellman, Robinson-Keilig et al., 2018; Munoz, Qunton et al., 2018; Snyder, 2002; Snyder et al., 2003; Sulimani-Aidan et al., 2018). Because of these prior findings, it was hypothesized that hope and academic resilience would also have a positive relationship among the current sample.

The current research did support this relationship, with positive correlations evident between total academic resilience and total hope ($r = .57$, $p < .01$), as well as between total academic resilience and both agency ($r = .55$, $p < .01$) and pathway ($r = .45$, $p < .01$) hope levels. Total hope levels statistically explained 33% of the variation in total academic resilience score ($R^2 = .33$). Additionally, agency hope statistically explained 31% of the variation in academic resilience $R^2 = .30$), while pathway hope explained 20% of this variation ($R^2 = .20$).

**Q3. How Does Adversity as Measured by the Adverse Childhood Experiences (ACE) Scale and Hope as Measured by the Dispositional Hope Scale Predict Academic Resilience as Measured by the Academic Resilience Scale (ARS-30)?**

Research question number three evaluated how ACEs and hope levels might predict levels of academic resilience. As observed in Figure 2 and Table 3, and as noted in the discussion of the relationship between ACEs and hope, the current sample reflected a clear and statistically significant negative relationship between ACEs experienced and hope levels. Figure 2 and Table 4 also show a clear and statistically significant negative relationship between ACEs

and academic resilience. However, there is also a clear and statistically significant relationship between hope levels and academic resilience, as noted in Figure 2 and Table 4.

This is consistent with previous studies, which have noted that hope can mitigate the impacts of trauma on the brain (Counts et al., 2017; Munoz et al., 2019), helping individuals maintain goal pursuits to overcome challenges (Snyder et al., 1991). Individuals with higher hope levels have been found to be less likely to have PTSD or high anxiety (Munoz, Pearson et al., 2018) and to have higher levels of academic success (Counts et al., 2017).

Like what was seen in the previous studies, the analysis conducted in the current study pointed to hope playing a statistically significant role in the relationship between ACEs and academic resilience. This role was evidenced across total hope, agency hope, and pathway hope scores, although total hope and agency hope both played stronger roles in this interaction than did pathway hope levels. Hope levels amplified levels of academic resilience in the face of adversity, playing a mediating role between the two. While ACEs still had a negative impact on academic resilience, 38% of the academic resilience level of participants was managed through their total hope levels.

**Q4. How Does Perceived Social Support as Measured by the Multidimensional Scale of Perceived Social Support (MSPSS) and the Multifactoral Assessment of Perceived Social Support (MAPSS) Short Form Interact With Hope to Predict Academic Resilience Among Emerging Adults in Appalachia?**

The fourth research question in the study looked at how number of ACEs and perceived social support levels might predict levels of hope, which in turn would predict the level of academic resilience. Figure 2 illustrates a clear and statistically significant negative relationship between the number of ACEs and total perceived social support as measured by both the MSPSS

and MAPSS scales. This negative link is also evident for the MSPSS significant other and family subscales and is particularly strong for perceptions of family support ($r$ = -.577, $p$ < .01). Additionally, as seen in Figure 2 and Table 10, there is a clear and statistically significant positive link between perceived social support and hope levels. This link is evident when analyzing both the overall MSPSS and MAPSS scales, as well as across all three MSPSS subscales. Figure 2 and Table 4 also show a clear and statistically significant negative relationship between ACEs and academic resilience.

These results are consistent with the existing body of research, which has reflected significant interactions between life events and levels of perceived social support (Wethington & Kessler, 1986). The most influential variable in hope has previously been found to be social support (Sahranc et al., 2017), with research showing that supportive factors can help high-risk individuals find meaning, cope with stress, and develop a sense of control (Demaray & Malecki, 2002; Shonkoff & Gardner, 2011; Werner, 1989). Additionally, it has been observed that the greater the supports available, the better the chance adversity will be mitigated, with higher levels of adversity requiring higher levels of support (Werner, 1989).

The analysis in the current study supported these same relationships and interactions, with perceived social supports as measured by the MSPSS playing a significant role in the relationship between number of ACEs and level of hope. This interaction was evident for total hope and for both agency and pathway hope levels, although the interaction was much stronger for total and agency hope levels than pathway levels. Adverse childhood experiences still negatively impacted hope levels even when high levels of perceived social support are present, but this relationship is significantly mediated by perceived social support, with 39% of total hope managed through the perceived social support level. Even though academic resilience levels

have also shown to be impacted by ACEs, the positive link between hope and academic resilience that has been established, along with the positive link between perceived social support and hope, indicates that individuals with higher social support levels can be expected to have higher academic resilience levels.

**Limitations**

While thorough and comprehensive, the current study has several elements that have emerged as possible limitations. These limitations are discussed in the following section.

Due to limited resources, the research was limited to a sample of 200 emerging Appalachian adults. A larger sample size was not pursued because of the time and resource commitment that would have been required to pursue additional participants. As a result of the questions not being marked as required, the sample size was further limited by a high number of respondents who began the survey but did not complete all items.

While 200 respondents are beyond the minimum number needed to conduct the study, it is still only a very small representation of Appalachia and may not reflect the overall population. Additionally, the likelihood of selection effect must be taken into consideration. The sample was not randomly drawn but rather was developed using targeted recruitment. This makes it likely that some groups of Appalachian people may have been unintentionally excluded.

The fact that research participation was voluntary and based largely upon social media advertising and the use of proxy recruiters further increases the possibility that potential respondents may have been unaware of the study or been aware of the study and opted not to participate. This limitation is particularly true for individuals that are disconnected from technology resources. Paper versions of the survey were made available, but none of the participants who submitted their responses did so via a paper survey. It is possible that the same

individuals that were unwilling or unable to access the electronic survey may have further reinforced the negative impact that ACEs have on hope, academic resilience, and perceived social support.

It is also a potential limitation that individuals who experienced a significant number of ACEs may have opted out of the study due to a desire not to revisit these past traumas. Participants declining for this reason would prevent further analysis of how ACEs interact with hope, academic resilience, and perceived social support.

While all participants were from the greater Appalachian region, 77.5% ($n$ = 155) identified specifically with the Appalachian Coalfields. The groups were analyzed together, and it is possible that respondents from the Coalfields and respondents from elsewhere in Appalachia could have had statistically different responses. Because the study focused only on individuals from Appalachia, it is also a limitation that the data may not be representative of individuals from other regions.

From an age standpoint, given that the study focused only on emerging adults, the results may not apply to individuals outside the 18–29 age range. Further complicating this limitation is the reality that while emerging adulthood is generally defined as the 18–29 age range, it is not a concrete age range but rather a phase of life (Arnett, 2000). Some participants may have already moved from emerging adulthood and into young adulthood. The same limitation is apparent in generalizing results to others within the 18–29 age range who were not part of the current study.

Another limitation comes in the cross-sectional nature of the study. Responses are reflective of the hope levels, perceptions of social support, and academic resilience that respondents reported during one snapshot in time. Because of this, the study is unable to evaluate

how levels of hope, perceived social supports, and academic resilience might change over the course of time.

Additionally, a lack of demographic data collection regarding the respondents' education level serves as a potential limitation. Having this type of data would allow for comparisons to be made between education level and academic resilience level.

Further limiting the study in terms of comparing it to other studies using the same survey instruments is the existence of multiple versions of both the ACE inventory and Adult Hope Scale. This study utilizes the original version of the hope scale, which scores items on a four-point Likert scale. However, a second version of the scale utilizes the same questions scored on an eight-point scale (Lopez et al., 2000). Thus, total hope scores, along with pathway and agency hope scores using the four-point version, are not directly comparable to the results of studies using the eight-point scale. In much the same fashion, the ACE inventory has been modified and adapted several times (Finkelhor et al., 2012; Warne et al., 2017). This study utilized the initial ACE inventory developed by Felitti et al. (1998) and is not directly comparable to the results from other versions of the ACE scale.

**Implications**

The findings of this study have largely aligned with existing research on similar topics. These results have specific implications for various contexts, including the Appalachian region, the fields of K-12 and higher education, and the realm of mental health resources and supports. This section will review these implications considering both the current study and prior research.

Participants in this study experienced ACEs at an elevated rate in comparison to the general population. This is consistent with other findings that Appalachian youth are particularly impacted by ACEs (Banyard et al., 2017; Hardaway et al., 2012; Smokowski et al., 2013).

Individuals in rural areas are more likely to experience parental divorce or separation and more likely to experience economic hardships, with Appalachia's household income only 80% of the national average (Crouch et al., 2019).

This study reinforces the reality that exposure to ACEs has a detrimental impact that is both significant and lifelong. This reality has been documented repeatedly in research related to ACEs (Bright, 2018; Crouch et al., 2019; Felitti et al., 1998, Norman et al., 2012; Shonkoff & Gardner, 2011; Southwick et al., 2014).

In the current research sample, exposure to ACEs reduced hope, resilience, and perceived social support. This is consistent with prior findings that trauma reduces hope (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003).

The impact of this trauma can lead to psychological, cognitive, behavioral, and physiological setbacks (Baxter et al., 2017; Grund & Brock, 2019; Munoz, Pearson et al., 2018; Snyder, 2002; Snyder et al., 2003). These setbacks can include self-doubt, depression, interpersonal struggles, anxiety, and suicide (Munoz, Pearson et al., 2018; Rasmussen et al., 2018; Snyder, 2002; Snyder et al., 2003).

Mental health is another area of concern. Exposure to ACEs can lead to poor mental health outcomes (Bright, 2018). Appalachians have higher rates of mental health problems than the national population, including suicide rates significantly higher than the national rates (Elder & Robinson, 2018). Much of this exposure is cyclical in nature, with adults struggling to maintain positive supportive networks, adopt unhealthy lifestyles as coping mechanisms, and expose the new generation to the same ACEs and toxic stress (Shonkoff & Gardner, 2011).

Among the current research sample, with 39% ($n$ = 78) expressing that they lived with a household member who was depressed, struggled with mental illness, or attempted suicide, it is highly likely that these mental health struggles will become part of this cycle of ACEs. Responses to the survey items seem to support the prevalence of mental health concerns, with respondents displaying the least amount of academic resilience in the domain of negative affect and emotional response. Further complicating these struggles is a lack of perceived ability to turn to family members for mental health support, with the lowest MSPSS mean scores from the items "I get the emotional help and support I need from my family" and "I can talk about my problems with my family."

Without intervention, it is likely that many of the participants in this study who report exposure to ACEs will face a life of difficulties, including increased likelihood of smoking, obesity, eating disorders, high-risk sexual behavior, lack of physical activity, depression, the use of illicit drugs, and suicide attempts (Felitti et al., 1998; Norman et al., 2012; Shonkoff & Gardner, 2011; Southwick et al., 2014). It can be expected that these individuals will face chronic stress-related diseases and have higher rates of morbidity and mortality later in life (Felitti et al., 1998; Shonkoff & Gardner, 2011). From a generational standpoint, it is likely that the families of these individuals will see disruptions as a result of unemployment, forced mobility, persistent poverty, crime and incarceration, and homelessness (Shonkoff & Gardner, 2011). The unfortunate and harsh reality is that if something is not done, another generation of Appalachian youth will be exposed to these same ACEs.

However, the implications are not all doom and gloom. As Werner (1989) so powerfully observed, "even in the most discordant and impoverished homes, and beset by physical handicaps, some children appear to develop stable and healthy personalities, and display a

remarkable degree of resilience in the face of life's adversities" (p. 72). The findings of this study offer a window into what Werner (1989) described as the challenge of the future, which is discovering how protective factors are linked together over time to foster an escape from adversity.

Specifically, these current findings reflect that higher hope respondents are more likely to display academic resilience in the face of adversity. They also reflect that individuals who have elevated perceptions of the social support available to them are more likely to display this critical increased hope. These implications align with what has been found previously, which is that protective factors can mitigate adversity (Werner, 1989).

Thus, while the negative implications of this study are quite clear and quite significant, they are not the most important. The most important implication is that the negative outcomes associated with ACEs can be mitigated, and the cycle of adversity can be stopped.

## Recommendations

In this section, I look at several recommendations that emerge as a result of both the current study and a thorough review of existing literature on the topics of childhood adversity, hope, academic resilience, and perceived social support. I begin by looking at recommendations for practical application for several fields. I also look at recommendations for additional research to be conducted in the future.

### *Recommendations for Practical Application*

The first recommendation for practical application comes in the area of available social supports. The current research found that the total level of perceived social support available, as measured by both the MSPSS and the MAPSS-SF, had a strong and positive significant correlation with the overall level of academic resilience. Prior research has also shown this as a

significant role, noting that these supports help high-risk kids find meaning and help them believe they have control over their life (Shonkoff & Gardner, 2011; Werner, 1989). Increased supports have shown to produce a greater likelihood of brain development, along with fostering strong physical and mental health (Shonkoff & Gardner, 2011). Children who perceive that they are supported have a greater chance of thriving and becoming a healthy adult (Shonkoff & Gardner, 2011).

Perceived support from a family member or trusted adult has emerged as a critical area. This is evidenced in the current study, with perceived support from family having the strongest correlation with resilience and in existing research (Ali & Saunders, 2006). Numerous studies have supported that a lasting positive relationship with a trusted adult can be a very powerful source of social support (Arincorayan et al., 2017; Baxter et al., 2017; Fry-Geier & Hellman, 2017; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018; Werner, 1989). These same positive outcomes are also evident when these relationships come from nonfamilial sources such as a coach, religious leader, teacher, or therapeutic support (Arincorayan et al., 2017; Banyard et al., 2017). Additionally, strong mental health supports and counseling supports are critical to boosting perceptions of support (El-Amin et al., 2018; Irwin et al., 2012). As a result of all of this, it is recommended that schools and other community organizations take steps to ensure these sources of social support are nurtured.

Fostering increased family and school connections and parent participation in the educational process (Semke & Sheridan, 2011) is another key area that should be emphasized. This call to foster these connections is not limited only to those working in a K-12 context, as there is a great need in Appalachia for these supports to be continued at the postsecondary level, especially considering the fact that many adult caregivers in the region are not familiar with the

college exploration process and are unable to serve as an academic role model (Ali & Saunders, 2006, 2009).

While taking steps to ensure and increase available social supports is of critical importance, if communities and their leaders are to truly turn the tide against the cycle of adversity, this recommendation in and of itself is insufficient. Even with exceptional levels of perceived social support fostering high hope levels that lead to a high degree of academic resilience, the fact is that the mere presence of ACEs still negatively impacts all of these. While social supports mediate this negative impact, they do not eliminate it.

Thus, along with increasing social supports, it is recommended that school and community entities take steps to reduce the prevalence of ACEs. The power of the cycle of adversity is that as a result of experiencing adversities, many adults find themselves struggling to maintain positive support networks and adopt unhealthy lifestyles to try to cope with their childhood trauma (Shonkoff & Gardner, 2011). All of this leads to the increased likelihood that they will pass these burdens on to their children (Shonkoff & Gardner, 2011), with many ACEs occurring at the hands of a parent or guardian (Norman et al., 2012).

If our communities and their leaders are to make any headway in reducing childhood trauma, they cannot allow this to continue to happen. Thus, an additional recommendation of this study would be for community and mental health organizations to ensure that adults who are victims of childhood trauma have appropriate access to social and mental health supports and programs in order to help mitigate the effects of their own trauma. There should also be steps taken to provide adults information and training about how to protect their children from experiencing the same traumas that they have had to live through.

### *Recommendations for Future Research*

The results of this study add to the limited research foundation that focuses on rural Appalachia. However, the extent of academic research conducted in this context is still quite limited (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Semke & Sheridan, 2011), especially when compared to the extensive research that has been conducted with a focus on more urban settings (Schafft, 2016). Additionally, the research base focused on relationships between adverse childhood events, hope, social supports, and resilience remains limited to certain populations and contexts (Baxter et al., 2017; Fry-Geier & Hellman, 2017; Hellman, Robinson-Keilig et al., 2018; Munoz, Pearson et al., 2018; Munoz, Qunton et al., 2018; Sulimani-Aidan et al., 2018). While each study such as this one helps to address this scarcity of research, the reality of resource limitations means that there remains much to study.

The first recommendation for future research would be to focus on these same relationships between ACEs, hope, perceived social support, and academic resilience but to do so with other groups throughout the Appalachian region. The current study consisted largely of those who identify specifically with the Appalachian Coalfields. Future studies could look at whether these relationships remain consistent among individuals from the other subregions within Appalachia. Along with a focus on other subregions, it would be beneficial for future studies to focus on the Appalachian Coalfields to reinforce further, or bring pause to, the relationships found in the current study.

This aligns with the second area for future research. The current study did not have the time and resources to pursue the possible differences in the number of ACEs, hope levels, academic resilience, and perceived social support among different demographic groups. Of interest would be whether those who do not identify as male or female experience adversity at a higher than normal rate and whether these same individuals report reduced levels of hope,

academic resilience, and perceived social support. Also of interest would be evaluating the levels of hope, academic resilience, and perceived social support by age among individuals with the same exposure to adversity.

The third area for further research focus would be the differences in relationships among variables when the agency and pathway hope subscales are considered. The current study found stronger negative correlations between ACEs and agency hope than between ACEs and pathway hope. Agency hope also had stronger positive correlations with overall and subscale levels of both perceived social support and academic resilience than did pathway hope. Snyder's hope theory (Snyder et al., 1991) clearly distinguishes between these two hope domains, but existing research did not appear to sufficiently evaluate whether one subscale would be more closely tied to these other variables. One study conducted by Creamer et al. (2009) observed that ACEs had a significant association with lower agency hope but not lower pathway hope. This was the only study found that discussed the difference between the two pathways, and it focused mostly on young males who had suffered injuries because of accidental trauma. Two other studies that focused on college students did note differences in the association between agency hope and pathway hope and academic resilience, with agency hope more strongly connected to academic performance than pathway hope (Buckelew et al., 2008; Chang, 1998). However, neither of these studies included information about exposure to ACEs. Future research that specifically focused on these relationships would help establish whether this difference in correlations is unique to this study and sample group or whether there is a broader significance to this finding.

Another item to address for future research would be what high and low levels of academic resilience look like in academic and career success, especially for individuals with significant adversity. The current study has established that increased perception of social

support seems to correspond to increased hope levels and that increased hope levels correspond to increased academic levels. What is less clear from this study is what academic resilience levels can be expected to translate to. Cassidy's (2016) initial study of academic resilience noted that those with high academic resilience levels could be expected to have increased academic achievement, health, and overall well-being. However, further research specific to Appalachia would be helpful in determining exactly what these outcomes look like. Thus, it would be helpful for future studies to look at the relationship between academic resilience and variables such as the highest level of educational attainment, current occupation, and current income.

Additionally, it would be beneficial for future research to look at the implications other traumas and barriers not captured by the ACE scale might have for perceived social support, hope, and academic resilience. This focus would be particularly pertinent in Appalachia, given the existence of significant educational barriers that negatively impact developmental outcomes (Hoffman et al., 2017). These barriers, such as long bus rides (Seals & Harmon, 1995), a lack of academic role models (Ali & Saunders, 2006), underqualified teachers, and high staff turnover (Irvin et al., 2012; Semke & Sheridan, 2011) are not classified as ACEs. The same is true of barriers such as parental unemployment, marrying at a young age, and pressures to take care of family instead of pursuing a personal goal (Ali & Saunders, 2006, 2009; Irvin et al., 2012; Seals & Harmon, 1995; Semke & Sheridan, 2011; Werner, 1989). Given that these additional barriers are especially likely to occur for children who already face adversity (Werner, 1989), it is important to investigate the role they might play in interacting with ACEs, as well as the negative implications they may have on perceived social support, hope, and academic resilience.

It would also be beneficial for future research to allow for narrative input by the research participants. The current study only allowed for the completion of the quantitative survey

instruments. Inclusion of qualitative response items that would allow for participants to provide a narrative response may provide additional details, particularly about the source of perceived social support or lack thereof. This information would allow future researchers to investigate with more depth the timeframe and stage of life that support was perceived and whether current levels of support perceived are less than, equal to, or greater than the support levels felt during previous life stages. This narrative information could further serve to investigate the type of social support perceived by the research participants.

A final recommendation for future research would be to conduct a path analysis that would evaluate the relationships among ACEs, perceived social supports, hope, and academic resilience. A path analysis was initially considered for this study but was not conducted because of time and other resource constraints.

**Chapter Summary**

Thirty years ago, Werner (1989) observed that "the challenge of the future is to discover how the chain of direct and indirect linkages between protective factors is established over time so as to foster escape from adversity for vulnerable children" (p. 81). This study has evaluated some of these links and how they can offer such an escape from adversity.

The results of the study were very clear in illustrating the negative implications of ACEs. Perceived social support levels, hope levels, and academic resilience levels all reflected statistically significant negative correlations to increased exposure to ACEs. This points to the likelihood of a very bleak reality. However, as Werner (1989) illustrated, "even in the most discordant and impoverished homes, and beset by physical handicaps, some children appear to develop stable and healthy personalities, and display a remarkable degree of resilience in the face of life's adversities" (p. 72).

The positive findings in this study shine light on what the protective factors are that might foster such an escape from adversity. Higher levels of perceived social support positively correlated to increased hope, with perceived social support serving as a mediating variable in the relationship between ACEs and hope. In turn, higher levels of hope positively correlated to increased academic resilience, with hope serving as a mediating variable in the relationship between ACEs and academic resilience.

Thus, despite the significant and lifelong implications of childhood exposure to adversity, these exposures do not have to be a life sentence. Hope is the key to overcoming these adversities in order to become and remain resilient, and this hope can be harvested whenever it is perceived that strong social supports are available.

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## Appendix A: Multidimensional Scale of Perceived Social Support (MSPSS)

Developed by Zimet et al. (1988).

Circle the "1" if you Very Strongly Disagree
Circle the "2" if you Strongly Disagree
Circle the "3" if you Mildly Disagree
Circle the "4" if you are Neutral
Circle the "5" if you Mildly Agree
Circle the "6" if you Strongly Agree
Circle the "7" if you Very Strongly Agree

1. There is a special person who is around when I am in need. (Significant Other)
   1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows. (SO)
   1 2 3 4 5 6 7

3. My family really tries to help me. (Family)
   1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family. (FAM)
   1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me. (SO)
   1 2 3 4 5 6 7

6. My friends really try to help me. (Friends)
   1 2 3 4 5 6 7

7. I can count on my friends when things go wrong. (FRI)
   1 2 3 4 5 6 7

8. I can talk about my problems with my family. (FAM)
   1 2 3 4 5 6 7

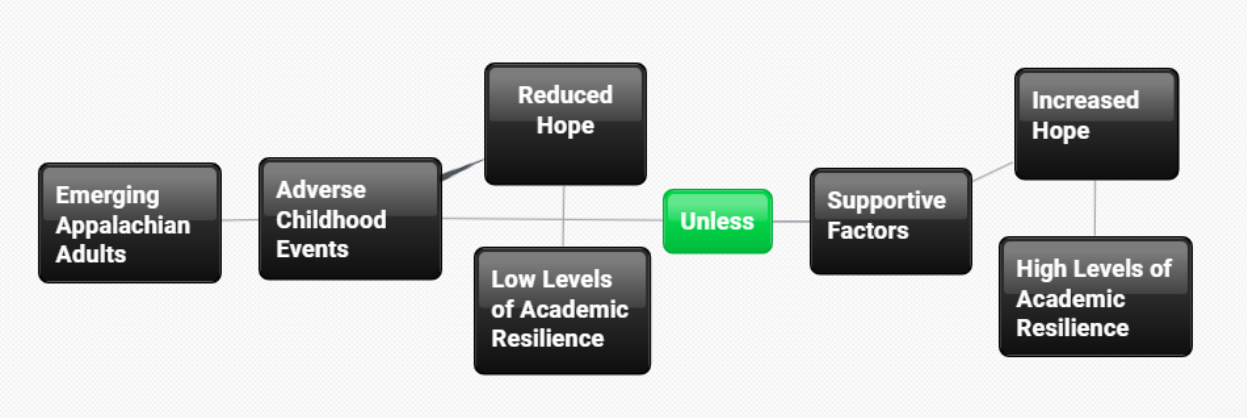
9. I have friends with whom I can share my joys and sorrows. (FRI)
   1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings. (SO)
    1 2 3 4 5 6 7

11. My family is willing to help me make decisions. (FAM)
    1 2 3 4 5 6 7

12. I can talk about my problems with my friends. (FRI)
    1 2 3 4 5 6 7

# Appendix B: Conceptual Map



## Appendix C: Adverse Childhood Experiences (ACE) Scale

As developed by Felitti et al. (1998).

While you were growing up, during the first 18 years of life:

Did a parent or other adult in the household . . . Often or very often swear at, insult, or put you down ***or*** often or very often act in a way that made you afraid that you would be physically hurt?

Did a parent or other adult in the household . . . Often or very often push, grab, shove, or slap you ***or*** often or very often hit you so hard that you had marks or were injured?

Did an adult or person at least 5 years older ever . . . Touch or fondle you in a sexual way or have you touch their body in a sexual way ***or*** attempt oral, anal, or vaginal intercourse with you or actually have oral, anal, or vaginal intercourse with you?

Did you often feel that no one in your family loved you or thought you were important or special ***or*** your family didn't look out for each other, feel close to each other, or support each other?

Did you often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you ***or*** your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Were your parents ever separated or divorced?

Was your mother (or stepmother) sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her or sometimes, often, ***or*** very often kicked, bitten, hit with a fist, or hit with something hard ***or*** ever repeatedly hit over at least a few minutes or threatened with, or hurt by, a knife or gun?

Did you ever live with anyone who was a problem drinker or alcoholic or who used street drugs?

Was a household member depressed or mentally ill or did a household member attempt suicide?

Did a household member go to prison?

## Appendix D: The Adult Trait Hope Scale

As developed by Snyder et al. (1991).

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1 = Definitely False; 2 = Mostly False; 3 = Mostly True; 4 = Definitely True

1. I can think of many ways to get out of a jam. (Pathways)
2. I energetically pursue my goals. (Agency)
3. I feel tired most of the time. (Filler)
4. There are lots of ways around any problem. (Pathways)
5. I am easily downed in an argument. (Filler)
6. I can think of many ways to get the things in life that are most important to me. (Pathways)
7. I worry about my health. (Filler)
8. Even when others get discouraged, I know I can find a way to solve the problem. (Pathways)
9. My past experiences have prepared me well for my future. (Agency)
10. I've been pretty successful in life. (Agency)
11. I usually find myself worrying about something. (Filler)
12. I meet the goals that I set for myself. (Agency)

## Appendix E: The Academic Resilience Scale (ARS-30)

Developed by Cassidy (2016). Items marked with a + have reversed scoring.

You have received your mark for a recent assignment and it is a 'fail.' The marks for two other recent assignments were also poorer than you would want as you are aiming to get as good a degree as you can because you have clear career goals in mind and don't want to disappoint your family. The feedback from the tutor for the assignment is quite critical, including reference to 'lack of understanding' and 'poor writing and expression,' but it also includes ways that the work could be improved. Similar comments were made by the tutors who marked your other two assignments.

On a five-point scale, with (1) being most likely and (5) being most unlikely, how accurately do you feel each of the following statements describes your likely reaction as a student?

(1) I would not accept the tutors' feedback (Perseverance Subscale)
(2) I would use the feedback to improve my work (Perseverance Subscale) +
(3) I would just give up (Perseverance Subscale)
(4) I would use the situation to motivate myself (Perseverance Subscale) +
(5) I would change my career plans (Perseverance Subscale) +
(6) I would probably get annoyed (Negative Affect and Emotional Response Subscale)
(7) I would begin to think my chances of success at university were poor (Negative Affect)
(8) I would see the situation as a challenge (Perseverance Subscale) +
(9) I would do my best to stop thinking negative thoughts (Perseverance Subscale) +
(10) I would see the situation as temporary (Perseverance Subscale) +
(11) I would work harder (Perseverance Subscale) +
(12) I would probably get depressed (Negative Affect)
(13) I would try to think of new solutions (Perseverance Subscale) +
(14) I would be very disappointed (Negative Affect)
(15) I would blame the tutor (Perseverance Subscale)
(16) I would keep trying (Perseverance Subscale) +
(17) I would not change my long-term goals and ambitions (Perseverance Subscale) +
(18) I would use my past successes to help motivate myself (Reflective and Adaptive Help Seeking Subscale) +
(19) I would begin to think my chances of getting the job I want were poor (Negative Affect)
(20) I would start to monitor and evaluate my achievements and effort (Reflective) +
(21) I would seek help from my tutors (Reflective) +
(22) I would give myself encouragement (Reflective) +
(23) I would stop myself from panicking (Negative Affect) +
(24) I would try different ways to study (Reflective) +
(25) I would set my own goals for achievement (Reflective) +
(26) I would seek encouragement from my family and friends (Reflective) +
(27) I would try to think more about my strengths and weaknesses to help me work better (Reflective) +
(28) I would feel like everything was ruined and was going wrong (Negative Affect) +
(29) I would start to self-impose rewards and punishments depending on my performance (Reflective) +

(30) I would look forward to showing that I can improve my grades ((Perseverance Subscale) +

## Appendix F: Multifactoral Assessment of Perceived Social Support (MAPSS) Short Form

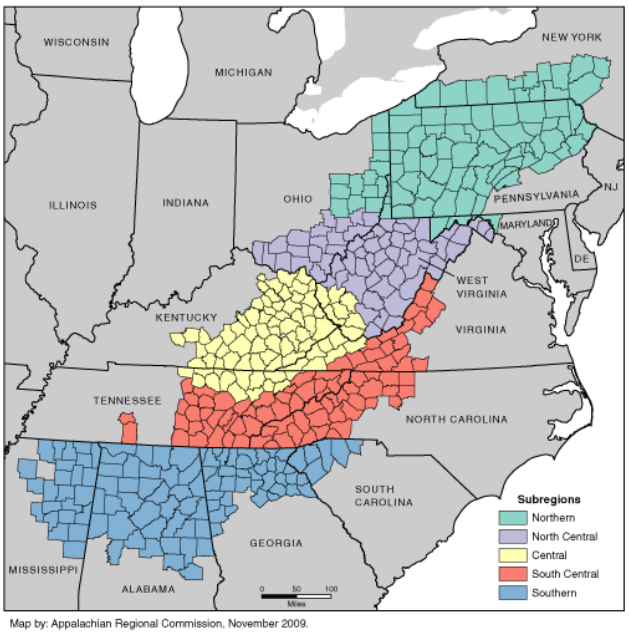
As developed by Fredericksen et al. (2019).

Please respond to the following items with one of the response options:

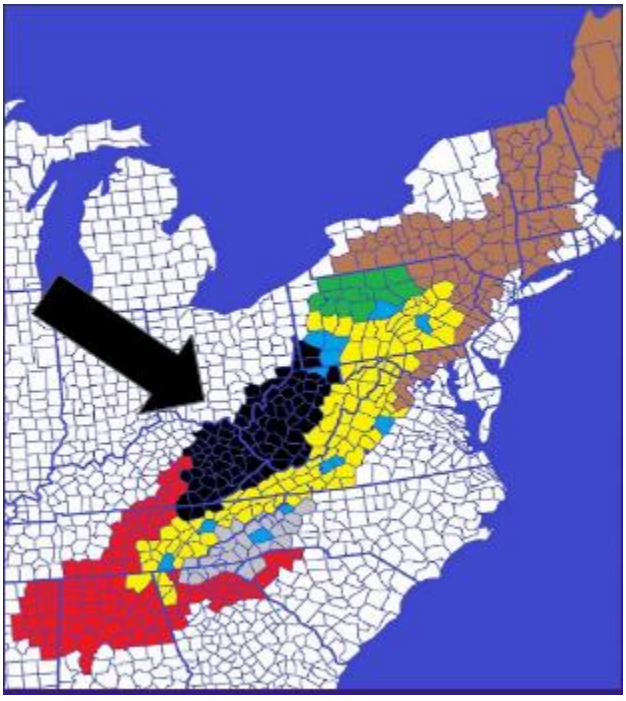
"not enough"
"enough or more than enough"

1. How much do you feel accepted for who you are by those important to you?
2. How much do you feel that you can trust those in your personal life?
3. How much do you feel that people in your personal life support your ability to stay healthy?

## Appendix G: Map of Appalachian Regions




(Appalchian Regional Commission, 2019)



(Appalachian Magazine, 2017)

## Appendix H: Social Media Posting

I am conducting my dissertation research on the relationship among hope, resilience, and adversity in the lives of Appalachian emerging adults. I am specifically looking at participants from Southwestern Pennsylvania and West Virginia who are between the ages of 18–29. If you are willing to support me in this study it will be a great help in expanding the research base regarding the Appalachian region. You can help by sharing this social media post with others in your network who might be interested in participating in the study and by participating in the study if you meet the participant requirements. Please feel free to contact me xxx-xxx-xxxx if you would like to participate in this study or if you have additional questions. If you are eligible to participate in the study and would like to proceed at this time, you can access the survey instrument via the following link [insert survey instrument]. Thank you for your help.

**Appendix I: Recruitment Materials**

**ARE YOU:**

- **From Southwestern Pennsylvania or West Virginia**
- **Between the Ages of 18 and 29**

Contact Daniel Gottron for more information:

***Scan This QR Code to Participate***

The anonymous, online questionnaire includes some questions about childhood adversity which may cause you to remember things that make you uncomfortable.

**WE WANT YOU!**

**Or Access the Survey at:**
**appalachianhope.questionpro.com**

**TO PARTICIPATE IN A RESEARCH STUDY ABOUT ADVERSE CHILDHOOD EXPERIENCES (ACEs), SOCIAL SUPPORT, HOPE, AND RESILIENCE**

## Appendix J: Communication to Proxy Recruiters

Dear [Name of Proxy Recruiter]

I am conducting my dissertation research on the relationship among hope, resilience, and adversity in the lives of Appalachian emerging adults. I am specifically looking at participants from Southwestern Pennsylvania and West Virginia who are between the ages of 18–29. It is my belief that this research has the potential to make significant contributions to the research base regarding the Appalachian region.

However, one challenge I am anticipating is being able to recruit suitable participants for the study. I know that you have many valuable relationships and connections within the Appalachian region, and I am hoping you might be interested in helping me with this research by recruiting eligible individuals to complete the research survey.

Anyone who you may end up recruiting will be able to do so in a completely confidential and anonymous fashion, as the study will not be collecting any type of personally identifiable data. Additionally, their participation is completely voluntary, and even in an individual decides to participate initially, they can discontinue participation at any time.

There are several ways in which you could help me with this recruitment. One would be to share the link to the research instrument [insert research instrument] with anyone who may be willing to participate. If you feel as if you know any individuals who may be in need of paper-based research instruments, I would be happy to send you paper packets and self-addressed stamped envelopes to return to me.

A second way you can help is to help me share and promote the recruitment information for the study by posting the recruitment materials in local businesses, community centers, post offices, etc. so that more potential participants to become aware of the study.

Should you be willing to help, or have any questions prior to making a decision about whether you would be interested in serving as a proxy recruiter, I would be more than happy to discuss the study in greater detail. Feel free to contact me via e-mail at xxxxx.

Thank you for your consideration. I greatly appreciate any help or support you may be able to provide.

Sincerely,

Daniel Gottron
xxx-xxx-xxxx

## Appendix K: Survey Instrument

Thank you for your willingness to be part of this research study. Your participation in the study is voluntary. All your responses are anonymous. Please review the below summary information about the purpose, benefits, and methods of the study. You may also review the attached document for the full consent information. Do not hesitate to ask the researcher any questions you may have. You may contact the researcher at xxx-xxx-xxxx with any questions or concerns. If you are unable to reach the researcher or wish to speak to someone other than the researcher, you may contact xxxxx at xxx-xxx-xxxx. Upon beginning, you may choose to stop your participation at any time.

**Purpose**
The purpose of the study is to examine attitudes and adverse events in the lives of Appalachian emerging adults.

**Risks and Benefits**
There are risks to taking part in this research study. Below is a list of the foreseeable risks, including the seriousness of those risks and how likely they are to occur.
While minimal and unlikely, there is some risk that the questions on one of the survey instruments may cause varying levels of emotional distress.

There are potential benefits to participating in this study. Such benefits may include increasing the knowledge and research base that exists regarding adversity, social support, hope, and resilience within the Appalachian region. While you may not receive any direct benefits, the results will help community and school leaders provide better resources and activities to the Appalachian region.

**Methods**
Participation in the research will consist of the completion of around 60 survey items that include some basic demographic information, yes and no questions, and Likert scale responses.

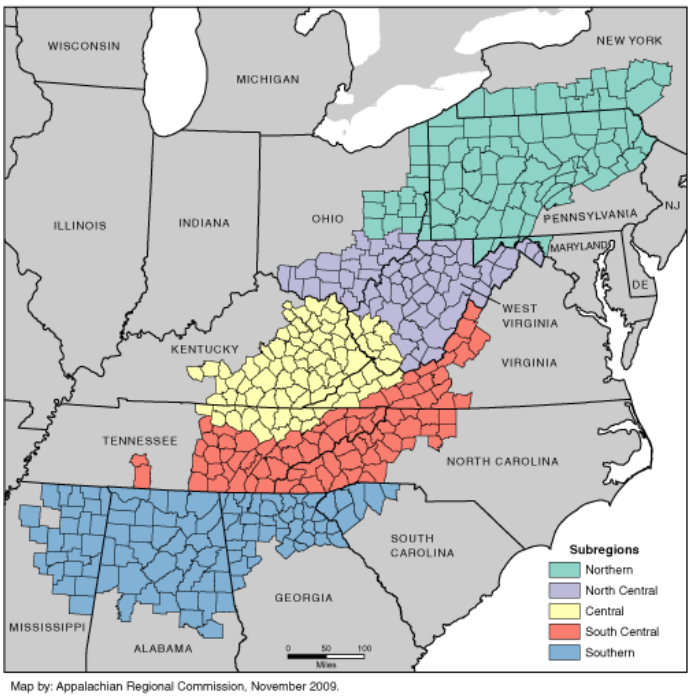
I have read and understand the information above, and I agree to participate in this research study. (Note: This is a check box that will be required for participants to move forward with the study).

I do not agree to participate. (Note: This is a check box that if selected will exit the participant from the survey).

What is your age:

18 19 20 21 22 23 24 25 26 27 28 29 30 or Greater

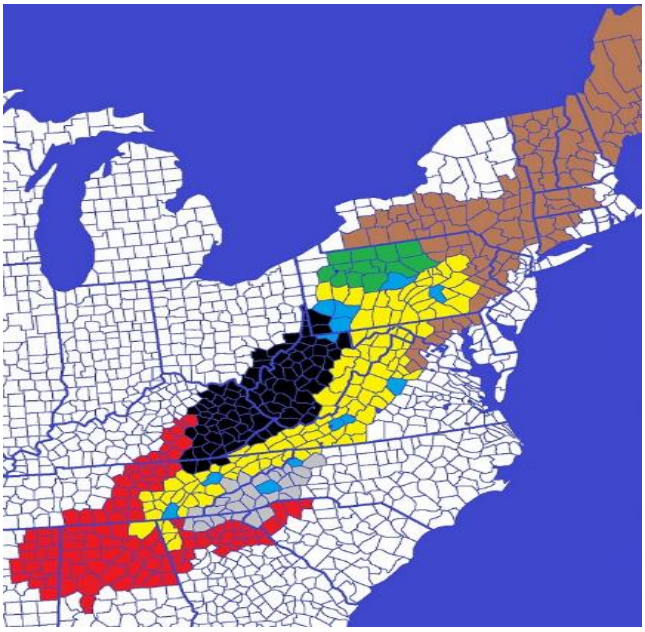
Have you spent most of your life and educational experience within the Appalachian region as indicated by the color-coded sections on the following map:



Map by: Appalachian Regional Commission, November 2009.

Yes No

Have you spent the majority of your life and educational experience within the Appalachian Coalfield counties indicated in black on the following map:



Yes No

What is your gender:

Male Female Not Listed Prefer Not To Say

Answer the following 10 questions based on while you were growing up, during the first 18 years of life.

Remember that your responses are completely anonymous. At the end of the section, please read the follow up instructions.

(Did a parent or other adult in the household . . . )
Often or very often swear at, insult, or put you down?
Often or very often act in a way that made you afraid that you would be physically hurt?
Often or very often push, grab, shove, or slap you?
Often or very often hit you so hard that you had marks or were injured?

(Did an adult or person at least 5 years older ever . . . )
Touch or fondle you in a sexual way?
Have you touch their body in a sexual way?
Attempt oral, anal, or vaginal intercourse with you?
Actually have oral, anal, or vaginal intercourse with you?

(Have you ever . . . )
Lived with anyone who was a problem drinker or alcoholic?
Lived with anyone who used street drugs?
Had a household member depressed or mentally ill?
Had a household member attempt suicide?

Was your mother (or stepmother . . . )
Sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her?
Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?
Ever repeatedly hit over at least a few minutes?
Ever threatened with, or hurt by, a knife or gun?

Did a household member go to prison?

Follow Up Instructions

If any of the questions in this section caused you emotional distress, please contact a community or church leader in order to discuss your feelings and potentially seek counseling help. If you have any recurring or severe distress as a result of the questions in this section, please call a local crisis support center. If you do not have someone to discuss your feelings with and are unsure how to get in touch with a crisis support center, you may contact the National Suicide Prevention Lifeline at 1-800-273-TALK (8255). Calling this number will connect you to a skilled, trained counselor at a crisis center in your area. This number is available 24 hours a day, 7 days a week.

Calls to this hotline do not have to be suicide related. You may also reach the national crisis text line by sending a text message with the word HOME to 741741. This crisis text line also operates 24 hours a day, 7 days a week. If you feel that you are experiencing an extreme level of distress and would like immediate emergency assistance, please dial 9-1-1.

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU.

1 = Definitely False; 2 = Mostly False; 3 = Mostly True; 4 = Definitely True

1. I can think of many ways to get out of a jam.
2. I energetically pursue my goals.
3. I feel tired most of the time.
4. There are lots of ways around any problem.
5. I am easily downed in an argument.
6. I can think of many ways to get the things in life that are most important to me.
7. I worry about my health.
8. Even when others get discouraged, I know I can find a way to solve the problem.
9. My past experiences have prepared me well for my future.
10. I've been pretty successful in life.
11. I usually find myself worrying about something.
12. I meet the goals that I set for myself.

Please answer the following 30 questions based upon the following passage. If you are not currently a student, respond as you feel you would if you were a student.

You have received your mark for a recent assignment and it is a 'fail.' The marks for two other recent assignments were also poorer than you would want as you are aiming to get as good a degree as you can because you have clear career goals in mind and don't want to disappoint your family. The feedback from the tutor for the assignment is quite critical, including reference to 'lack of understanding' and 'poor writing and expression,' but it also includes ways that the work could be improved. Similar comments were made by the tutors who marked your other two assignments.

On a five-point scale, with (1) being most likely and (5) being most unlikely, how accurately do you feel each of the following statements describes your likely reaction as a student

(1) I would not accept the tutors' feedback
(2) I would use the feedback to improve my work
(3) I would just give up
(4) I would use the situation to motivate myself
(5) I would change my career plans
(6) I would probably get annoyed
(7) I would begin to think my chances of success at university were poor
(8) I would see the situation as a challenge
(9) I would do my best to stop thinking negative thoughts

(10) I would see the situation as temporary
(11) I would work harder
(12) I would probably get depressed
(13) I would try to think of new solutions
(14) I would be very disappointed
(15) I would blame the tutor
(16) I would keep trying
(17) I would not change my long-term goals and ambitions
(18) I would use my past successes to help motivate myself
(19) I would begin to think my chances of getting the job I want were poor
(20) I would start to monitor and evaluate my achievements and effort
(21) I would seek help from my tutors
(22) I would give myself encouragement
(23) I would stop myself from panicking
(24) I would try different ways to study
(25) I would set my own goals for achievement
(26) I would seek encouragement from my family and friends
(27) I would try to think more about my strengths and weaknesses to help me work better
(28) I would feel like everything was ruined and was going wrong
(29) I would start to self-impose rewards and punishments depending on my performance
(30) I would look forward to showing that I can improve my grades

For each of the following items, mark the following responses:

"1" if you Very Strongly Disagree
"2" if you Strongly Disagree
"3" if you Mildly Disagree
"4" if you are Neutral
"5" if you Mildly Agree
"6" if you Strongly Agree
"7" if you Very Strongly Agree

1. There is a special person who is around when I am in need.
   1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.
   1 2 3 4 5 6 7

3. My family really tries to help me.
   1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.
   1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.
   1 2 3 4 5 6 7

6. My friends really try to help me.
   1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.
   1 2 3 4 5 6 7

8. I can talk about my problems with my family.
   1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows.
   1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.
    1 2 3 4 5 6 7

11. My family is willing to help me make decisions.
    1 2 3 4 5 6 7

12. I can talk about my problems with my friends.
    1 2 3 4 5 6 7

Please respond to the following items with one of the response options:

"not enough"
"enough or more than enough"

1. How much do you feel accepted for who you are by those important to you?
2. How much do you feel that you can trust those in your personal life?
3. How much do you feel that people in your personal life support your ability to stay healthy?

This concludes the survey. Thank you for your participation in this research study. Please feel free to contact the researcher at xxx-xxx-xxxx with any questions. If any of the questions in this section caused you emotional distress, please contact a community or church leader in order to discuss your feelings and potentially seek counseling help. If you have any recurring or severe distress as a result of the questions in this survey, please call a local crisis support center. If you have any recurring or severe distress as a result of the questions in this survey, please call a local crisis support center. If you do not have someone to discuss your feelings with and are unsure how to get in touch with a crisis support center, you may contact the National Suicide Prevention Lifeline at 1-800-273-TALK (8255). Calling this number will connect you to a skilled, trained counselor at a crisis center in your area. This number is available 24 hours a day, 7 days a week. Calls to this hotline do not have to be suicide related. You may also reach the national crisis text line by sending a text message with the word HOME to 741741. This crisis text line also operates 24 hours a day, 7 days a week and will connect you with a crisis counselor. If you feel

that you are experiencing an extreme level of distress and would like immediate emergency assistance, please dial 9-1-1.

## Appendix L: Informed Consent

Thank you for agreeing to participate in this study. This form includes information about the purpose of this study, the benefits of your participation, and the methods that will be used during the research.

**Purpose**

The purpose of the study is to examine attitudes and adverse events in the lives of Appalachian emerging adults.

**Benefits**

This study will provide a benefit for the people of the Appalachian region by increasing the knowledge and research base that exists regarding adversity, social support, hope, and resilience within the region. While you may not receive any direct benefits, the results will help community and school leaders provide better resources and activities to the Appalachian region.

**Methods**

Participation in the research will consist of the completion of around 60 survey items that include some basic demographic information, yes and no questions, and Likert scale responses.

**Signed Consent**

Your participation is completely voluntary, and any responses you submit as part of your participation will remain completely anonymous whenever the research findings are reported.

Please do not hesitate to ask me any questions you may have about your participation in this research study. You may contact me at xxx-xxx-xxxx.

Upon beginning the study, you may choose to stop your participation at any time.

By signing this consent form, I agree to voluntarily participate in this research study:

Research Participant Name: _____

Research Participant Signature: _____

Date of Research Participation: _____

# Appendix M: IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY
*Educating Students for Christian Service and Leadership Throughout the World*

**Office of Research and Sponsored Programs**
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

February 26, 2020

Daniel Gottron
Department of Organizational Leadership
Abilene Christian University

Dear Daniel,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "The Interaction of Adversity, Hope, Social Support, and Academic Resilience in Emerging Appalachian Adults",

(IRB# 20-017 )is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

## Appendix N: Description of Study

Dear Potential Research Participant,

My name is Daniel Gottron, and I am an EdD student at Abilene Christian University (ACU). I would love to have you participate in a dissertation research study I am conducting about the relationship among hope, resilience, and adversity in the lives of Appalachian emerging adults.

Emerging adults between the ages of 18 and 29 who have spent most of their life and educational experiences in Southwestern Pennsylvania and West Virginia are eligible to participate, which is why I am reaching out to you.

If you can participate in this study, you will be helping to contribute to a greater understanding of how hope and resilience can help individuals overcome adverse events. You will be making this valuable contribution for the cost of around one hour or less of your time.

Your choice to participate is voluntary. You may choose to skip any questions that cause you to feel stressed or anxious. You may choose to stop participating in the survey at any time.

Please do not hesitate to reach out to me if you would like to participate or if you have any questions about the research process.

Thank you for taking the time to consider participating in my study.

Sincerely,

Daniel Gottron
xxx-xxx-xxxx

## Appendix O: Letter for Institutions

Dear [insert name of institution or representative]

My name is xxxxx, and I am currently in the EdD program at Abilene Christian University (ACU). I am conducting my dissertation research on the relationship among hope, resilience, and adversity in the lives of Appalachian emerging adults. I am specifically looking at participants ranging in age from 18–29 who are from the Appalachian Coalfields of Southwestern Pennsylvania and West Virginia.

I am reaching out in the hope that you may be willing to help me with my study by allowing members of your [school/workplace/community] to participate in my research. The research process will be brief, with each participant able to complete their portion in around one hour or less during a single session.

All identifying information about the participants and institutions will not be included in the research findings.

If you are willing to support me in this study, it will be a great help in expanding the research base regarding the Appalachian region.

I would be happy to discuss any questions or concerns you might have about this study.

Thank you for your time and consideration.

Sincerely,

Daniel Gottron
xxx-xxx-xxxx

## Appendix P: Descriptive Statistics by Age

**Table P1**

*ACE Score by Age*

| Age | *n* | *M* | *SD* | $\sigma^2$ |
|---|---|---|---|---|
| 18 | 10 | 2.2 | 3.01 | 9.07 |
| 19 | 8 | 2 | 1.2 | 1.43 |
| 20 | 5 | 1.2 | 1.3 | 1.7 |
| 21 | 24 | 2.42 | 2.12 | 4.51 |
| 22 | 10 | 2.6 | 2.27 | 5.16 |
| 23 | 23 | 2.39 | 2.41 | 5.8 |
| 24 | 18 | .722 | 1.2 | 1.4 |
| 25 | 23 | 3 | 2.59 | 6.73 |
| 26 | 14 | 2 | 2 | 4 |
| 27 | 24 | 1.71 | 2.2 | 4.8 |
| 28 | 18 | 2.33 | 2.52 | 6.35 |
| 29 | 23 | 1.7 | 1.89 | 3.6 |
| All | 200 | 2.08 | 2.21 | 4.87 |

**Table P2**

*Total Hope Score by Age*

| *Age* | *n* | *M* | *SD* | $\sigma^2$ |
|---|---|---|---|---|
| 18 | 10 | 25.8 | 3.55 | 12.62 |
| 19 | 8 | 22.88 | 6.15 | 37.84 |
| 20 | 5 | 24.2 | 5.36 | 28.7 |
| 21 | 24 | 24.29 | 4.93 | 24.3 |
| 22 | 10 | 25.1 | 3.03 | 9.21 |
| 23 | 23 | 24.30 | 3.04 | 9.21 |
| 24 | 18 | 25.94 | 2.62 | 6.88 |
| 25 | 23 | 25.48 | 3.73 | 13.9 |
| 26 | 14 | 24.93 | 3.34 | 11.15 |
| 27 | 24 | 23.88 | 4.62 | 21.33 |
| 28 | 18 | 24.56 | 4.06 | 16.5 |
| 29 | 23 | 26.39 | 2.86 | 8.16 |
| All | 200 | 24.9 | 3.9 | 15.2 |

**Table P3**

*Total Academic Resilience by Age*

| *Age* | *n* | *M* | *SD* | $\sigma^2$ |
|---|---|---|---|---|
| 18 | 10 | 113.1 | 16.18 | 261.88 |
| 19 | 8 | 94.5 | 26.35 | 694.29 |
| 20 | 5 | 110.4 | 15.5 | 240.3 |
| 21 | 24 | 106.67 | 15.50 | 240.3 |
| 22 | 10 | 115.1 | 17.6 | 309.38 |
| 23 | 23 | 103 | 17.11 | 292.73 |
| 24 | 18 | 112.33 | 17.5 | 306.24 |
| 25 | 23 | 107.17 | 15.66 | 245.24 |
| 26 | 14 | 106.79 | 11.41 | 130.18 |
| 27 | 24 | 105.75 | 20.91 | 437.15 |
| 28 | 18 | 102.89 | 20.27 | 410.93 |
| 29 | 23 | 109.91 | 17.94 | 321.90 |
| All | All | 107.1 | 18.02 | 324.8 |

**Table P4**

*Total MSPSS Score By Age*

| *Age* | *n* | *M* | *SD* | $\sigma^2$ |
|---|---|---|---|---|
| 18 | 10 | 67.5 | 14.03 | 196.72 |
| 19 | 8 | 58.75 | 14.88 | 196.72 |
| 20 | 5 | 55.2 | 12.93 | 167.2 |
| 21 | 24 | 66.08 | 15.96 | 254.86 |
| 22 | 10 | 69.1 | 11.13 | 123.88 |
| 23 | 23 | 65.87 | 11.9 | 141.57 |
| 24 | 18 | 72 | 9.46 | 89.41 |
| 25 | 23 | 63.61 | 17.17 | 294.79 |
| 26 | 14 | 65 | 14.96 | 223.69 |
| 27 | 24 | 62.67 | 15.04 | 226.06 |
| 28 | 18 | 60.44 | 19.06 | 363.44 |
| 29 | 23 | 63.35 | 13.65 | 186.24 |
| All | All | 64.66 | 14.7 | 216.12 |

## Appendix Q: Descriptive Statistics for Individual Hope Scale Items

*Descriptive Statistics for Hope Scores of Research Participants (N = 200)*

| Item | Domain | *M* | *SD* | Variance |
|---|---|---|---|---|
| I can think of many ways to get out of a jam. | Pathway | 3.37 | 0.59 | 0.35 |
| I energetically pursue my goals. | Agency | 3.11 | 0.77 | 0.59 |
| There are lots of ways around any problem. | Pathway | 3.25 | 0.65 | 0.42 |
| I can think of many ways to get the things in life that are most important to me. | Pathway | 3.08 | 0.73 | 0.53 |
| Even when others get discouraged, I know I can find a way to solve the problem. | Pathway | 3.04 | 0.59 | 0.35 |
| My past experiences have prepared me well for the future. | Agency | 3.16 | 0.84 | 0.70 |
| I've been pretty successful in life. | Agency | 3.07 | 0.76 | 0.68 |
| I meet the goals that I set for myself. | Agency | 2.83 | 0.70 | 0.59 |

## Appendix R: Descriptive Statistics for Individual Academic Resilience Scale Items

*Descriptive Statistics for Academic Resilience of Research Participants (N = 200)*

| Item | Factor | *M* | *SD* | $\sigma^2$ |
|---|---|---|---|---|
| I would not accept the tutors' feedback. | Perseverance | 4.01 | 1.09 | 1.20 |
| I would use the feedback to improve my work. | Perseverance | 4.26 | 1.10 | 1.21 |
| I would just give up. | Perseverance | 4.18 | 1.065 | 1.13 |
| I would use the situation to motivate myself. | Perseverance | 3.71 | 1.11 | 1.23 |
| I would change my career plans. | Perseverance | 2.26 | 1.09 | 1.20 |
| I would probably get annoyed. | Negative Affect / Emotional Response | 2.43 | 1.18 | 1.39 |
| I would begin to think my chances of success at university were poor. | Negative Affect / Emotional Response | 3.48 | 1.24 | 1.54 |
| I would see the situation as a challenge. | Perseverance | 3.65 | 1.11 | 1.24 |
| I would do my best to stop thinking negative thoughts. | Perseverance | 3.38 | 1.21 | 1.46 |
| I would see the situation as temporary. | Perseverance | 3.63 | 1.15 | 1.33 |
| I would work harder. | Perseverance | 4.07 | 1.08 | 1.16 |
| I would probably get depressed. | Negative Affect / Emotional Response | 2.96 | 1.36 | 1.85 |
| I would try to think of new solutions. | Perseverance | 4.03 | .97 | .95 |
| I would be very disappointed. | Negative Affect / Emotional Response | 2.25 | 1.31 | 1.71 |
| I would blame the tutor. | Perseverance | 4.26 | 1.00 | 1.01 |
| I would keep trying. | Perseverance | 4.21 | .95 | .91 |
| I would not change my long-term goals and ambitions . | Perseverance | 3.79 | 1.15 | 1.32 |
| I would use my past successes to help motivate myself. | Reflective / Adaptive Help Seeking | 4.06 | 1.16 | 1.35 |
| I would begin to think my chances of getting the job I want were poor. | Negative Affect / Emotional Response | 3.17 | 1.26 | 1.58 |

| | | | | |
|---|---|---|---|---|
| I would start to monitor and evaluate my achievements and effort. | Reflective / Adaptive Help Seeking | 3.78 | 1.08 | 1.17 |
| I would seek help from my tutors. | Reflective / Adaptive Help Seeking | 3.68 | 1.34 | 1.79 |
| I would give myself encouragement. | Reflective / Adaptive Help Seeking | 3.59 | 1.22 | 1.48 |
| I would stop myself from panicking. | Negative Affect / Emotional Response | 3.15 | 1.27 | 1.62 |
| I would try different ways to study. | Reflective / Adaptive Help Seeking | 3.78 | 1.09 | 1.18 |
| I would set my own goals for achievement. | Reflective / Adaptive Help Seeking | 3.88 | 1.11 | 1.23 |
| I would seek encouragement from my family and friends. | Reflective / Adaptive Help Seeking | 3.33 | 1.50 | 2.25 |
| I would try to think more about my strengths and weaknesses to help me work better. | Reflective / Adaptive Help Seeking | 3.83 | 1.11 | 1.2 |
| I would feel like everything was ruined and was going wrong. | Negative Affect / Emotional Response | 3.29 | 1.35 | 1.81 |
| I would start to self-impose rewards and punishments depending on my performance. | Reflective / Adaptive Help Seeking | 3.15 | 1.3 | 1.61 |
| I would look forward to showing that I can improve my grades. | Perseverance | 3.92 | 1.14 | 1.29 |

## Appendix S: Descriptive Statistics for Individual MSPSS Scale Items

*Descriptive Statistics for Perceived Social Support as Measured by MSPSS (N = 200)*

| Item | Domain | *M* | *SD* |
|---|---|---|---|
| There is a special person around when I am in need. | Significant Other | 5.74 | 1.71 |
| There is a special person with whom I can share my joys and sorrows. | Significant Other | 5.89 | 1.66 |
| My family really tries to help me. | Family | 5.32 | 1.85 |
| I get the emotional help and support I need from my family. | Family | 4.65 | 2.04 |
| I have a special person who is a real source of comfort to me. | Significant Other | 5.84 | 1.71 |
| My friends really try to help me. | Friends | 5.32 | 1.49 |
| I can count on my friends when things go wrong. | Friends | 5.29 | 1.58 |
| I can talk about my problems with my family. | Family | 4.43 | 2.09 |
| I have friends with whom I can share my joys and sorrows. | Friends | 5.57 | 1.61 |
| There is a special person in my life who cares about my feelings. | Significant Other | 5.97 | 1.56 |
| My family is willing to help me make decisions. | Family | 5.17 | 1.89 |
| I can talk about my problems with my friends. | Friends | 5.51 | 1.59 |

## Appendix T: Charts and Graphs for Hypothesis 1 Assumption Testing

**Figure T1**

*Scatterplot of ACE Score and Agency Hope*

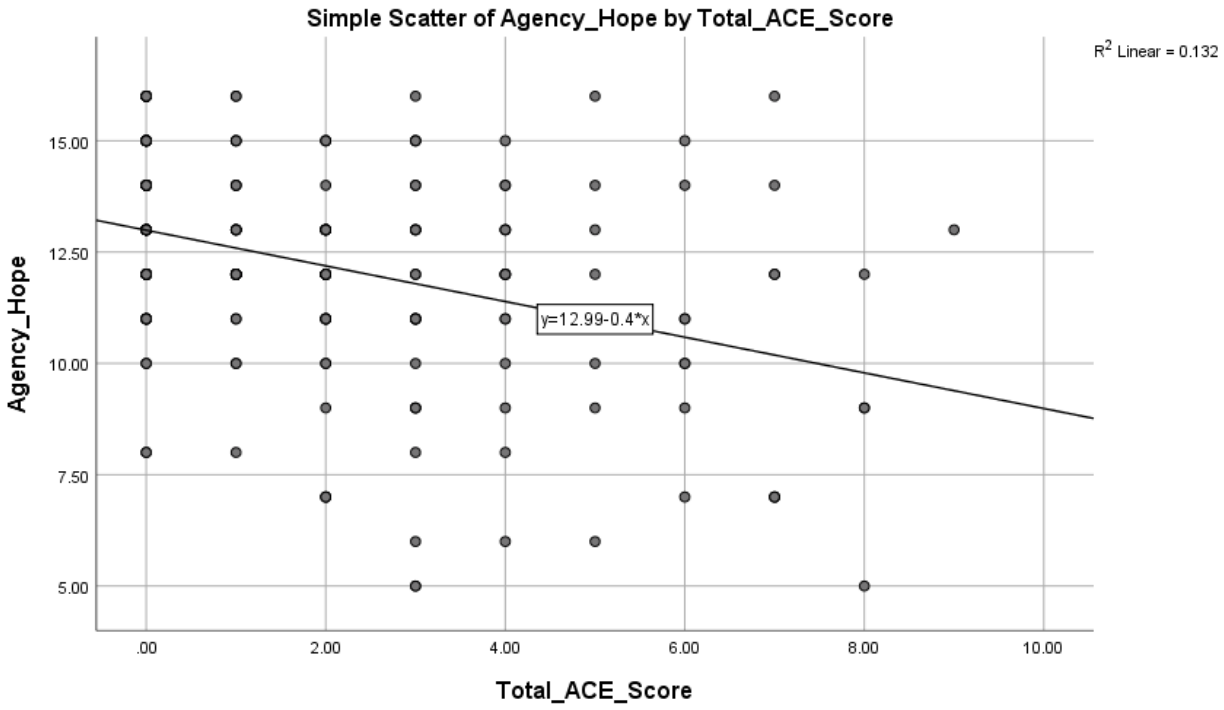
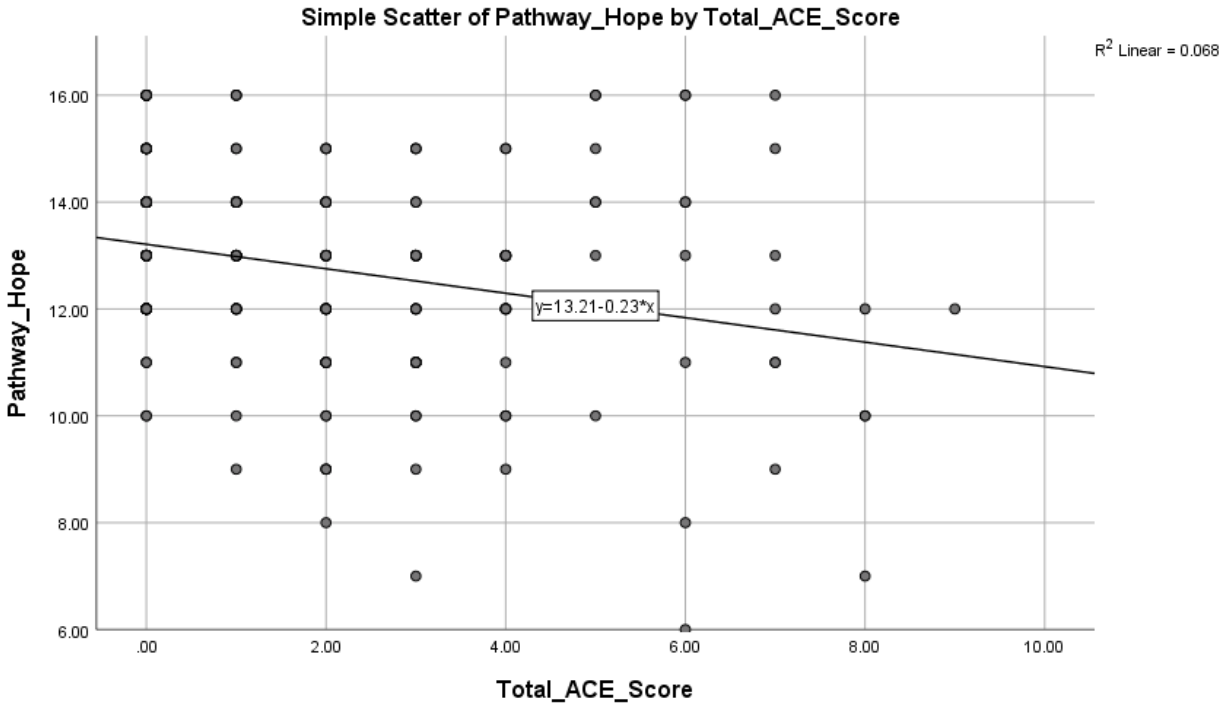


**Figure T2**

*Scatterplot of ACE Score and Pathway Hope*



## Appendix U: Charts and Graphs for Hypothesis 2 Assumption Testing

**Figure U1**

*Scatterplot of Pathway Hope and Total Perceived Social Support (MSPSS)*

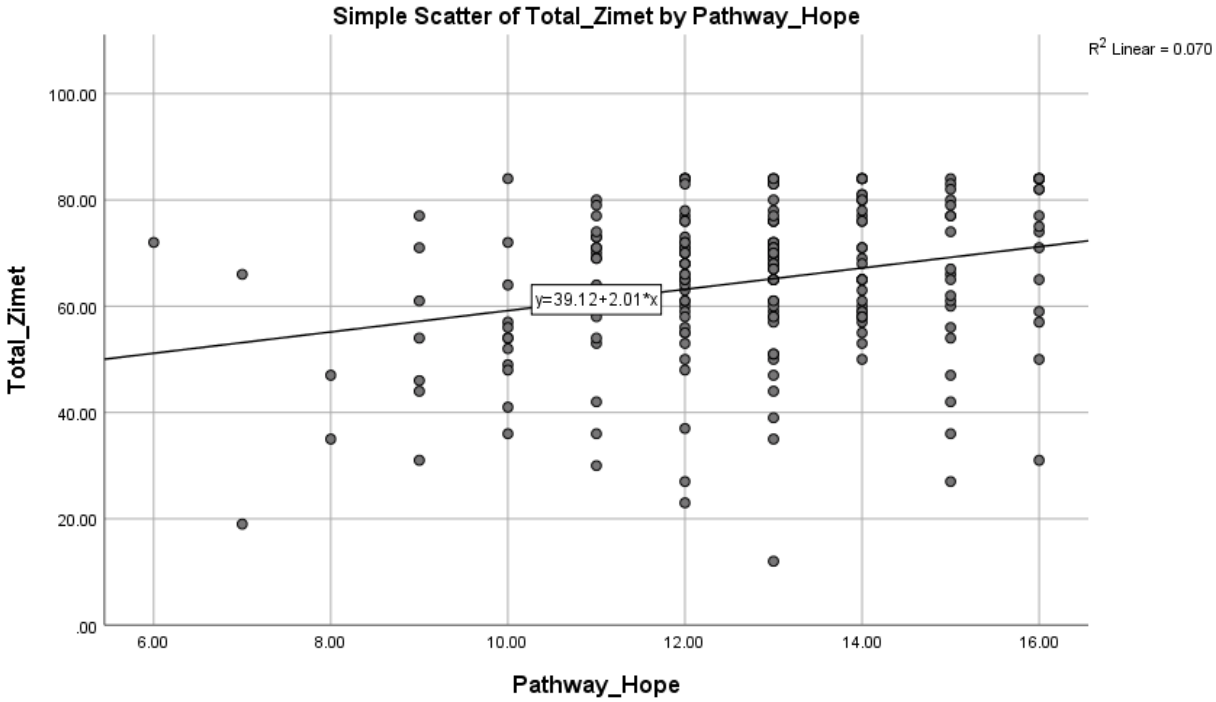


**Figure U2**

*Scatterplot of Agency Hope and Total Perceived Social Support (MSPSS)*

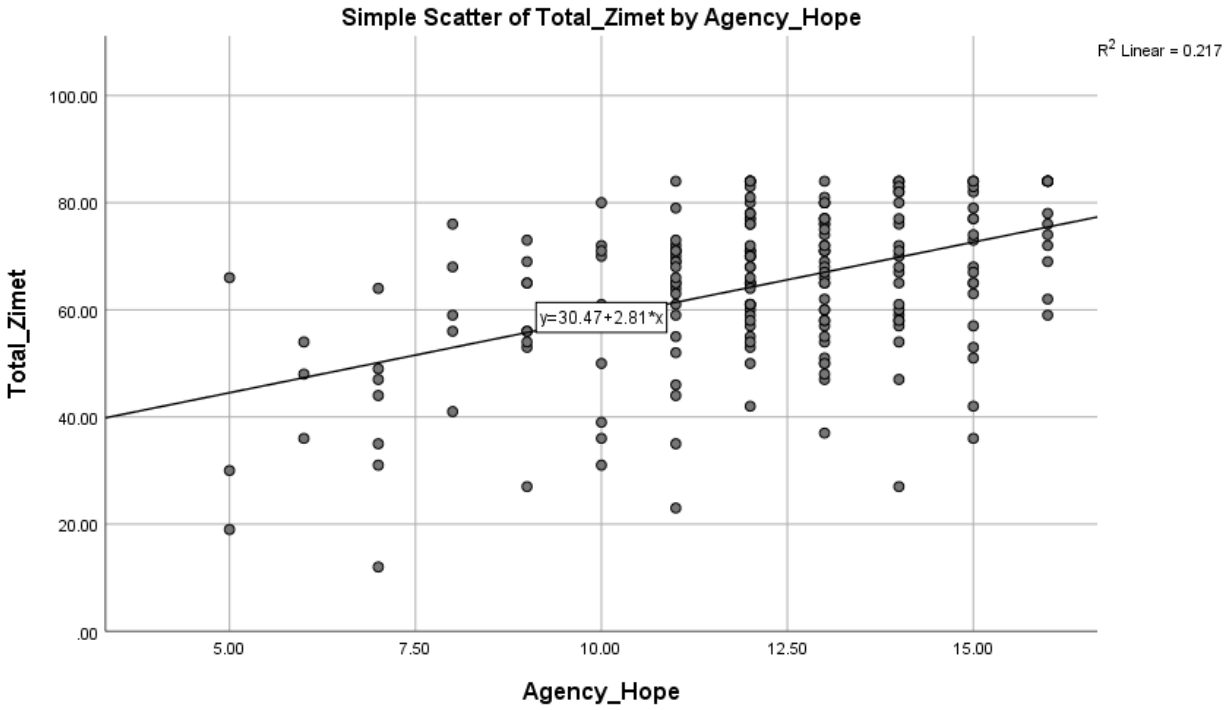


**Figure U3**

*Scatterplot of Total Hope and Total Perceived Social Support (MAPSS-SF)*

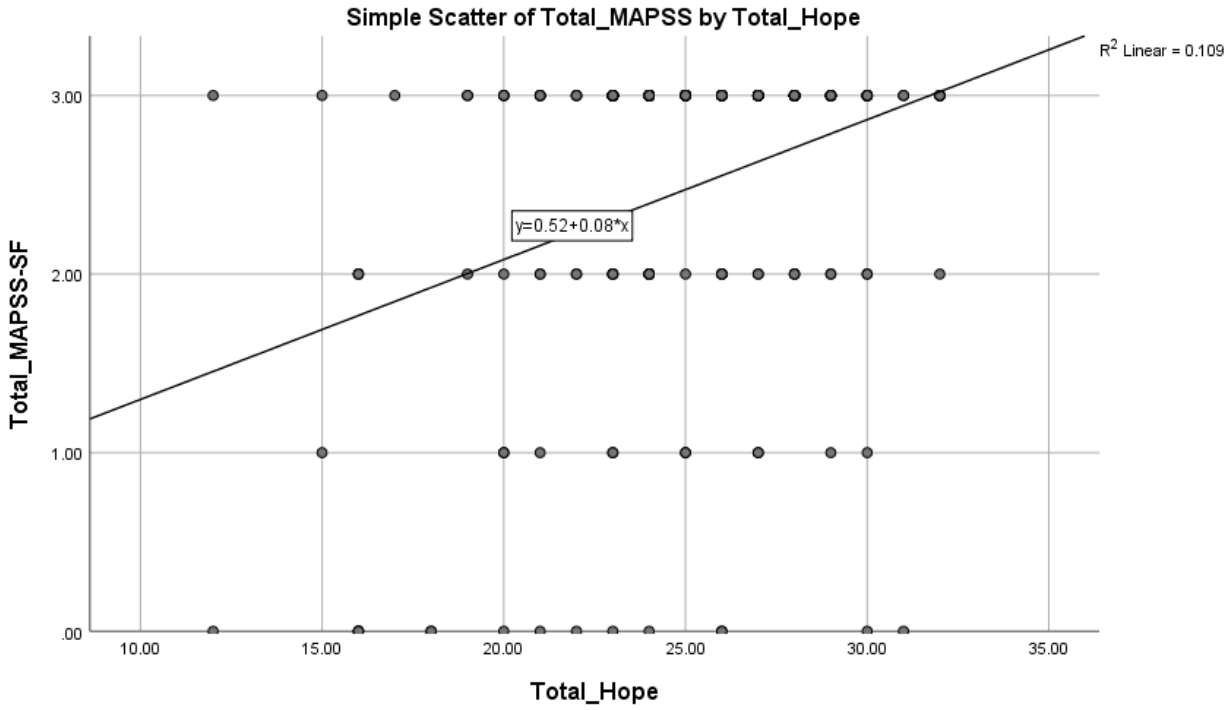


**Figure U4**

*Scatterplot of Agency Hope and Total Perceived Social Support (MAPSS-SF)*

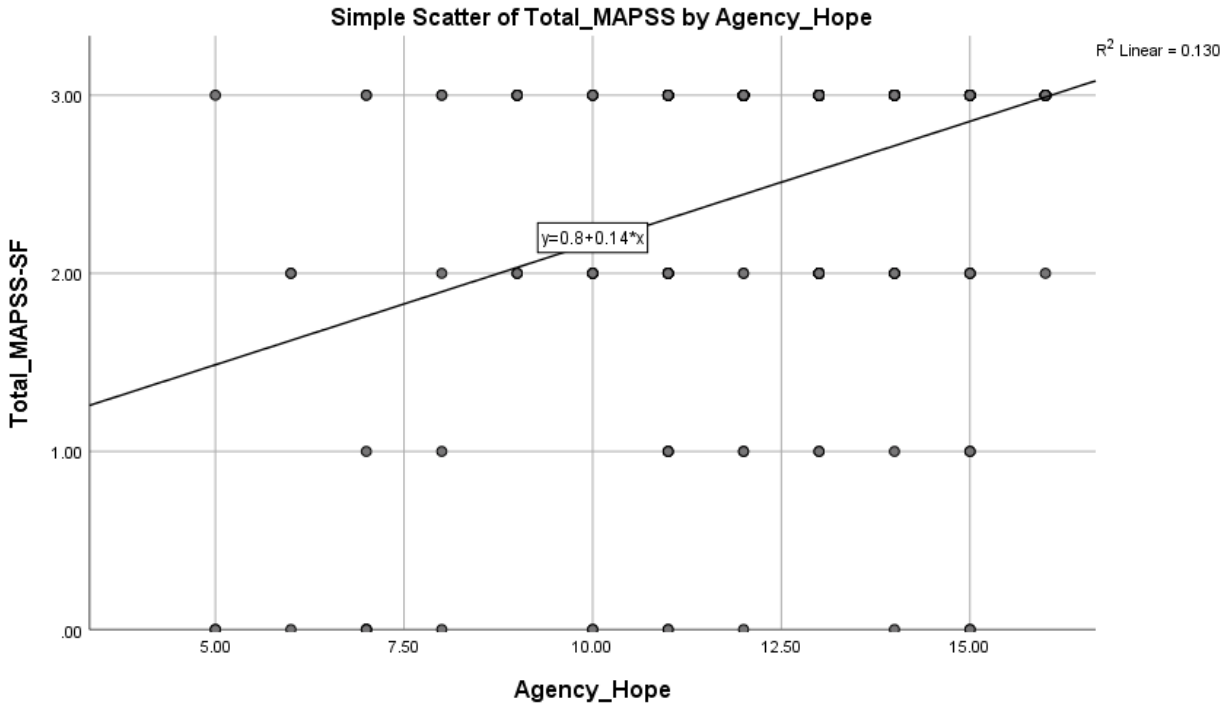


**Figure U5**

*Scatterplot of Pathway Hope and Total Perceived Social Support (MAPSS-SF)*

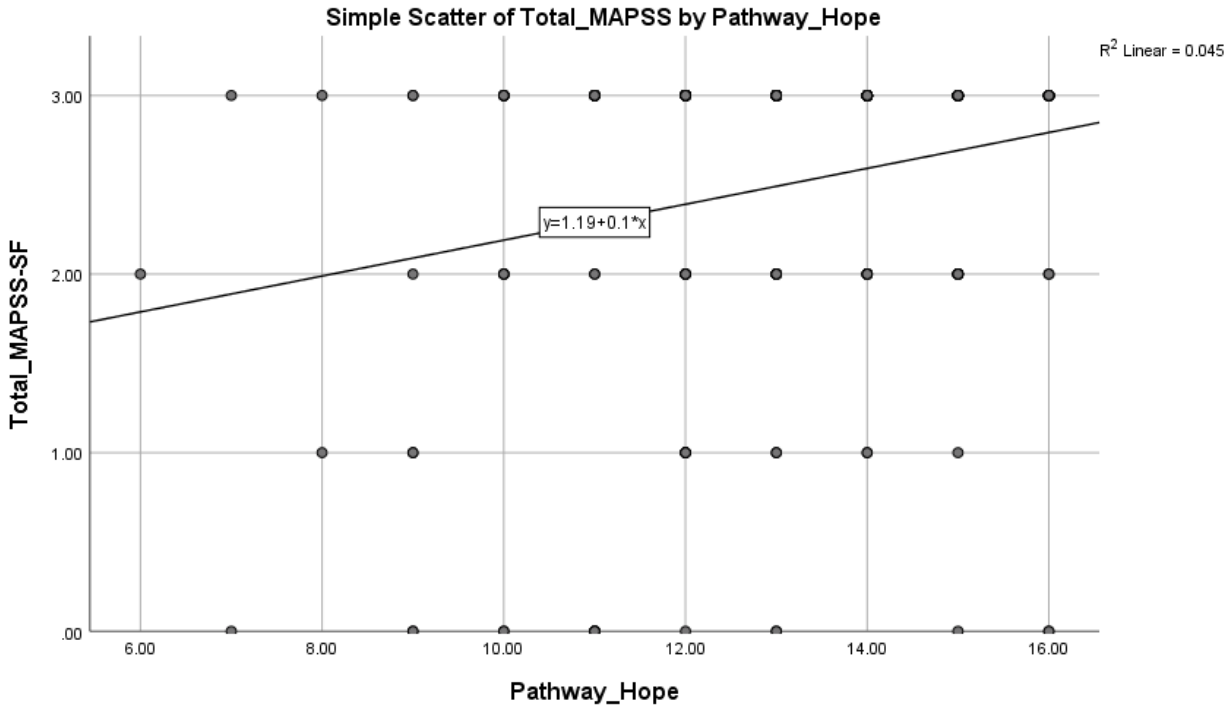


**Figure U6**

*Scatterplot of Total Hope and Perceived Social Support from Significant Other (MSPSS)*

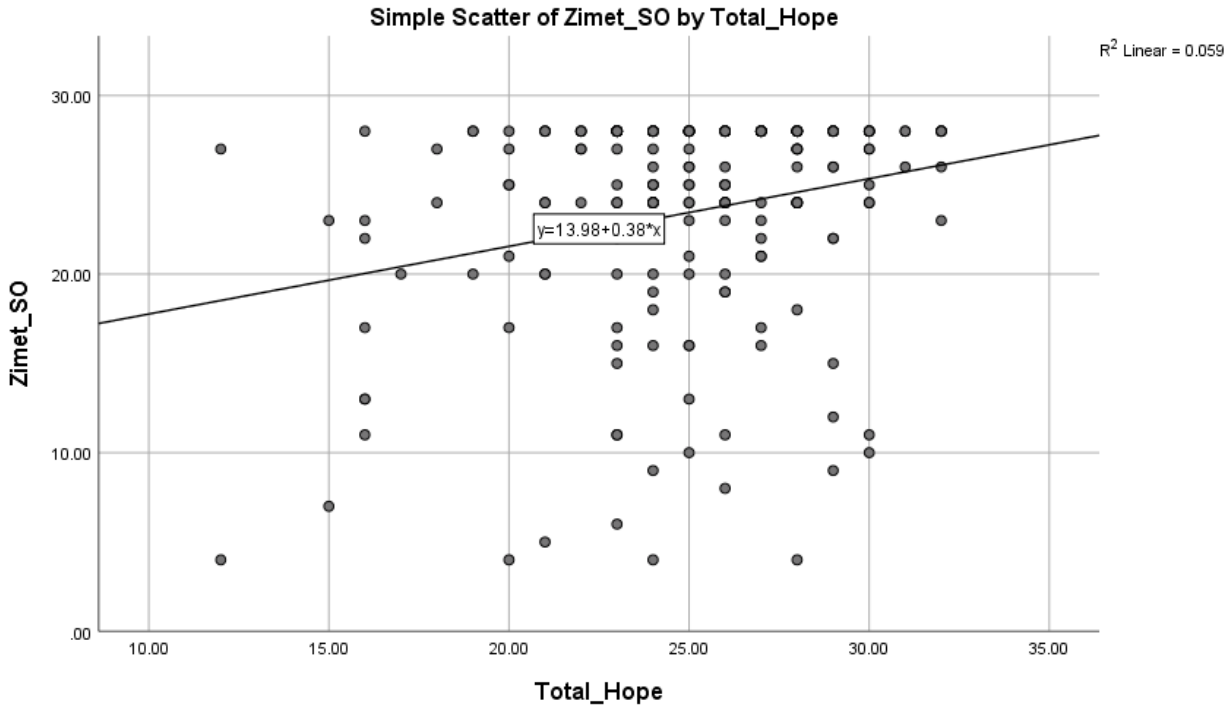


**Figure U7**

*Scatterplot of Pathway Hope and Perceived Social Support from Significant Other (MSPSS)*

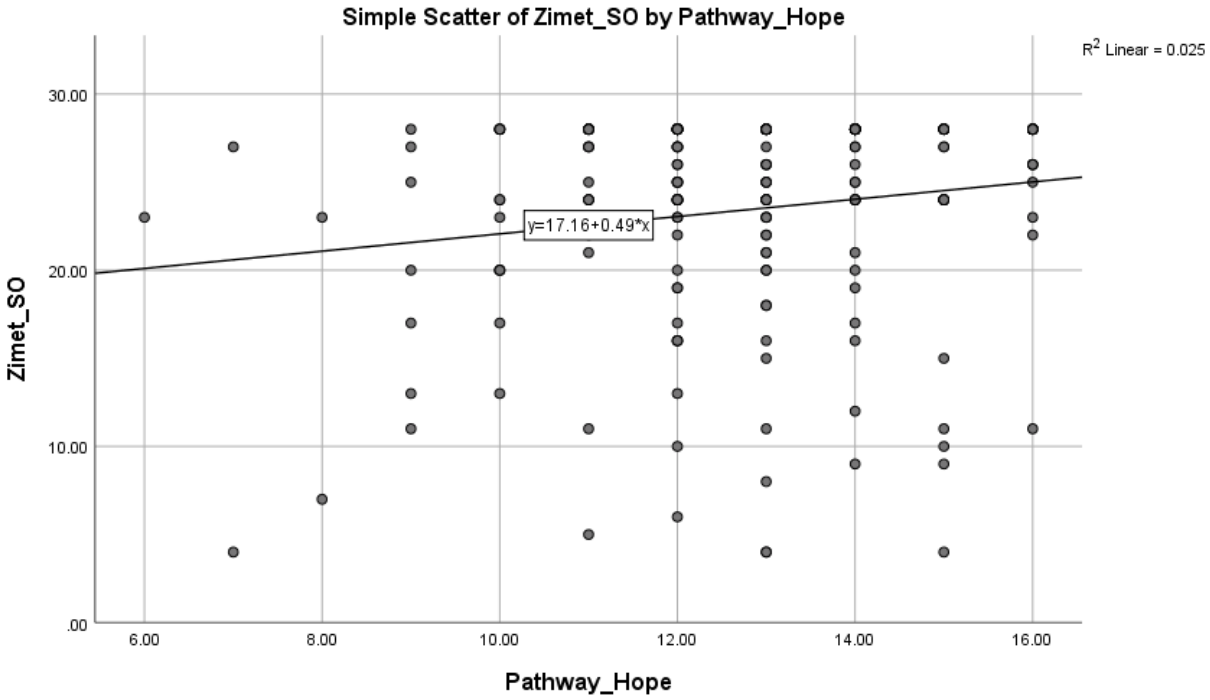


**Figure U8**

*Scatterplot of Agency Hope and Perceived Social Support from Significant Other (MSPSS)*

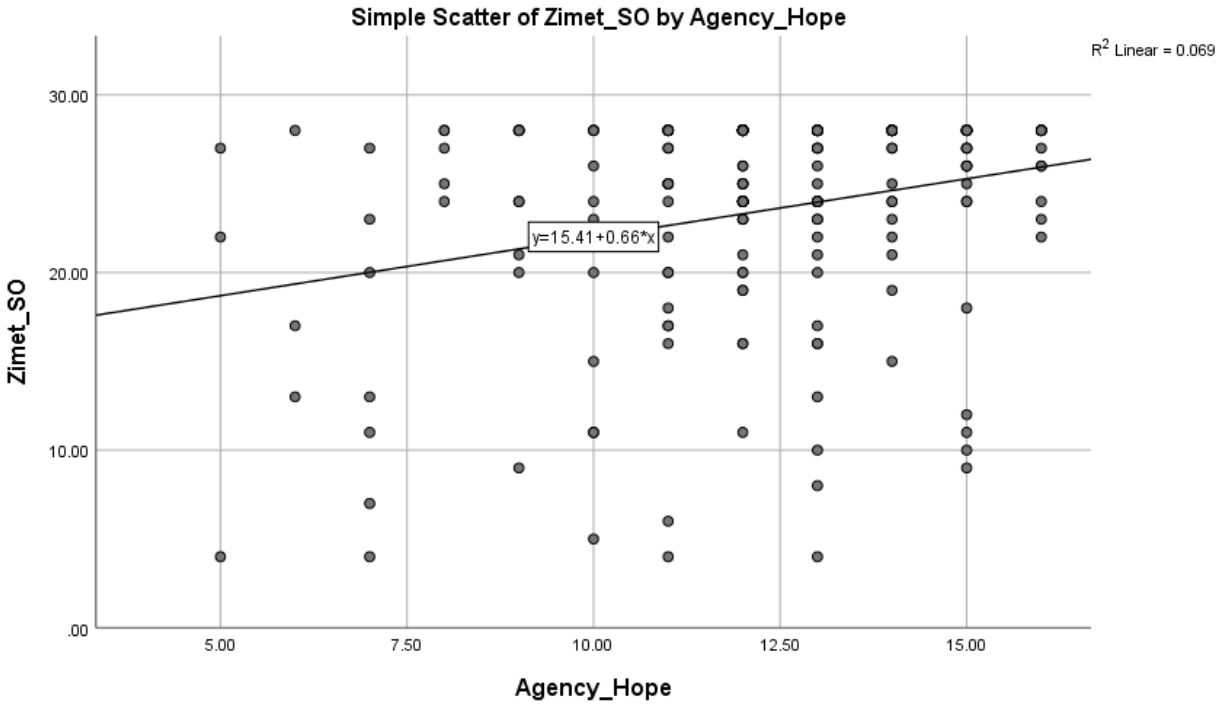


**Figure U9**

*Scatterplot of Total Hope and Perceived Social Support from Family (MSPSS)*

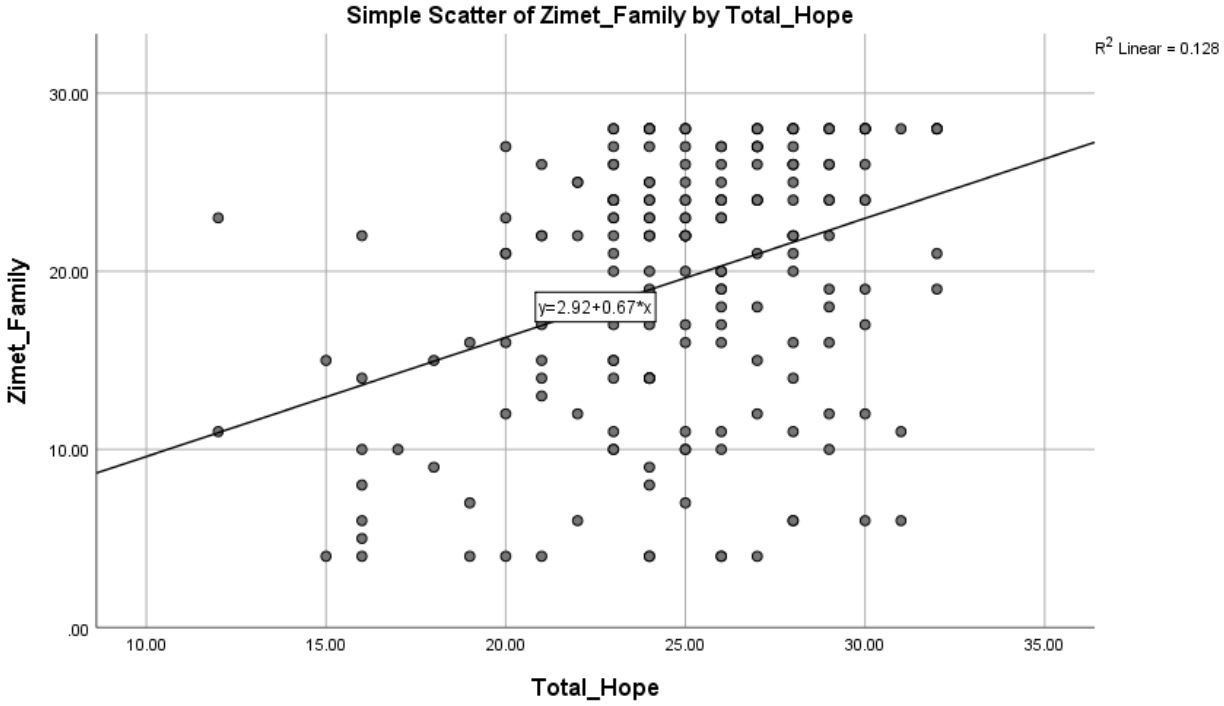


**Figure U10**

*Scatterplot of Pathway Hope and Perceived Social Support from Family (MSPSS)*

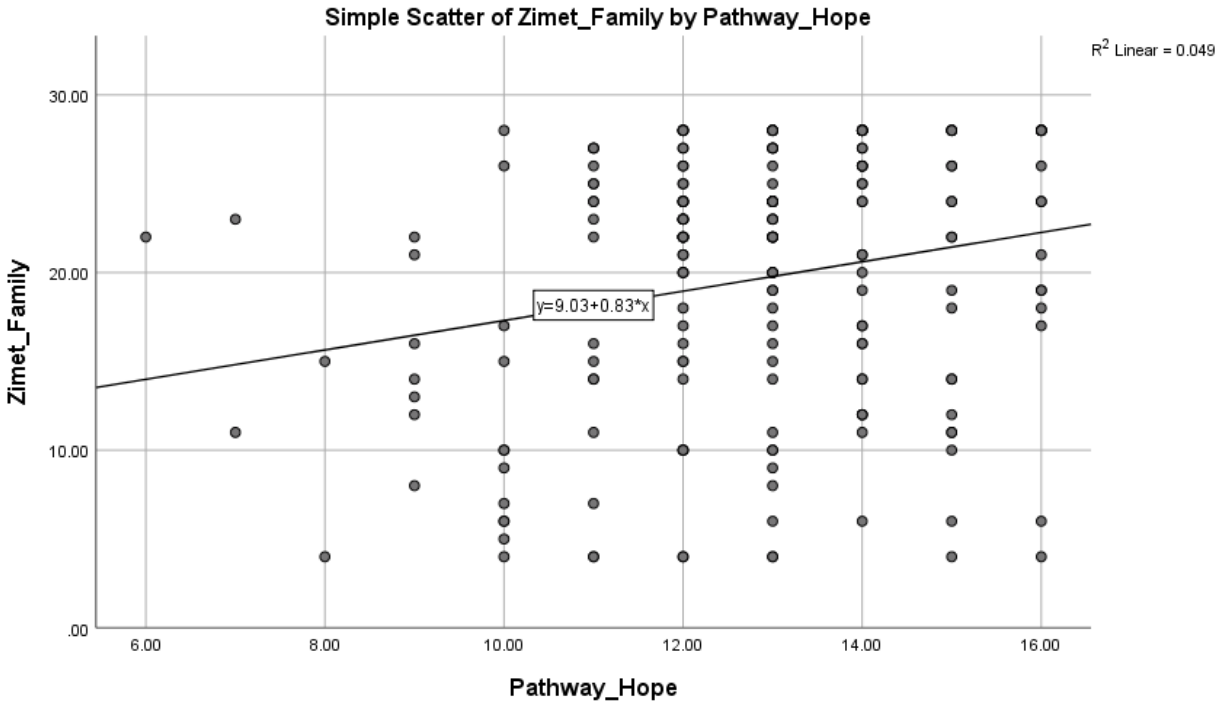


**Figure U11**

*Scatterplot of Agency Hope and Perceived Social Support from Family (MSPSS)*

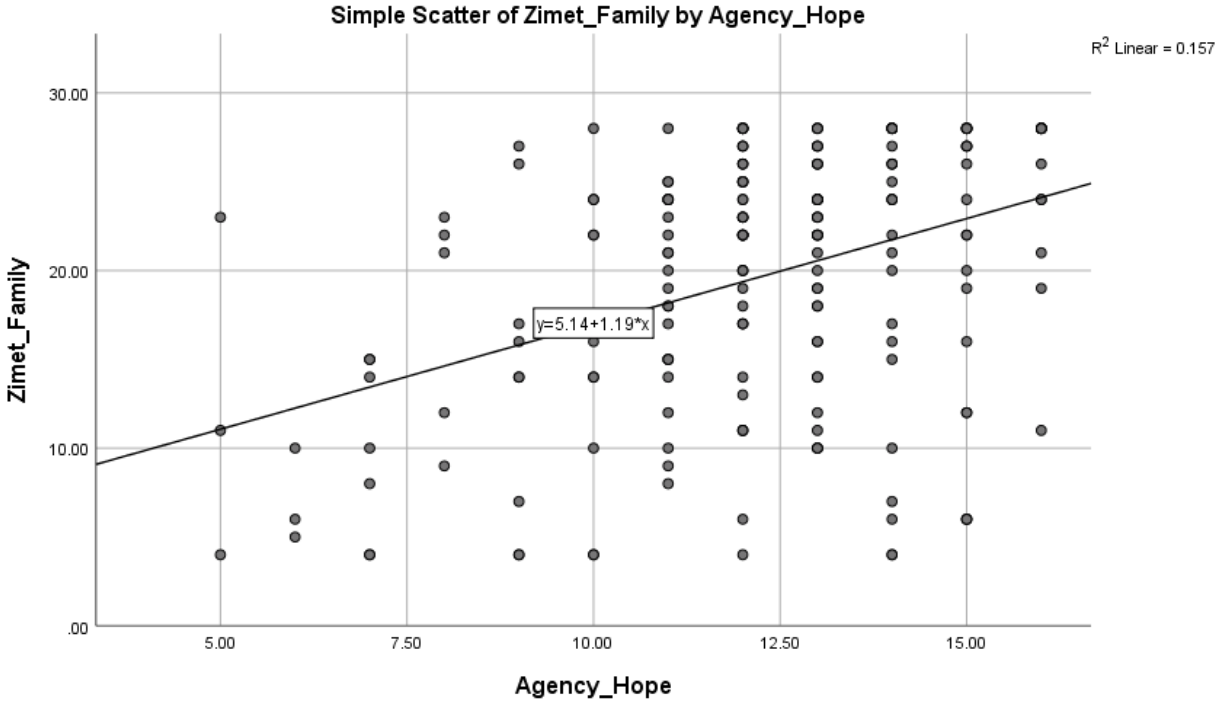


**Figure U12**

*Scatterplot of Total Hope and Perceived Social Support from Friends (MSPSS)*

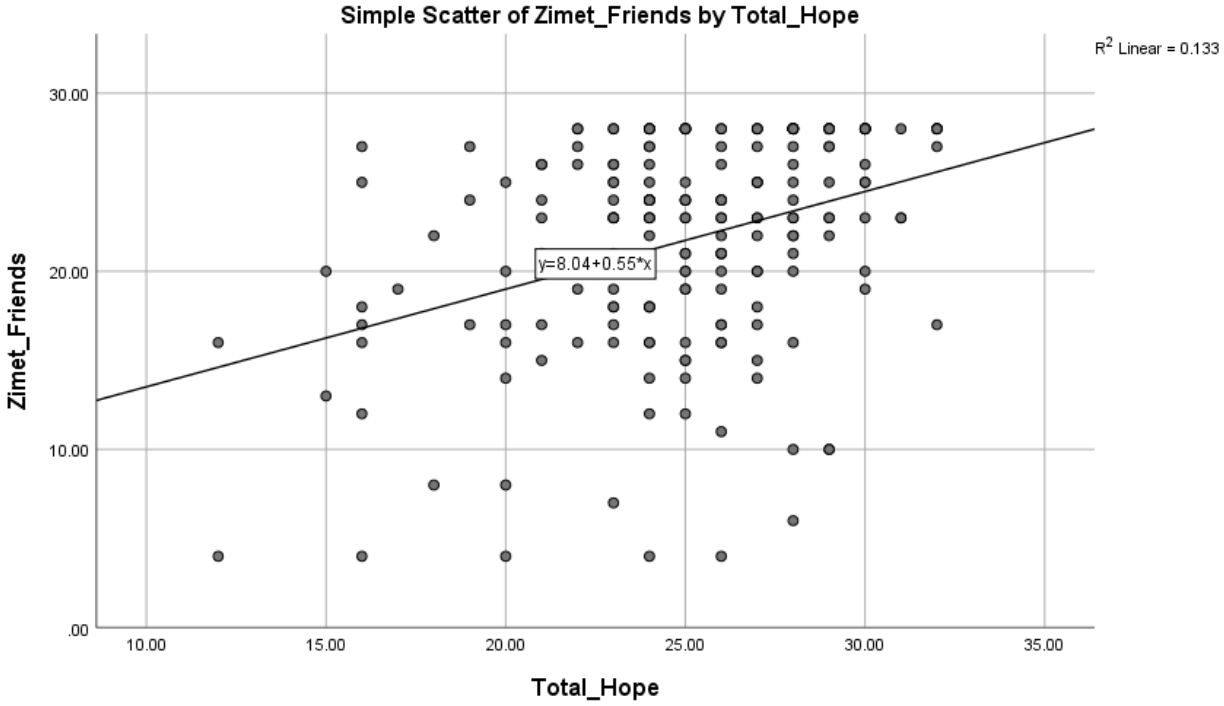


**Figure U13**

*Scatterplot of Pathway Hope and Perceived Social Support from Friends (MSPSS)*

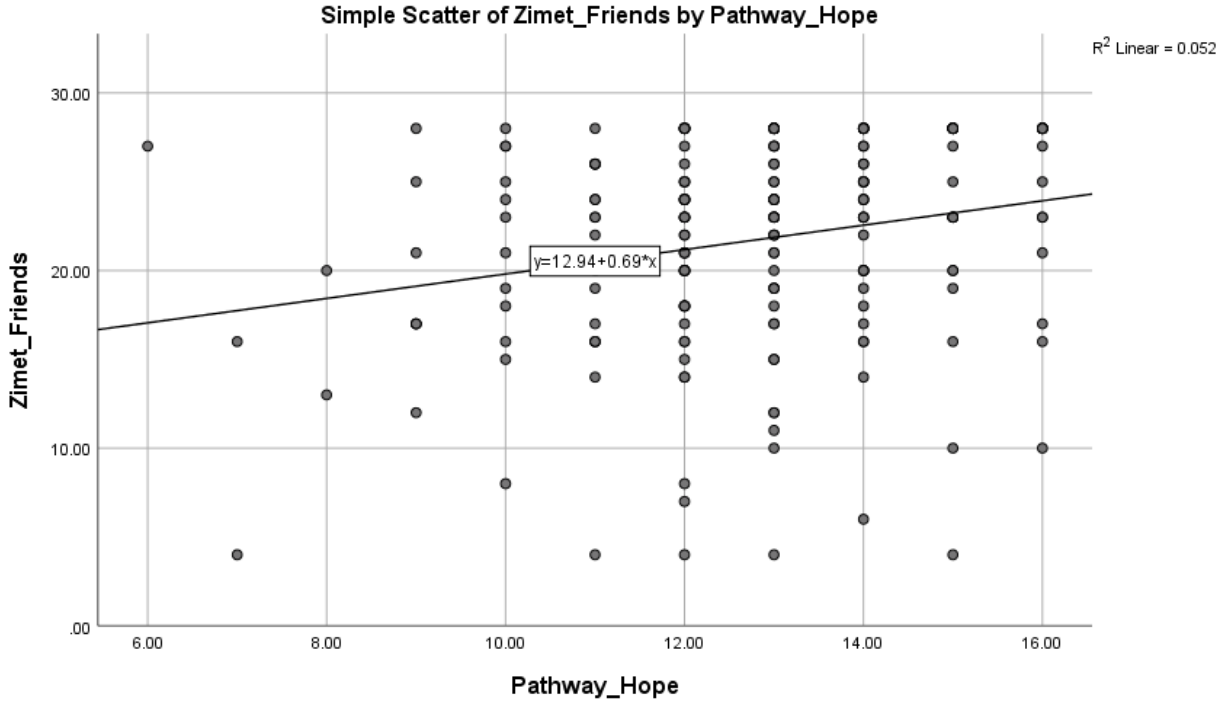
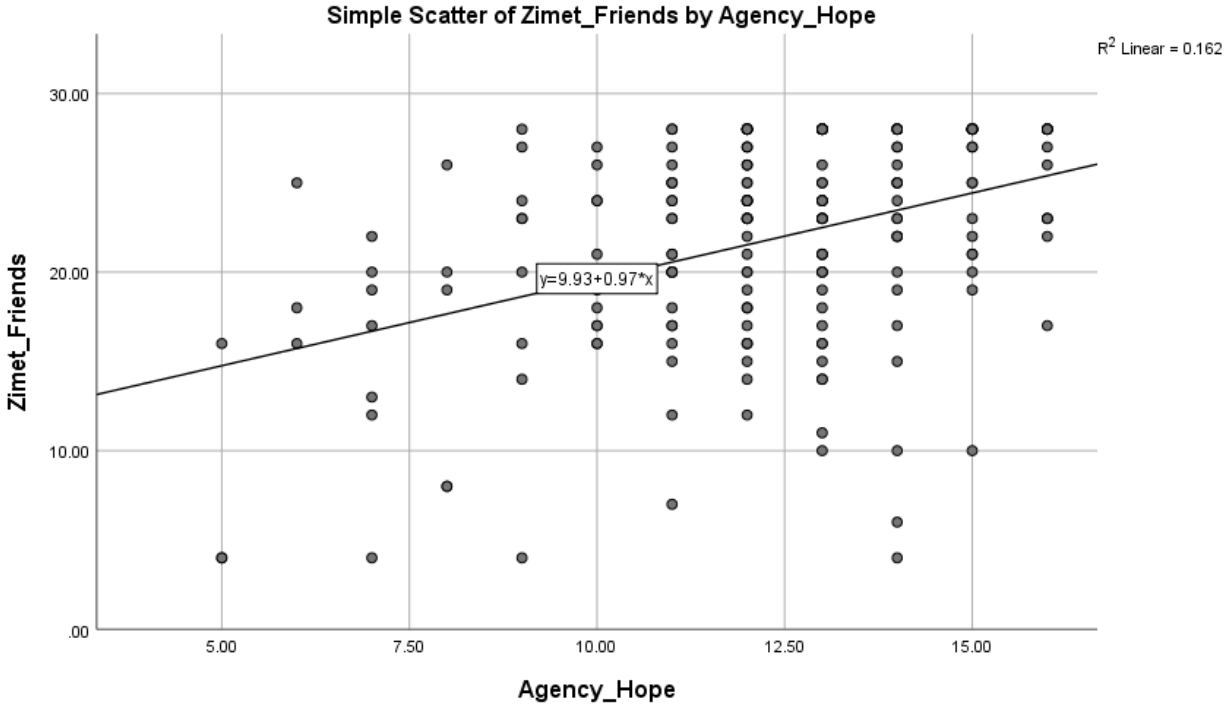


**Figure U14**

*Scatterplot of Agency Hope and Perceived Social Support from Friends (MSPSS)*



## Appendix V: Charts and Graphs for Hypothesis 3 Assumption Testing

**Figure V1**

*Scatterplot of Pathway Hope and Total Academic Resilience*

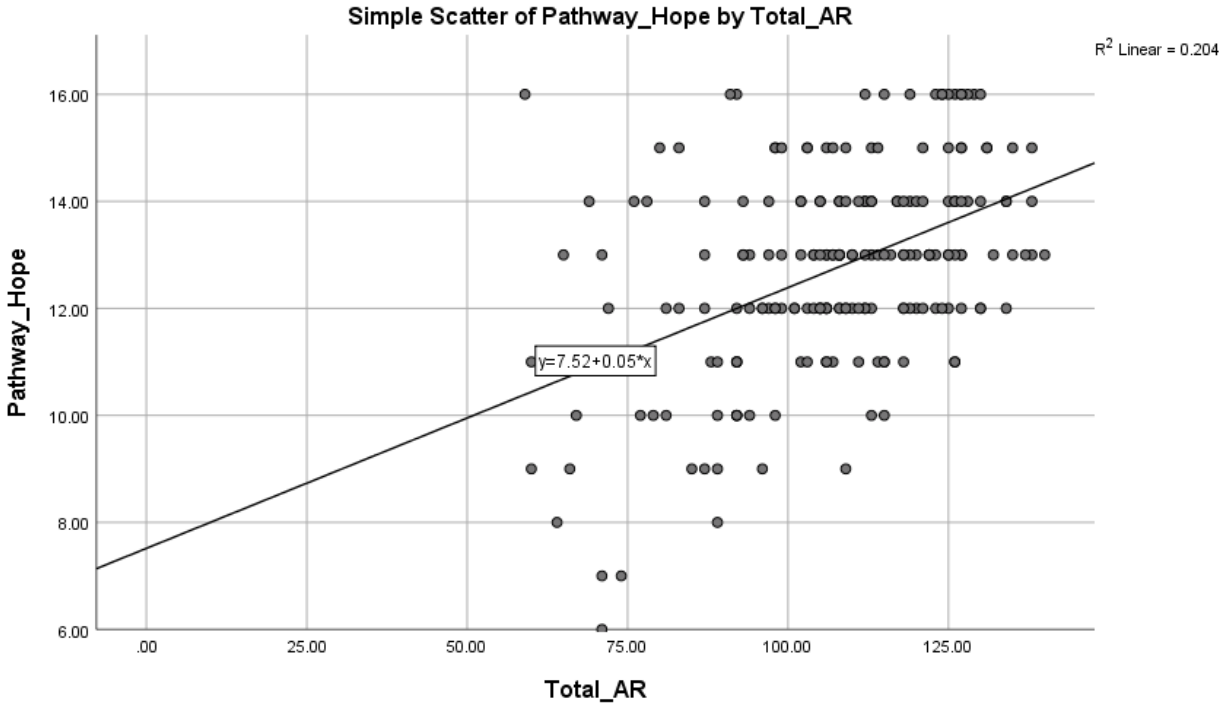


**Figure V2**

*Scatterplot of Agency Hope and Total Academic Resilience*

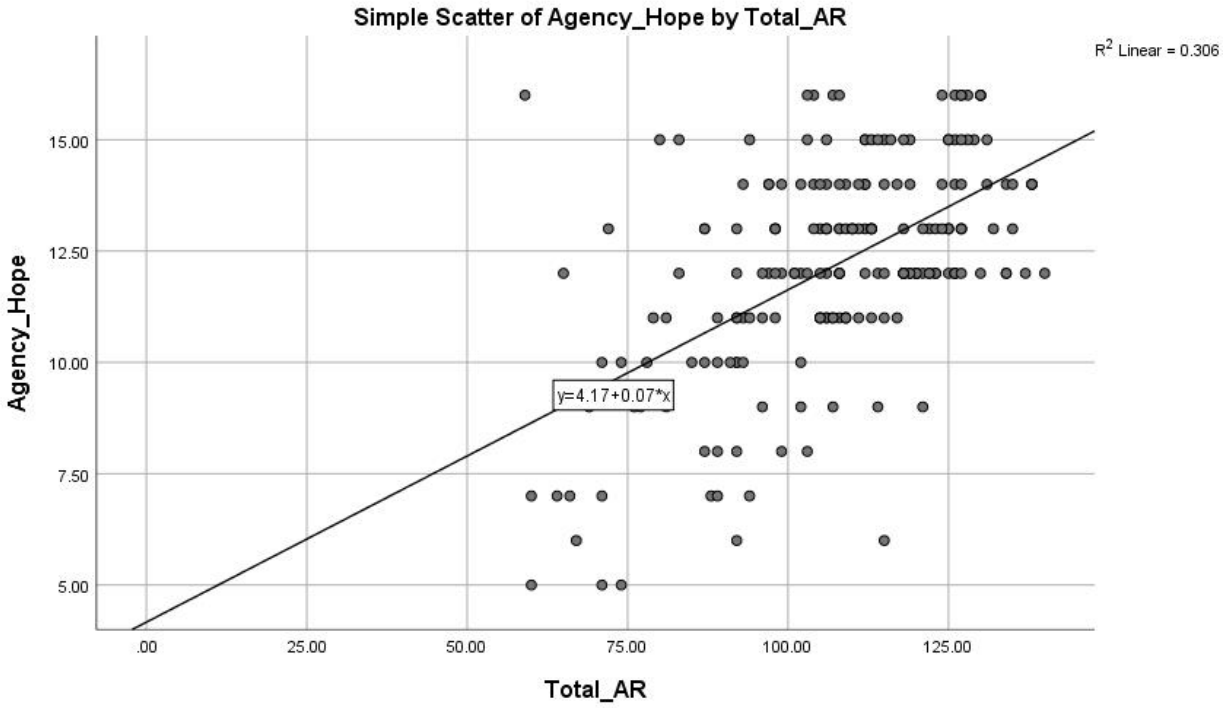


**Figure V3**

*Scatterplot of Total Hope and Academic Resilience Perseverance Subscale*

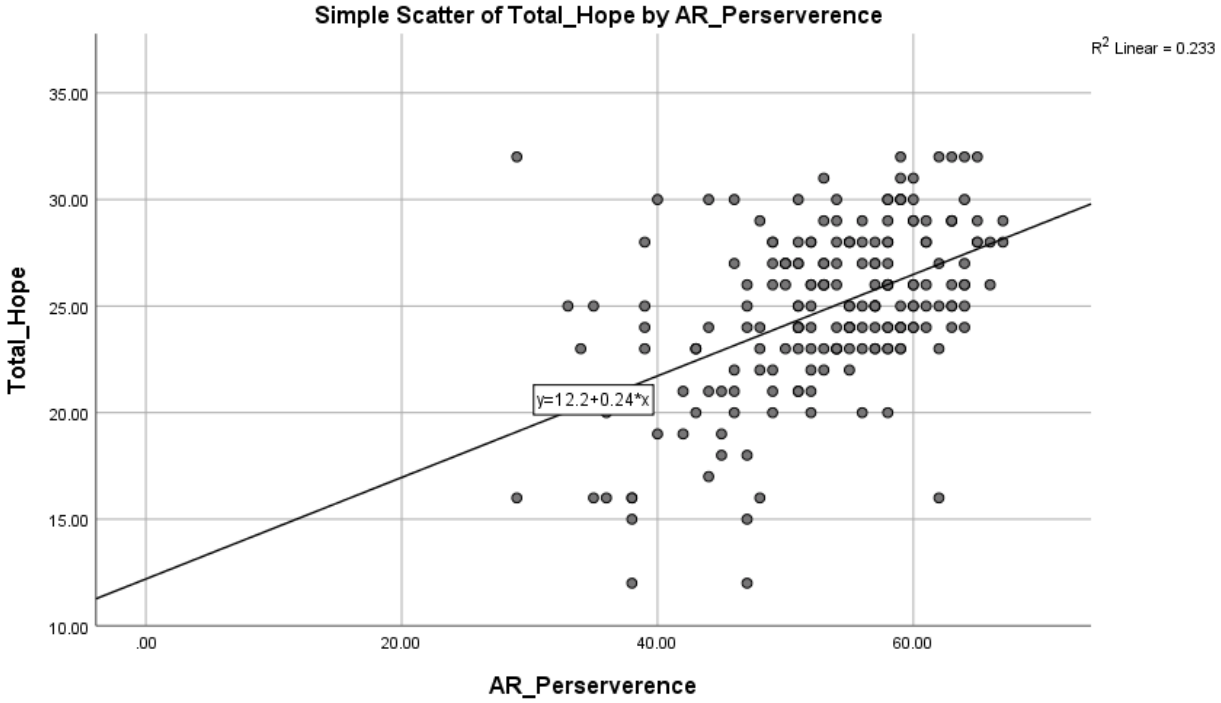


**Figure V4**

*Scatterplot of Pathway Hope and Academic Resilience Perseverance Subscale*

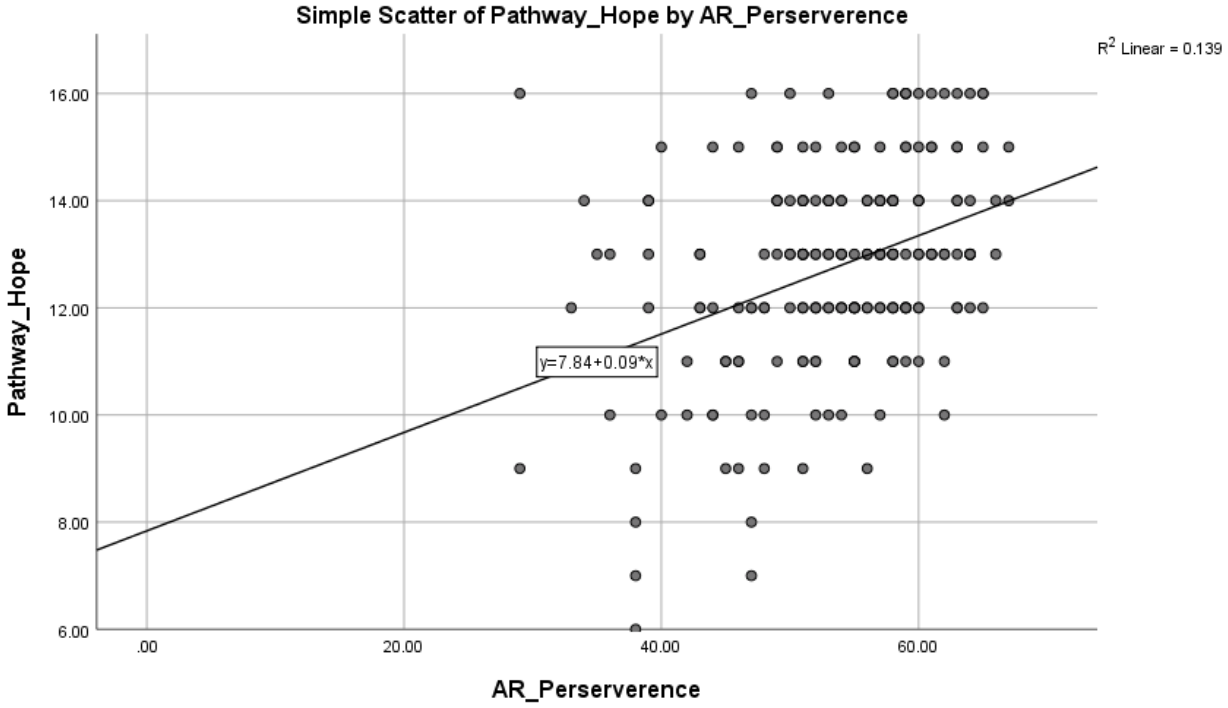


**Figure V5**

*Scatterplot of Agency Hope and Academic Resilience Perseverance Subscale*

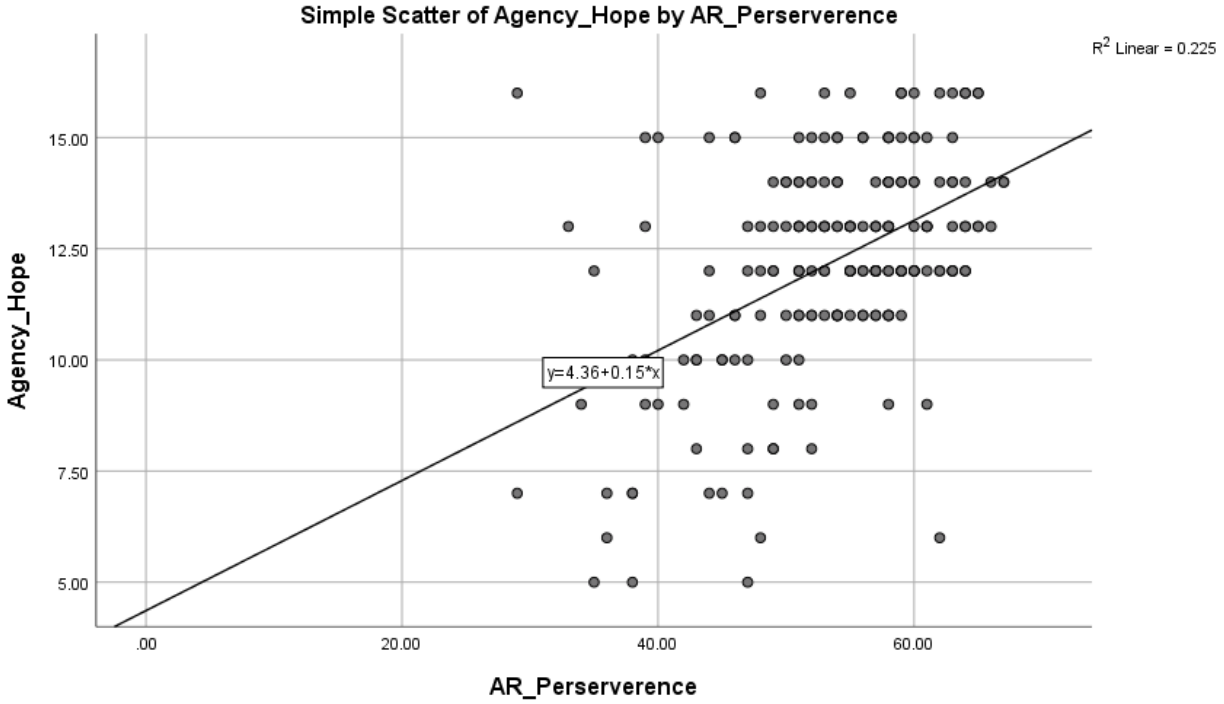


**Figure V6**

*Scatterplot of Total Hope and Academic Resilience Reflective/Help Seeking Subscale*

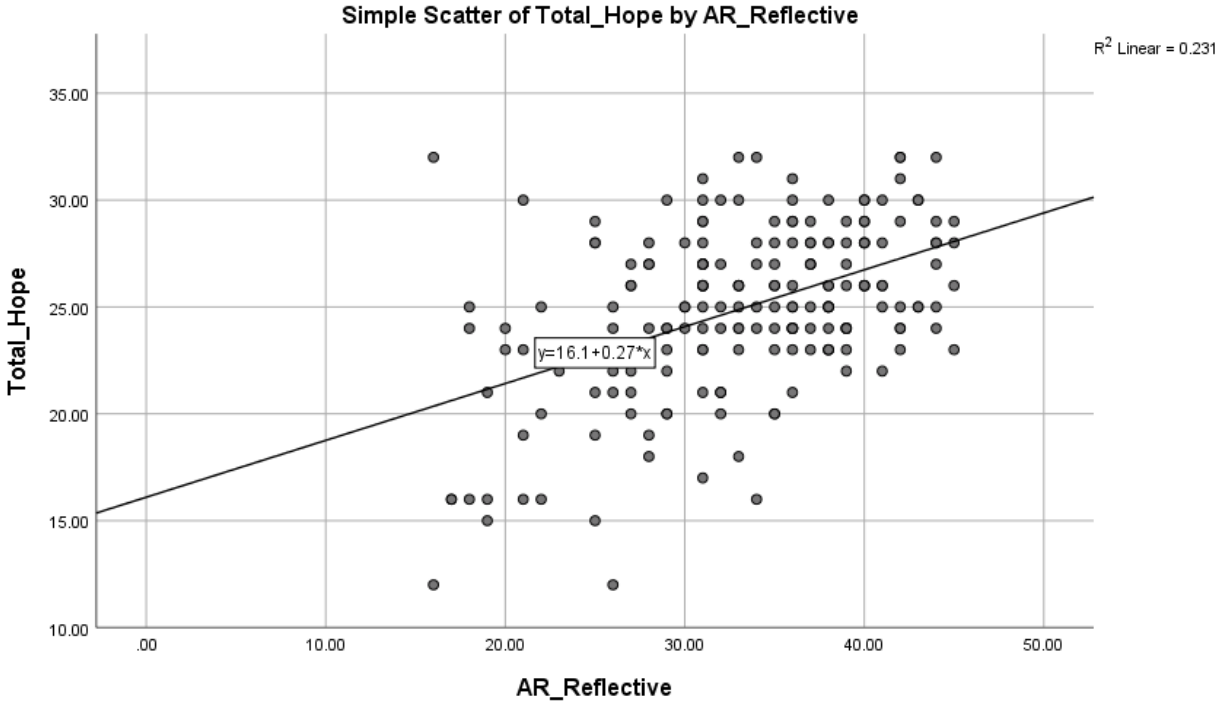


**Figure V7**

*Scatterplot of Pathway Hope and Academic Resilience Reflective/Help Seeking Subscale*

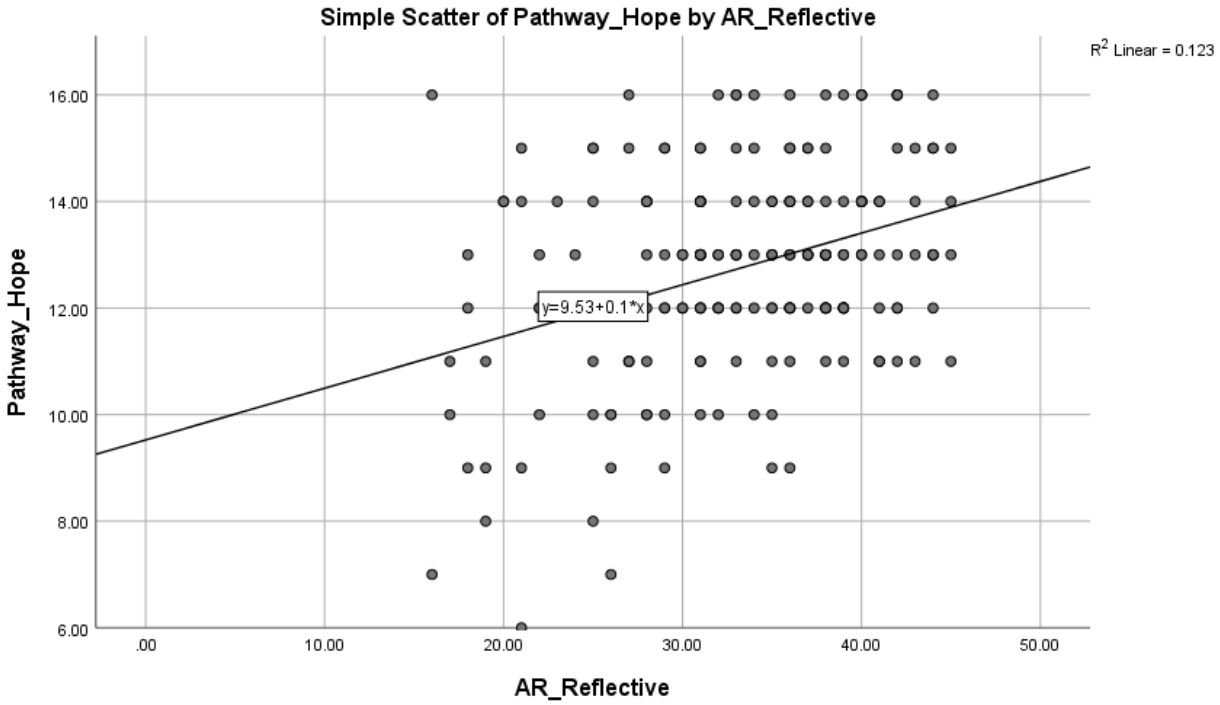


**Figure V8**

*Scatterplot of Agency Hope and Academic Resilience Reflective/Help Seeking Subscale*

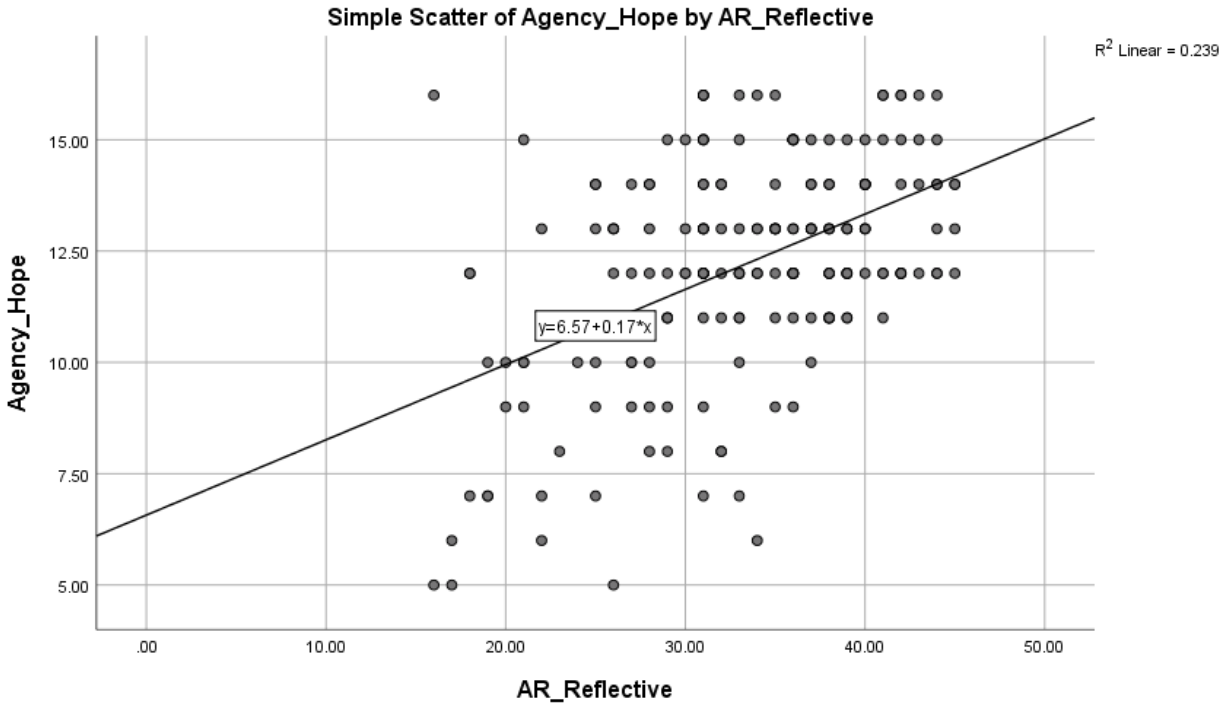


**Figure V9**

*Scatterplot of Total Hope and Academic Resilience Negative Emotion Subscale*

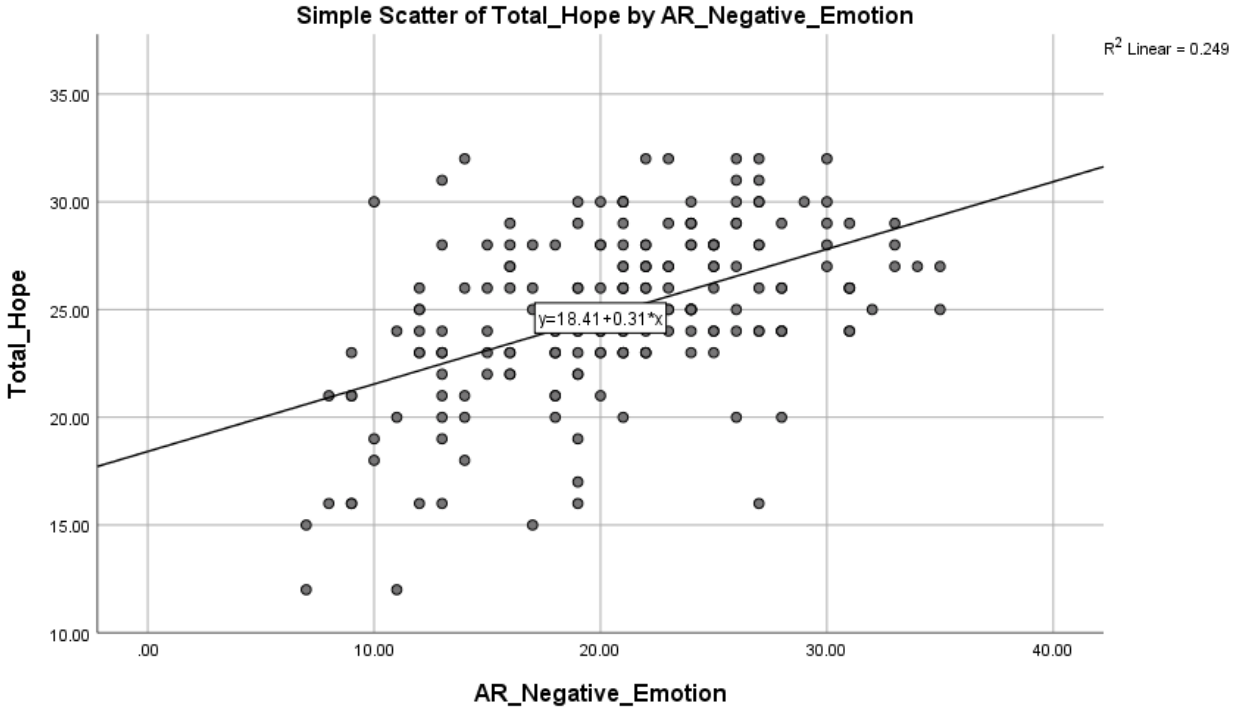


**Figure V10**

*Scatterplot of Pathway Hope and Academic Resilience Negative Emotion Subscale*

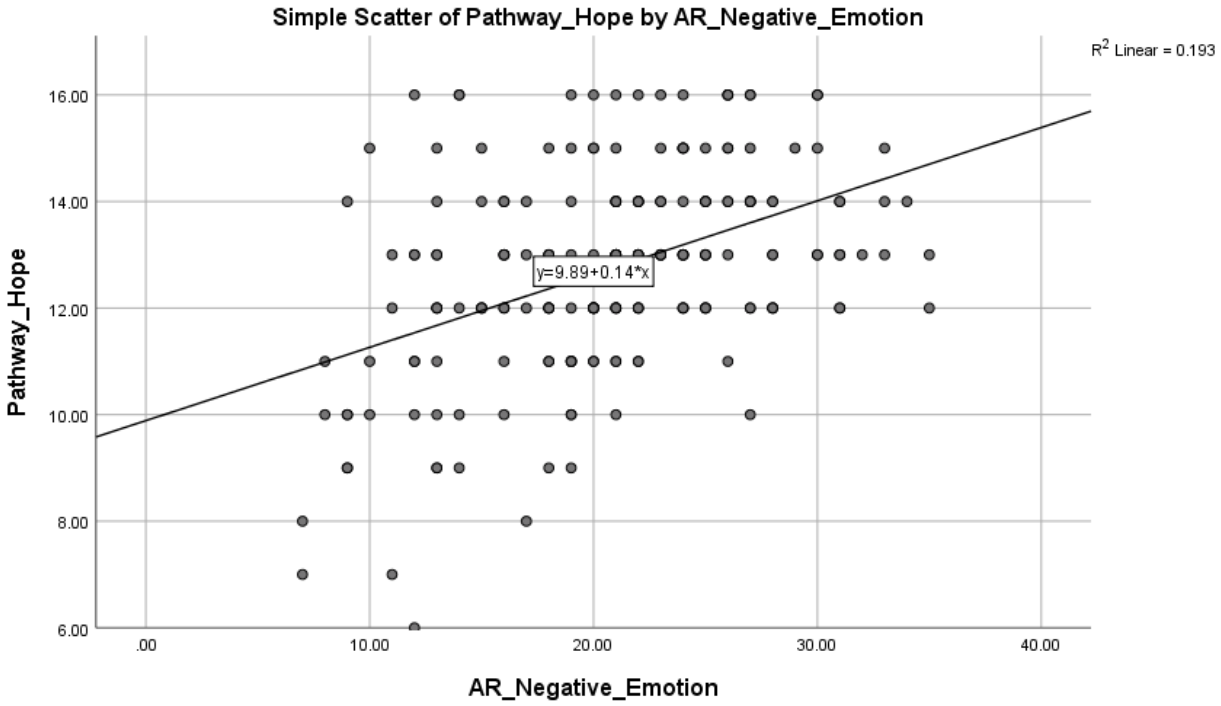
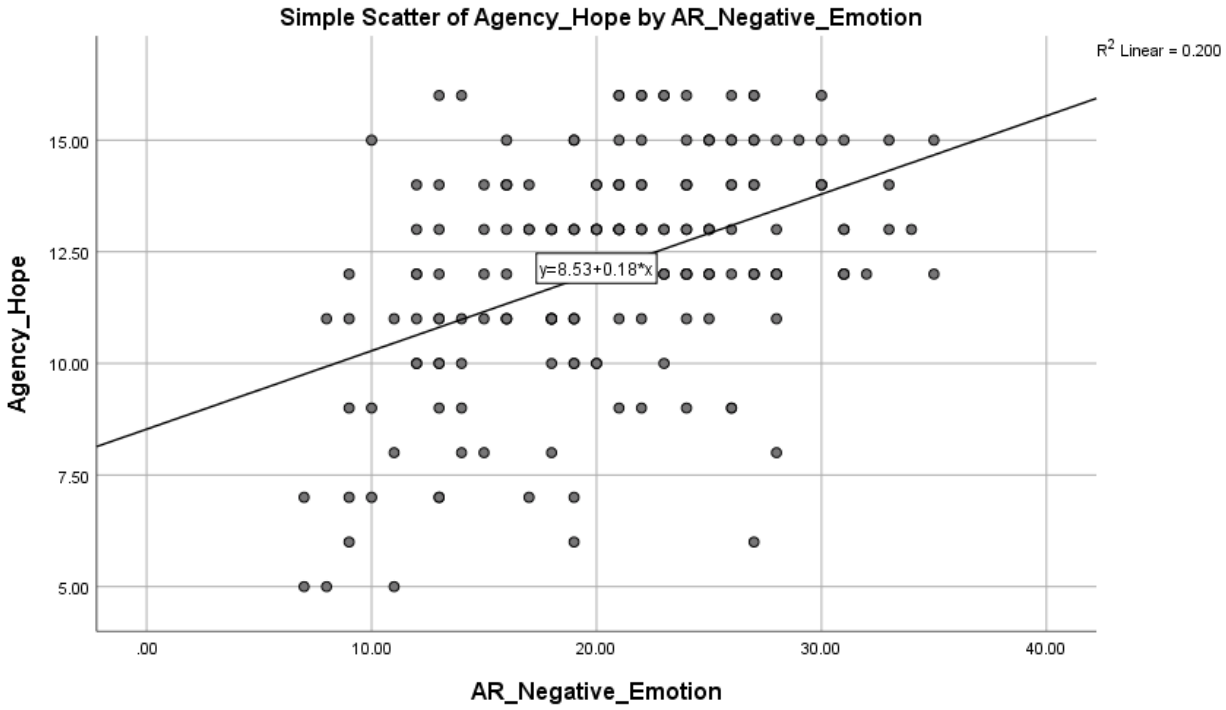


**Figure V11**

*Scatterplot of Agency Hope and Academic Resilience Negative Emotion Subscale*



## Appendix W: Charts and Graphs for Hypothesis 4 Assumption Testing

**Figure W1**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Total Hope, and Total Academic Resilience*

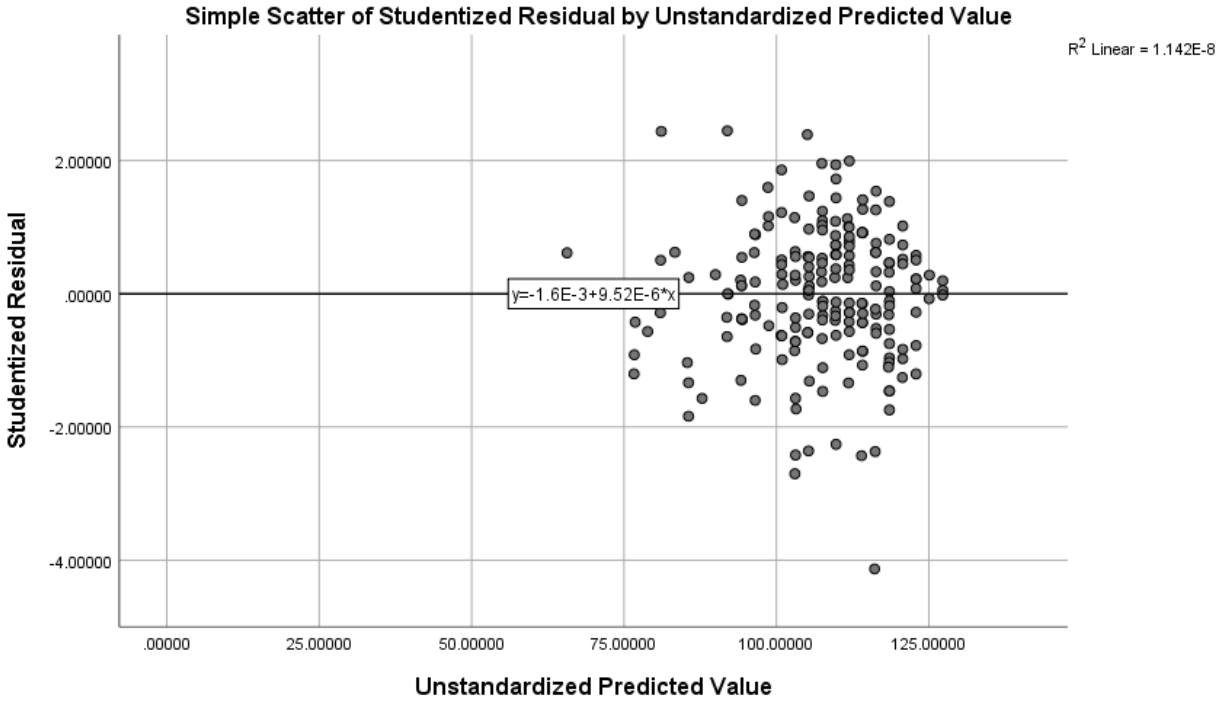


**Figure W2**

*Partial Regression Plot for Total Academic Resilience and ACE Score*

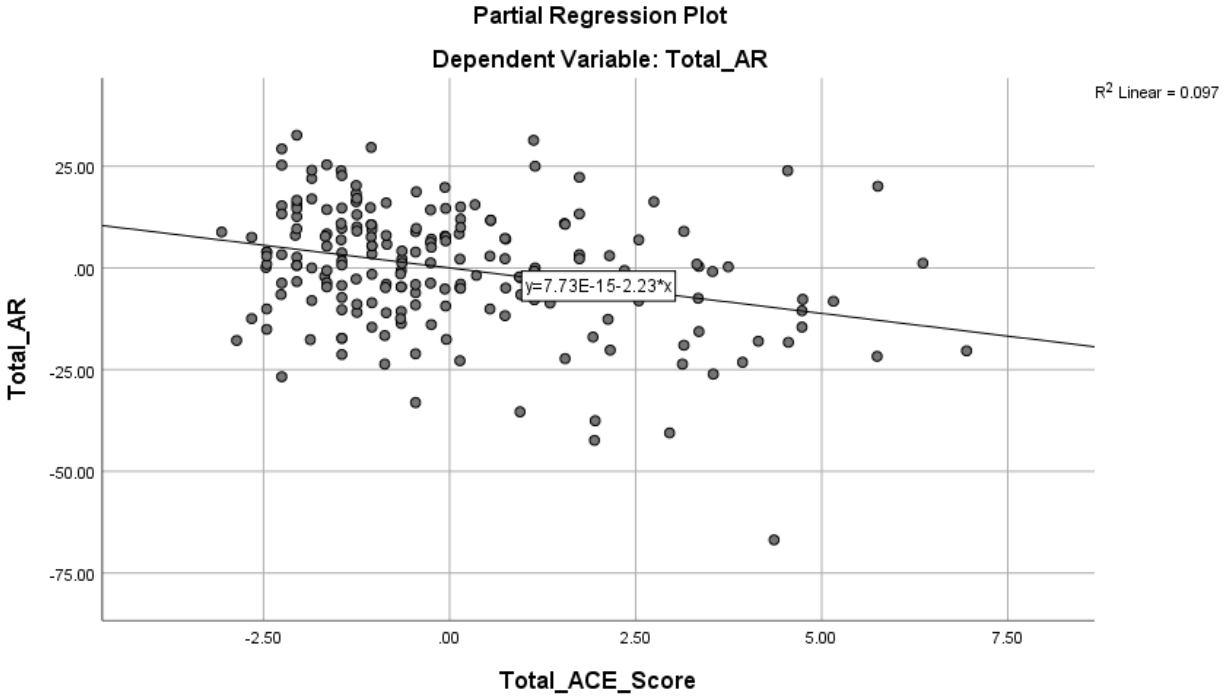


**Figure W3**

*Partial Regression Plot for Total Academic Resilience and Total Hope*

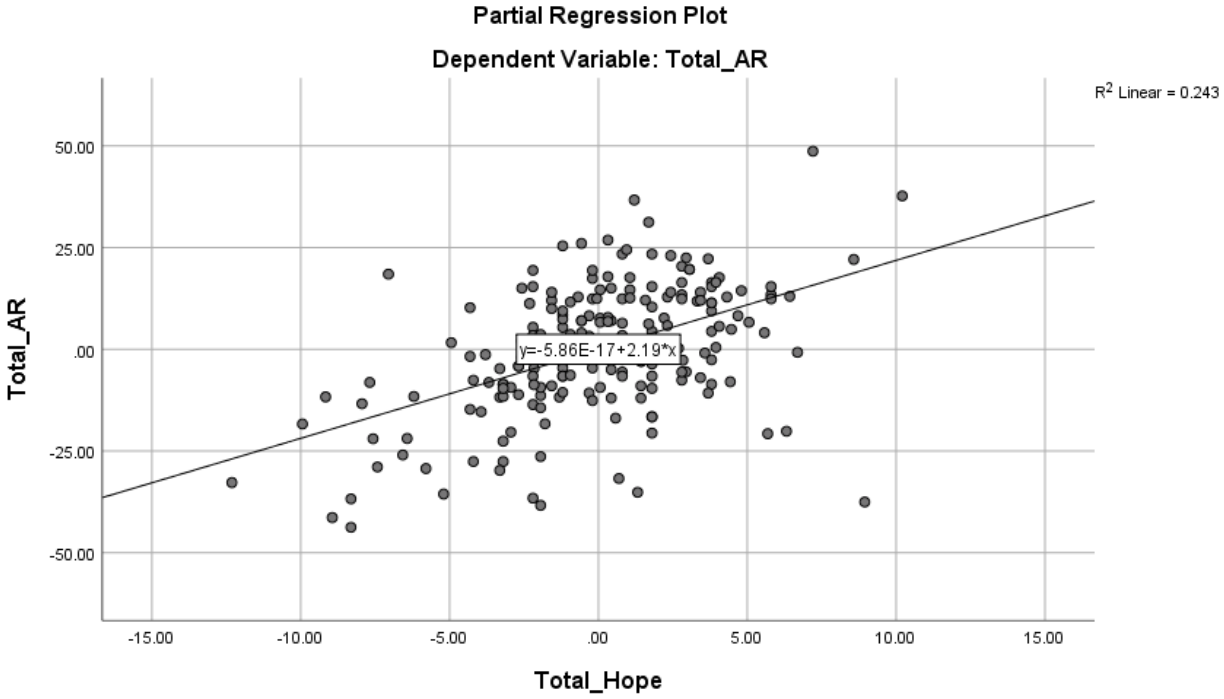


**Figure W4**

*Histogram for ACE Score, Total Hope, and Total Academic Resilience*

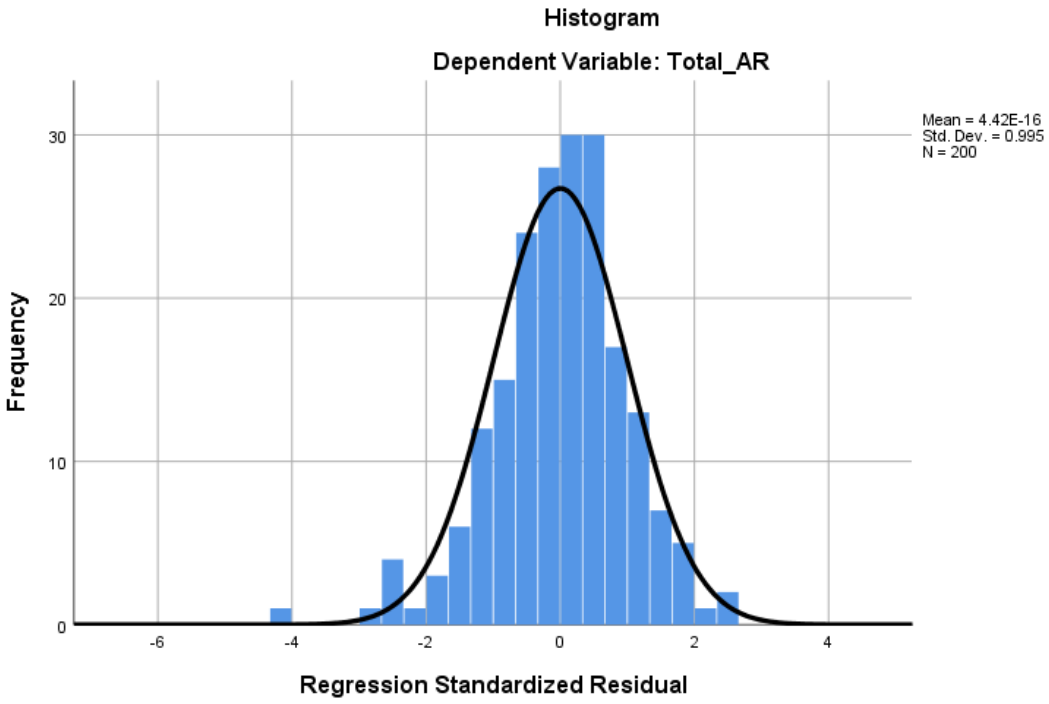


**Figure W5**

*P-P Plot of Regression Standardized Residual for ACE Score, Total Hope, and Total Academic Resilience*

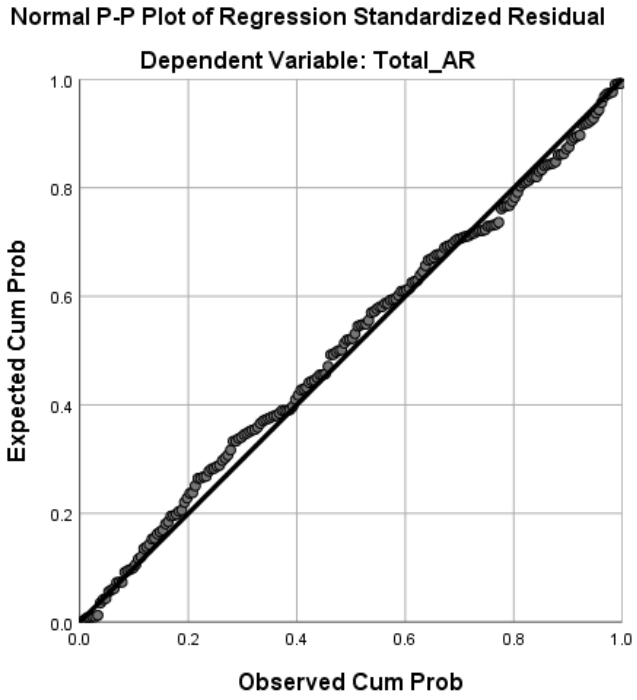


**Figure W6**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Agency Hope, and Total Academic Resilience*

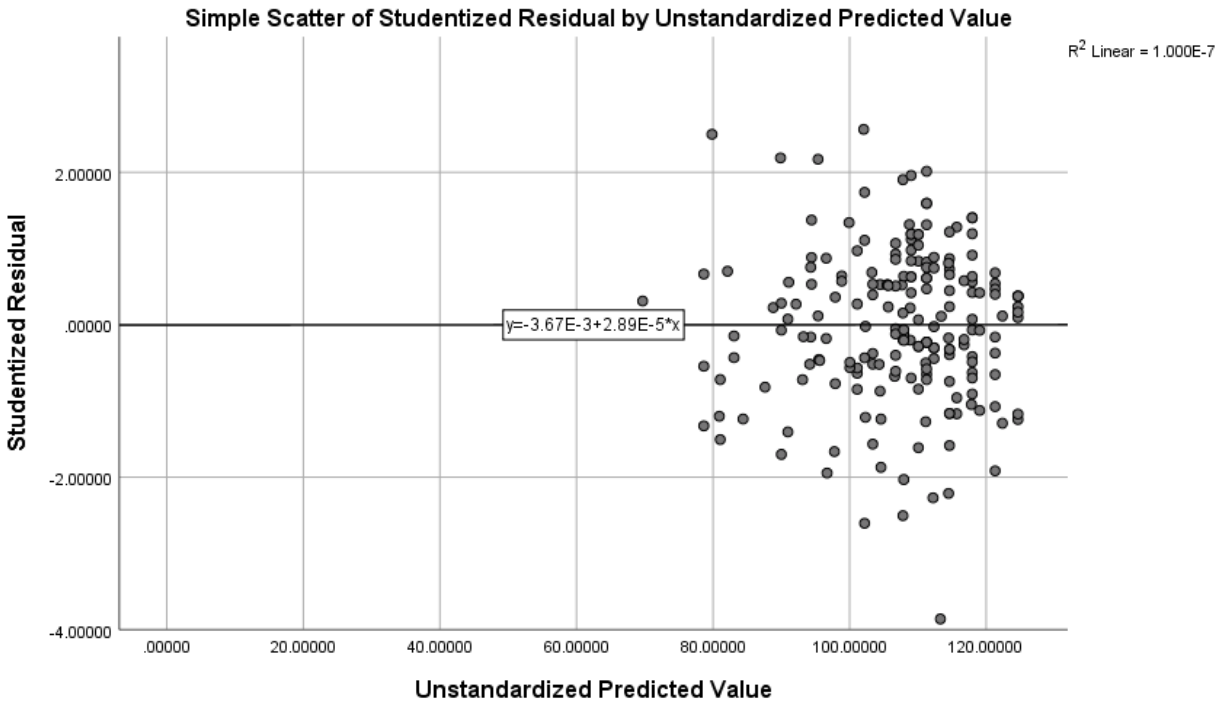


**Figure W7**

*Partial Regression Plot for Total Academic Resilience and Agency Hope*

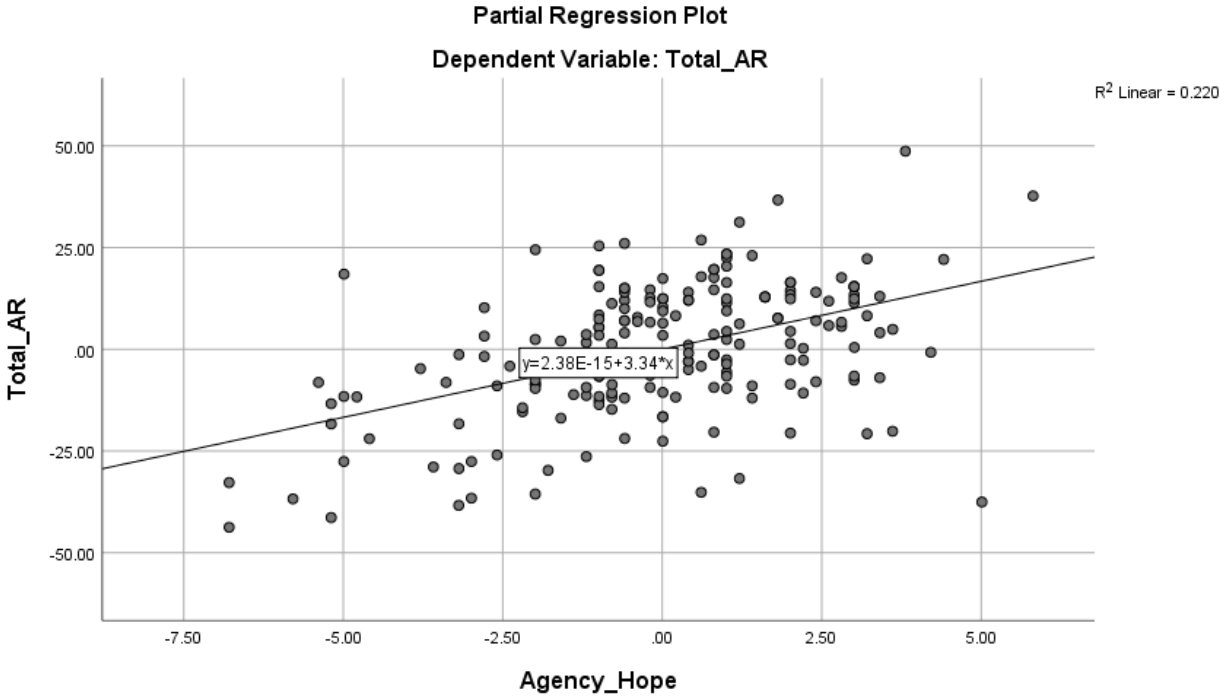


**Figure W8**

*Histogram for ACE Score, Agency Hope, and Total Academic Resilience*

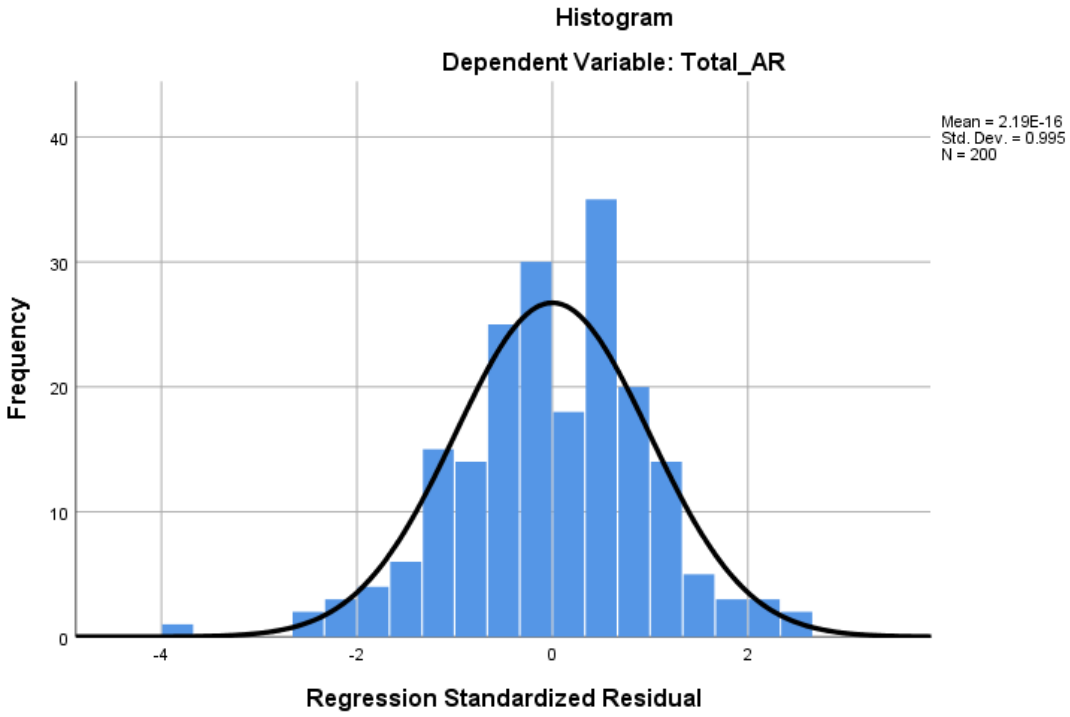


**Figure W9**

*P-P Plot of Regression Standardized Residual for ACE Score, Agency Hope, and Total Academic Resilience*

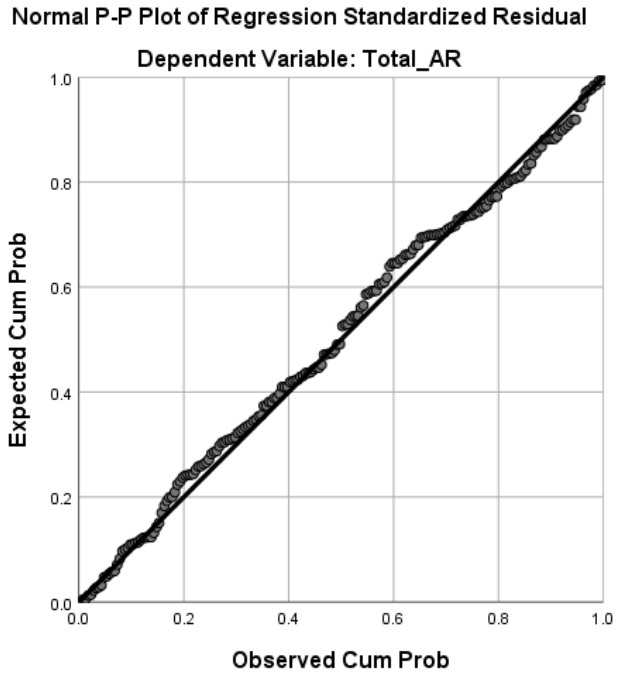


**Figure W10**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Pathway Hope, and Total Academic Resilience*

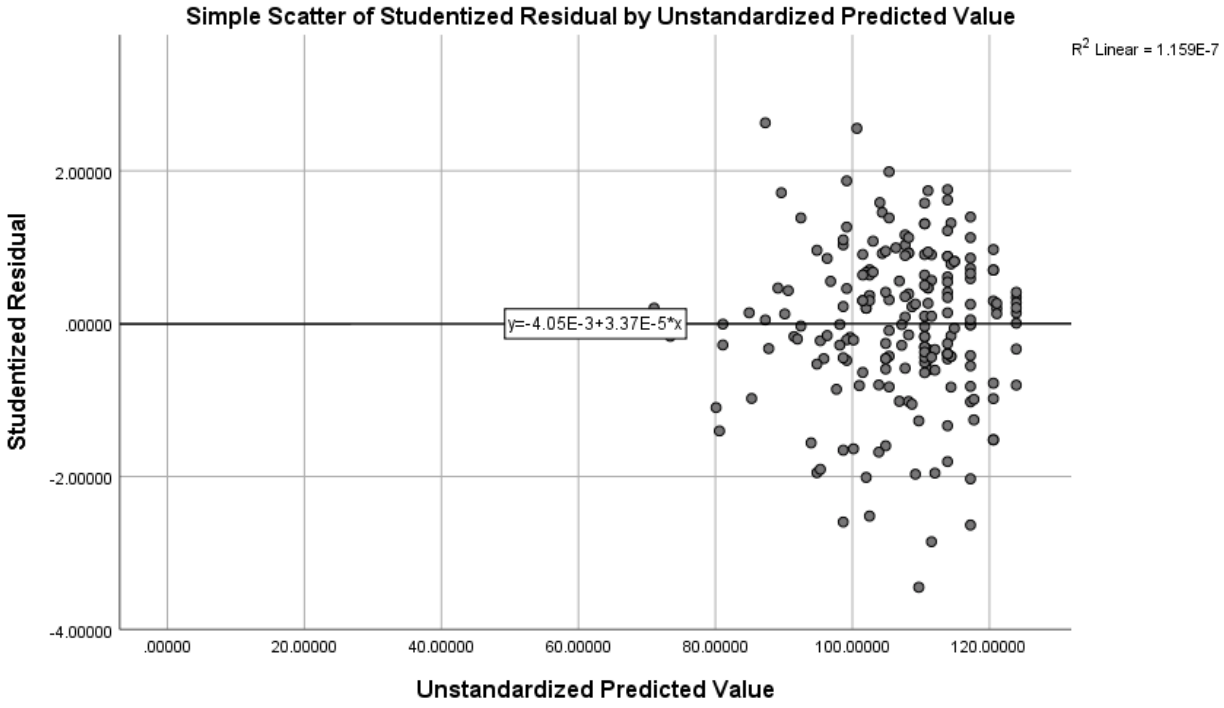


**Figure W11**

*Partial Regression Plot for Total Academic Resilience and Pathway Hope*

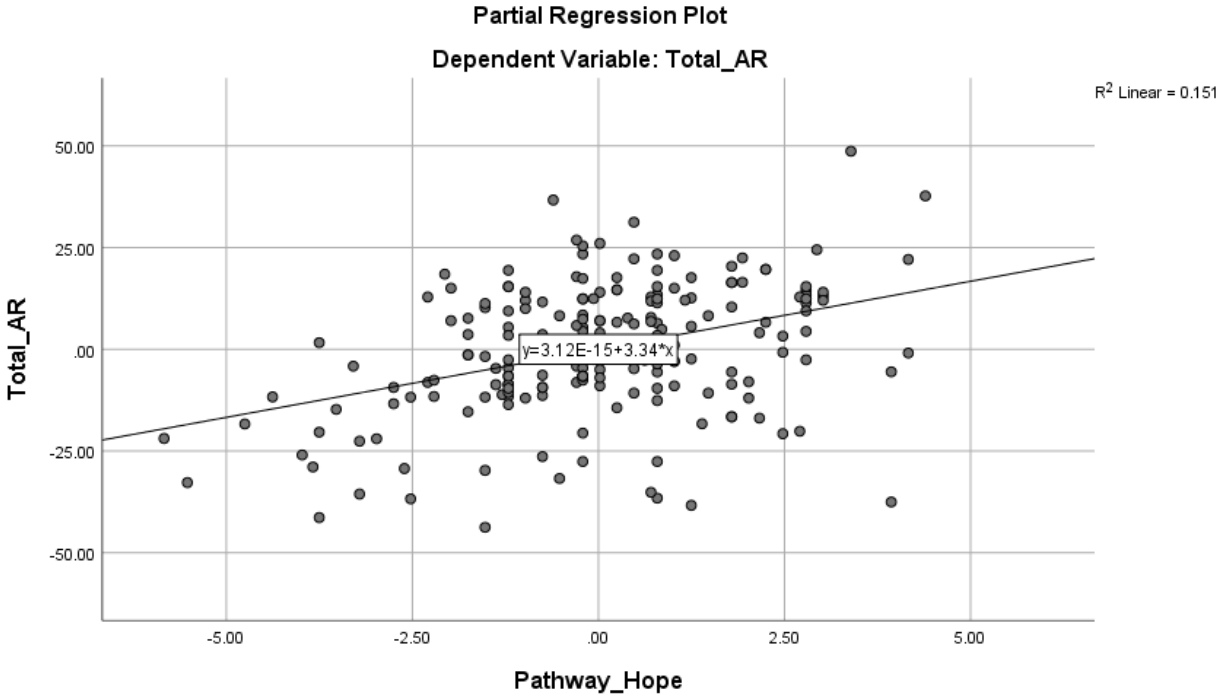


**Figure W12**

*Histogram for ACE Score, Pathway Hope, and Total Academic Resilience*

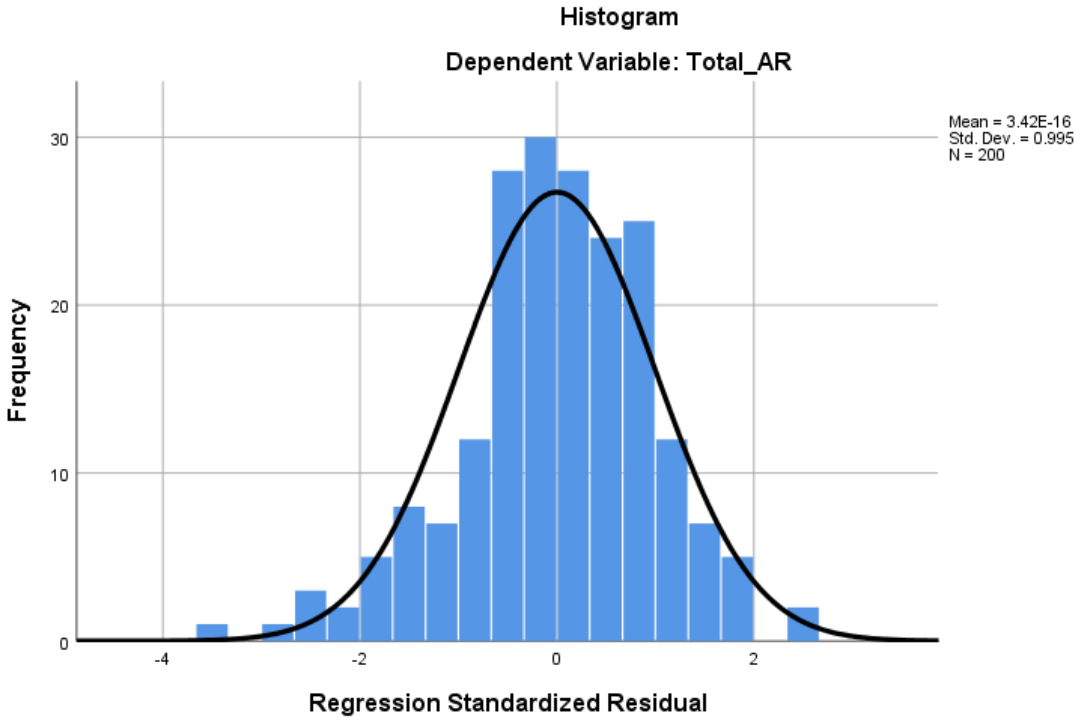
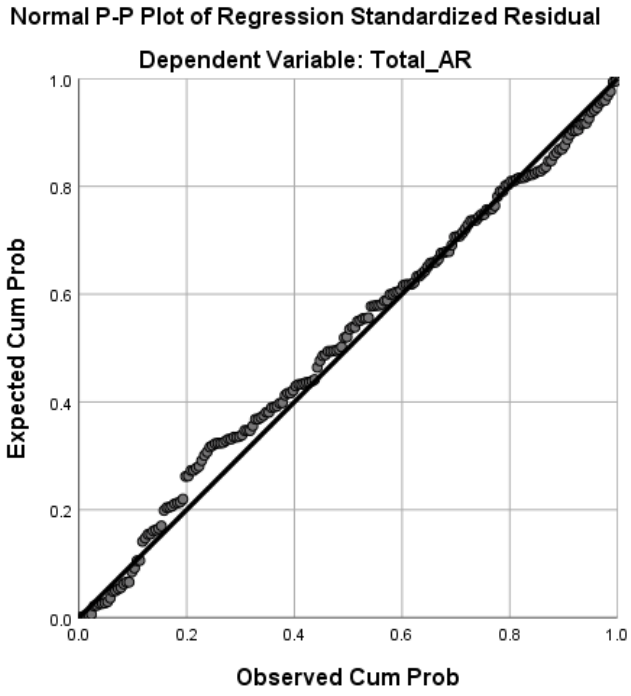


**Figure W13**

*P-P Plot of Regression Standardized Residual for ACE Score, Pathway Hope, and Total Academic Resilience*



## Appendix X: Charts and Graphs for Hypothesis 5 Assumption Testing

**Figure X1**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Total Hope, and Total Perceived Social Support (MSPSS)*

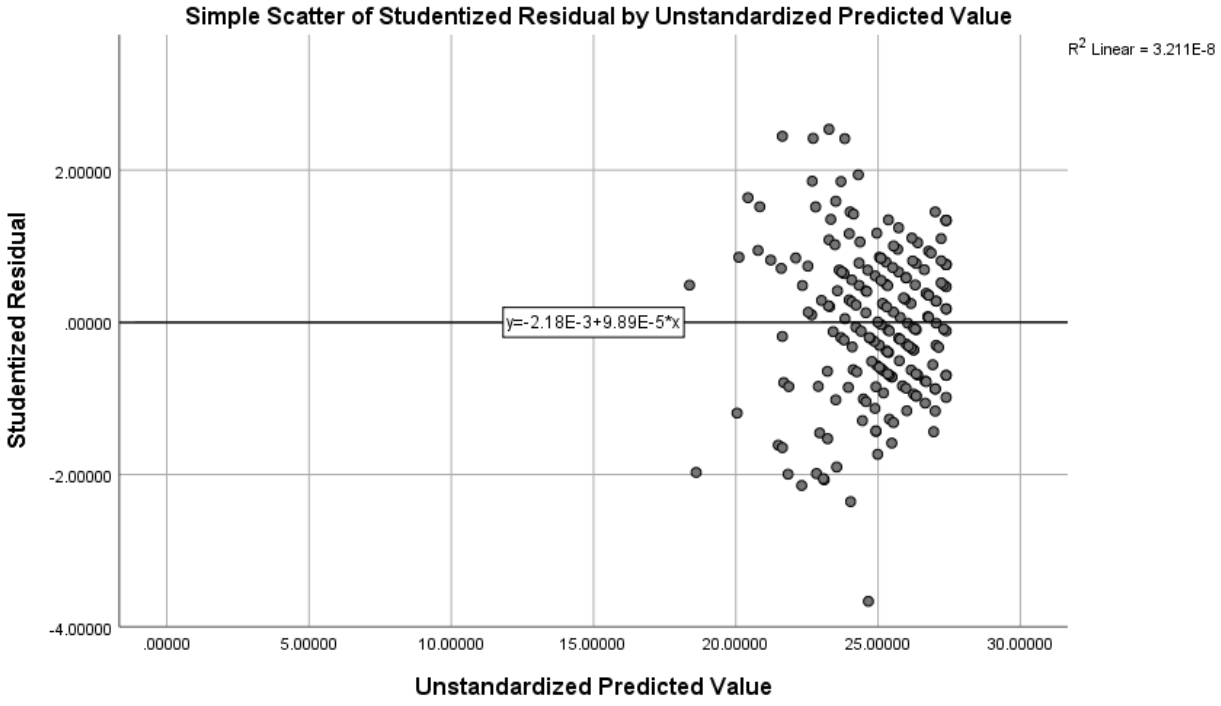


**Figure X2**

*Partial Regression Plot for Total Hope and ACE Score*

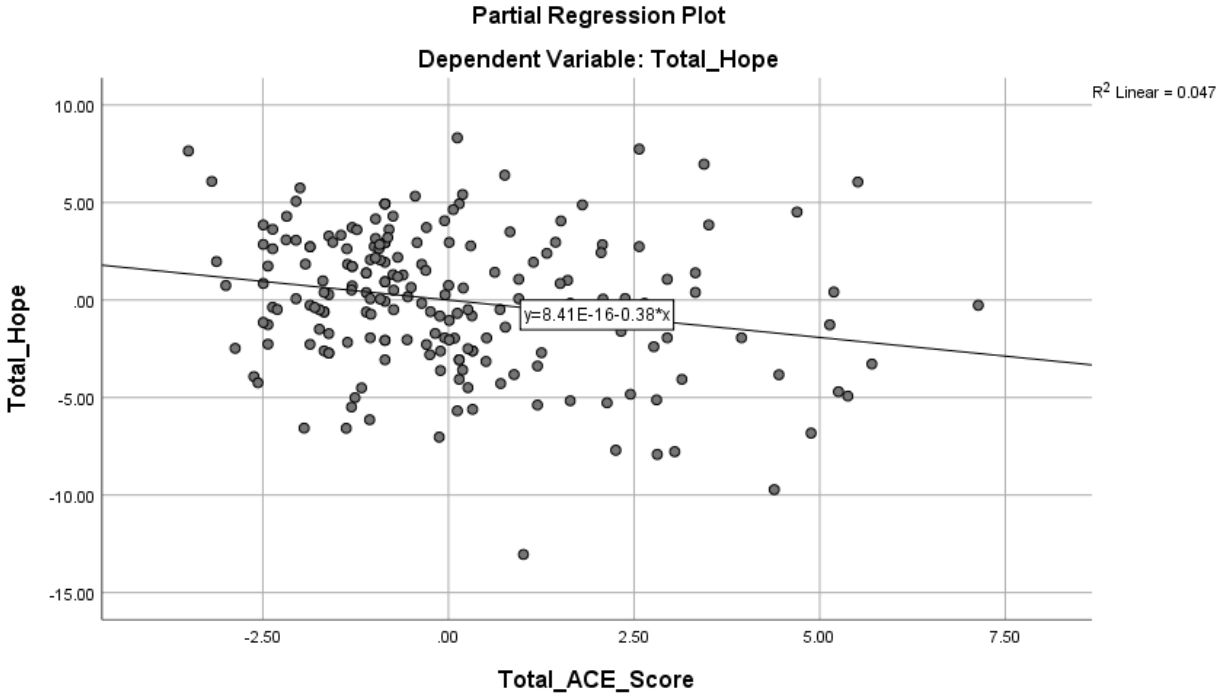


**Figure X3**

*Partial Regression Plot for Total Perceived Social Support (MSPSS) and Total Hope*

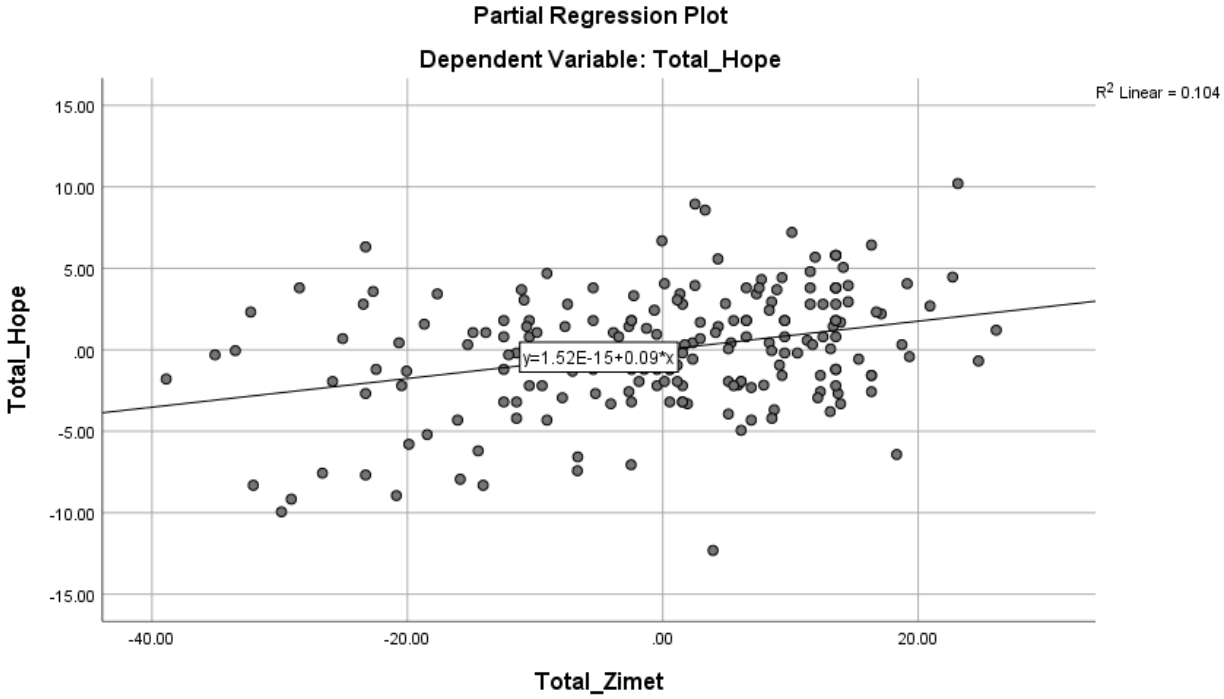


**Figure X4**

*Histogram for ACE Score, Total Hope, and Total Perceived Social Support (MSPSS)*

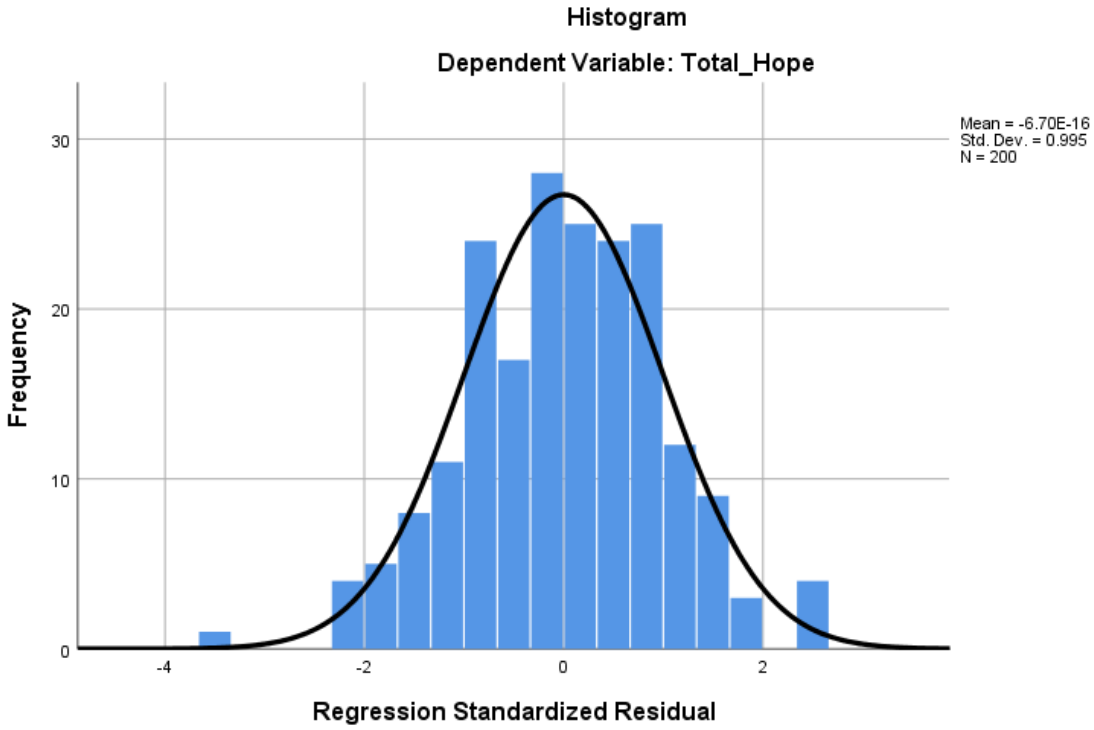


**Figure X5**

*P-P Plot of Regression Standardized Residual for ACE Score, Total Hope, and Total Perceived Social Support (MSPSS)*

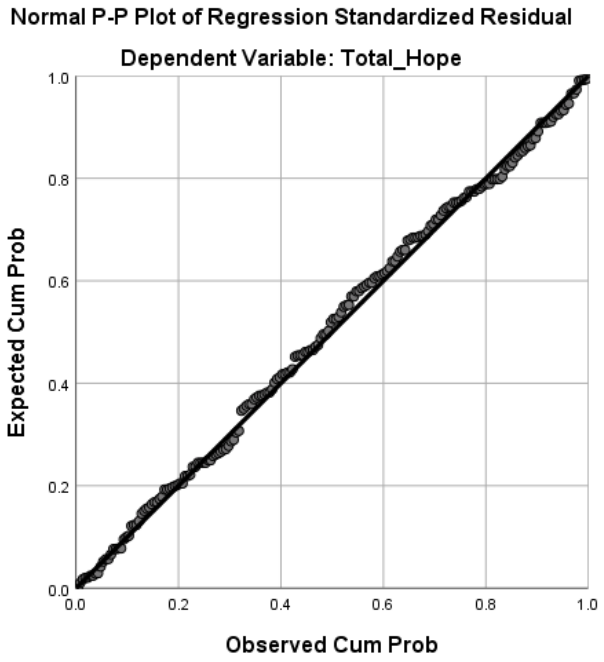


**Figure X6**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Agency Hope, and Total Perceived Social Support (MSPSS)*

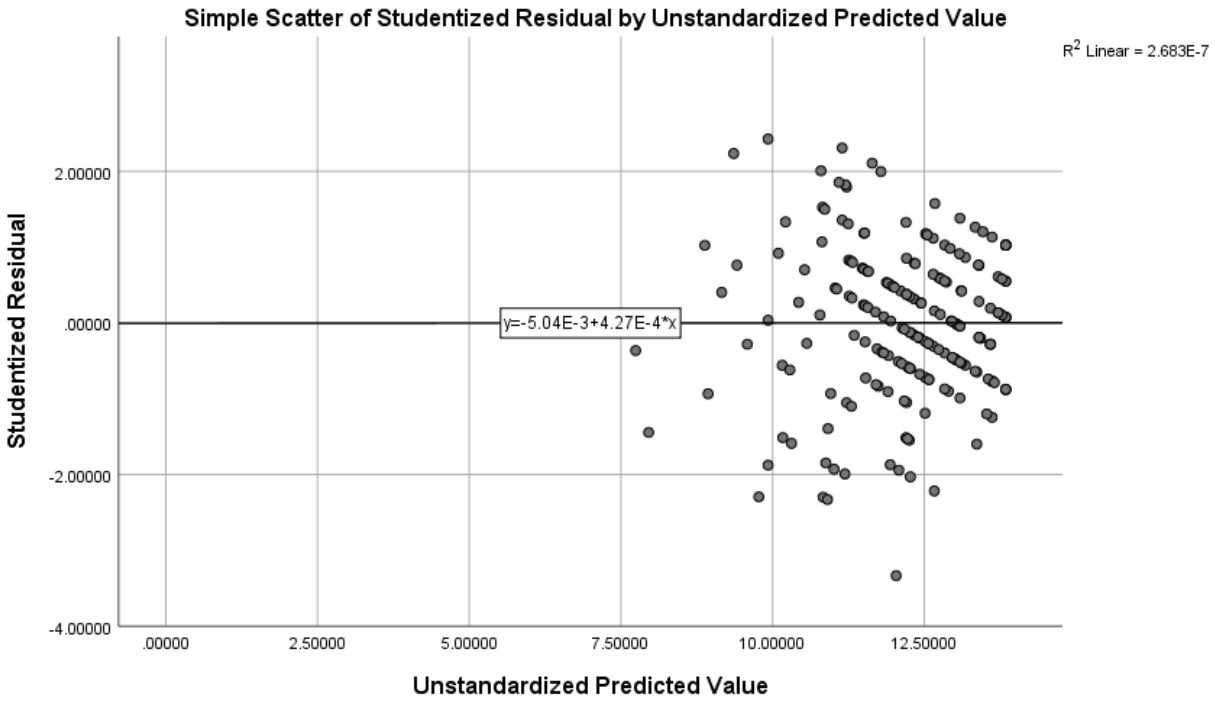


**Figure X7**

*Partial Regression Plot for Agency Hope and ACE Score*

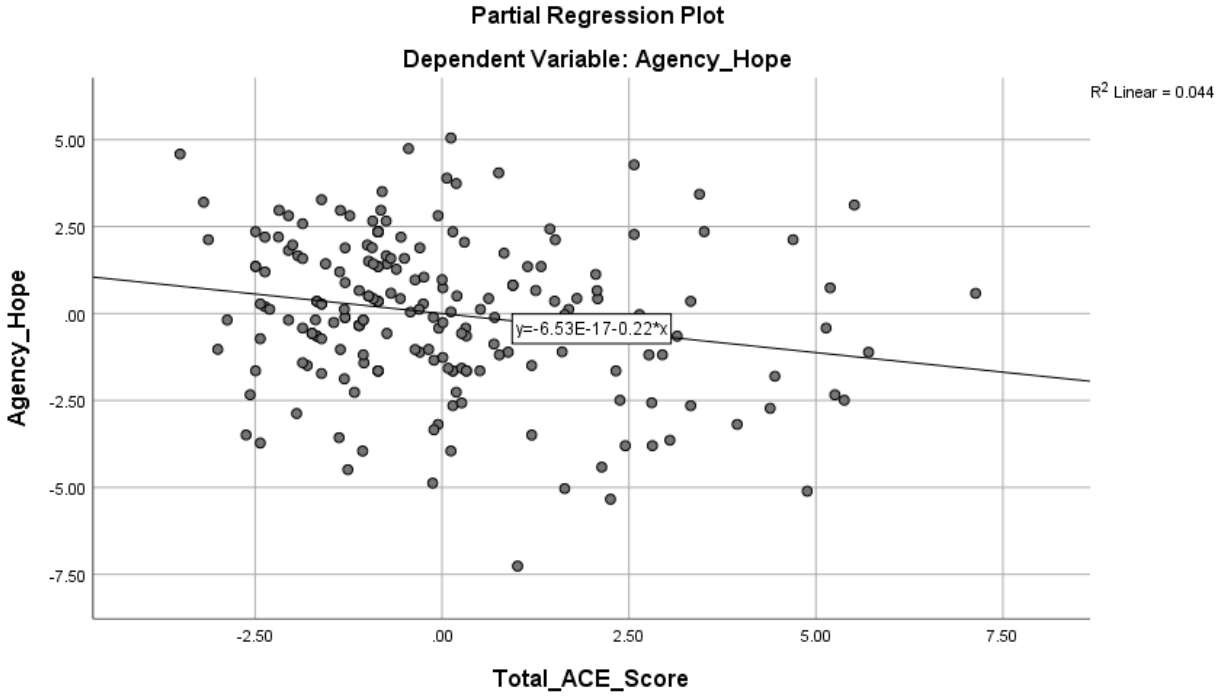


**Figure X8**

*Partial Regression Plot for Agency Hope and Total Perceived Social Support (MSPSS)*

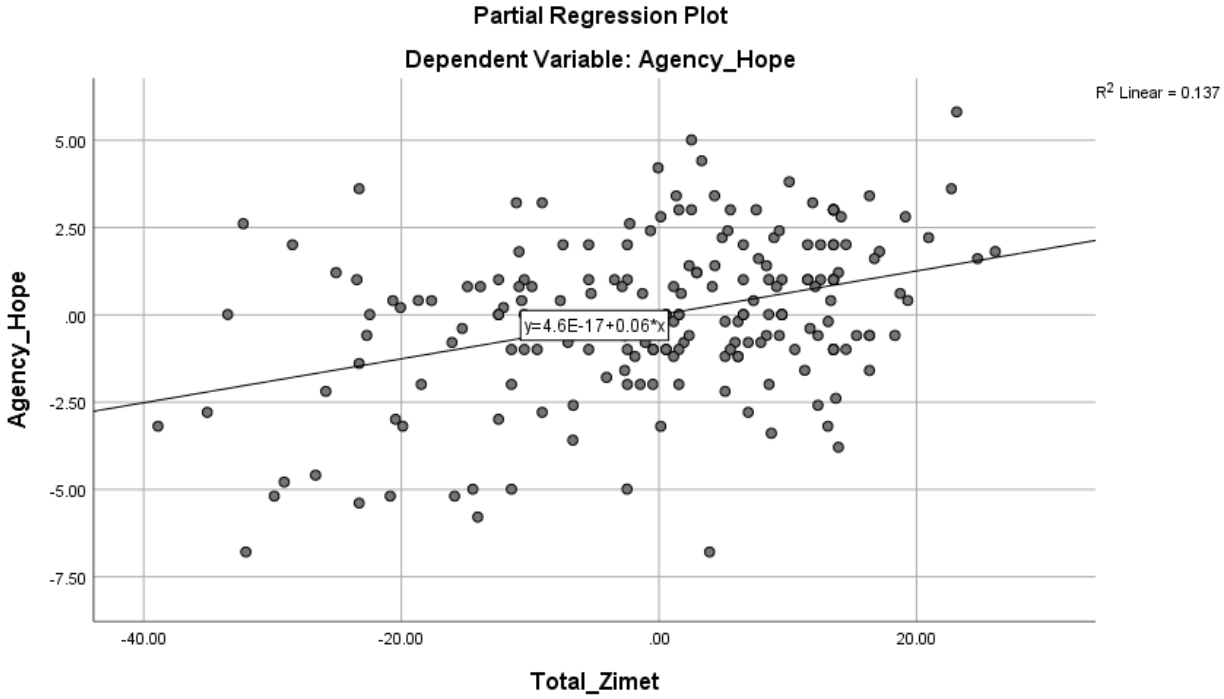


**Figure X9**

*Histogram for ACE Score, Agency Hope, and Total Perceived Social Support (MSPSS)*

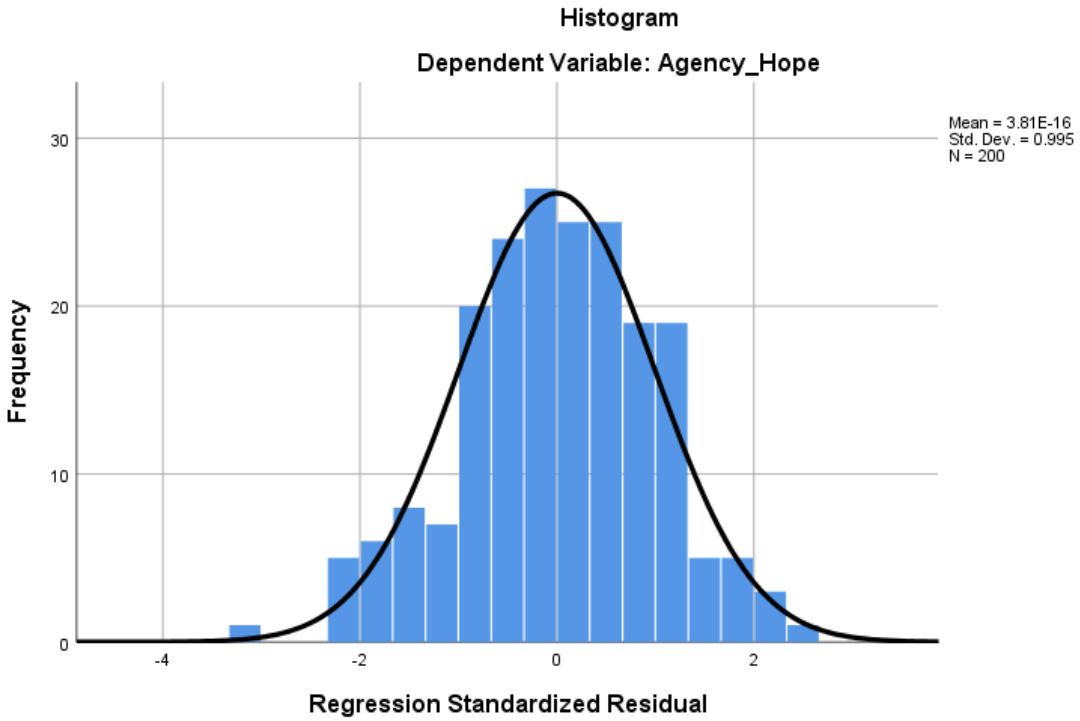


**Figure X10**

*P-P Plot of Regression Standardized Residual for ACE Score, Agency Hope, and Total Perceived Social Support (MSPSS)*

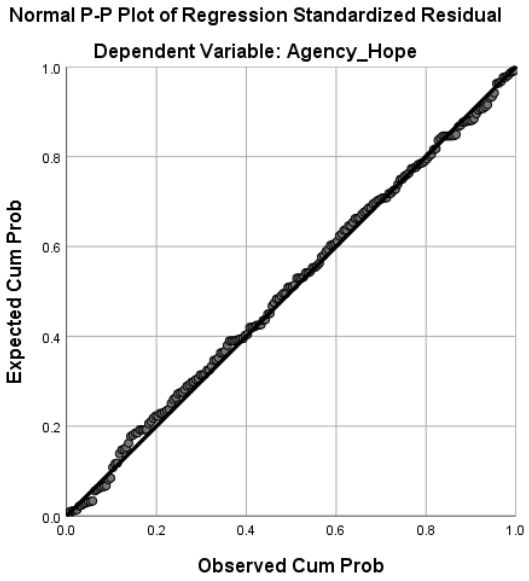


**Figure X11**

*Studentized Residual by Unstandardized Predicted Value for ACE Score, Pathway Hope, and Total Perceived Social Support (MSPSS)*

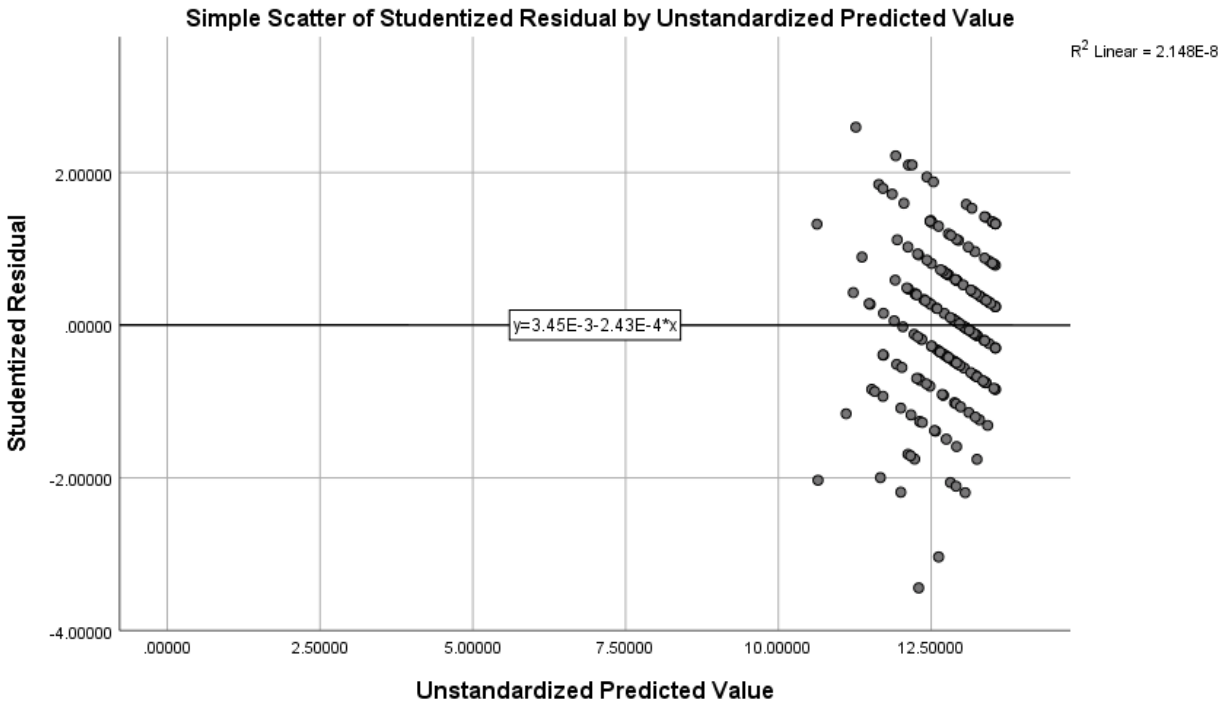


**Figure X12**

*Partial Regression Plot for Pathway Hope and ACE Score*

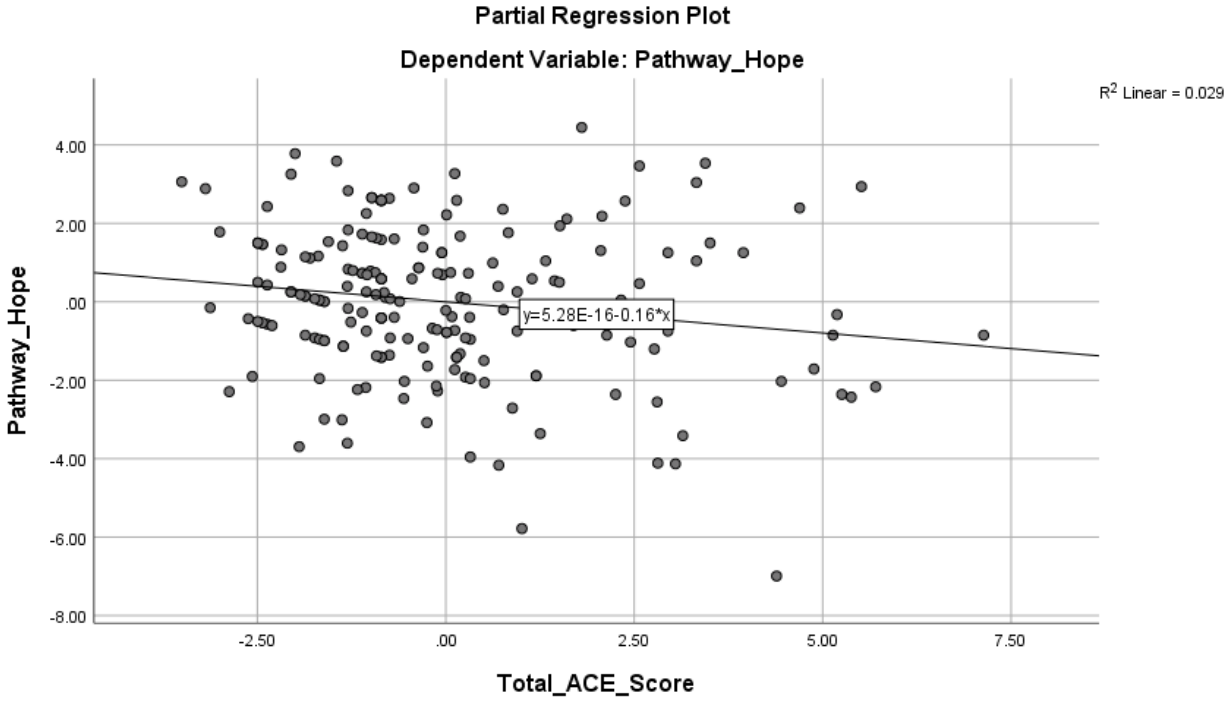


**Figure X13**

*Partial Regression Plot for Pathway Hope and Total Perceived Social Support (MSPSS)*

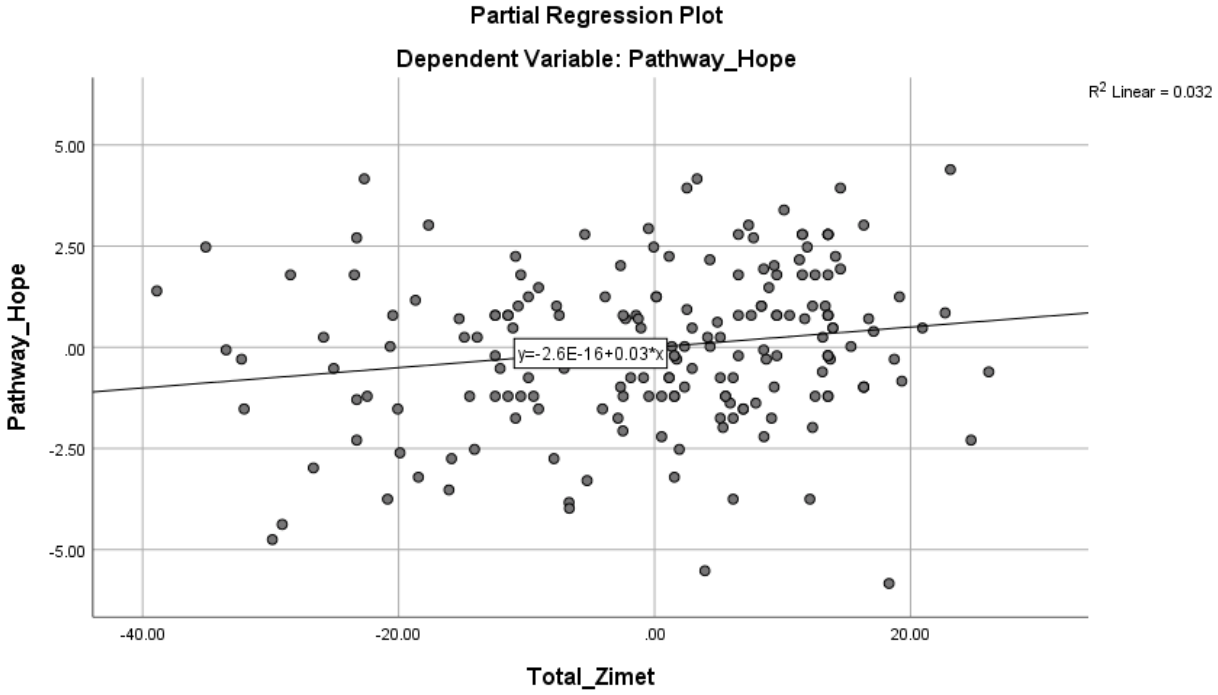


**Figure X14**

*Histogram for ACE Score, Pathway Hope, and Total Perceived Social Support (MSPSS)*

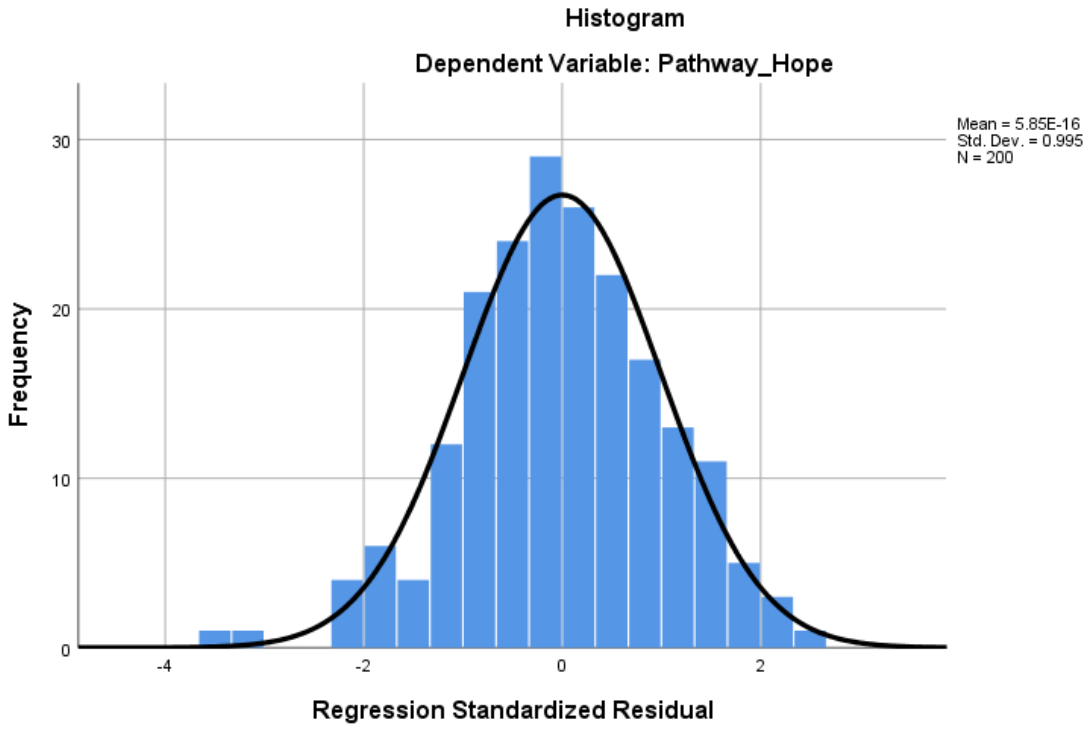
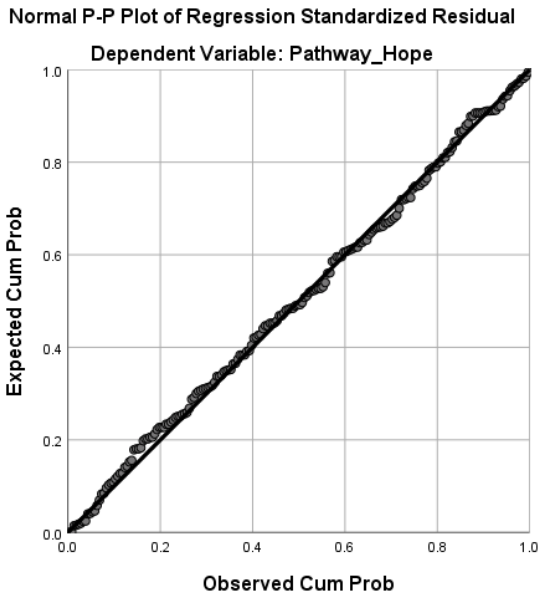


**Figure X15**

*P-P Plot of Regression Standardized Residual for ACE Score, Pathway Hope, and Total Perceived Social Support (MSPSS)*



# Appendix Y: Correlations Chart

*Correlations*

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total_ACE_Score | | | | | | | | | | | | | |
| Total_Hope | -.357** | | | | | | | | | | | | |
| Pathway_Hope | -.260** | .861** | | | | | | | | | | | |
| Agency_Hope | -.363** | .913** | .579** | | | | | | | | | | |
| Total_AR | -.442** | .571** | .452** | .553** | | | | | | | | | |
| AR_Perserverence | -.394** | .482** | .373** | .474** | .924** | | | | | | | | |
| AR_Reflective | -.344** | .480** | .351** | .489** | .870** | .768** | | | | | | | |
| AR_Negative_Emotion | -.394** | .499** | .439** | .448** | .743** | .539** | .415** | | | | | | |
| Total_Zimet | -.420** | .423** | .265** | .465** | .523** | .458** | .497** | .372** | | | | | |
| Zimet_SO | -.193** | .243** | .157* | .263** | .316** | .293** | .306** | .199** | .765** | | | | |
| Zimet_Family | -.577** | .357** | .221** | .396** | .500** | .428** | .456** | .392** | .774** | .347** | | | |
| Zimet_Friends | -0.135 | .365** | .228** | .402** | .361** | .313** | .362** | .241** | .752** | .451** | .338** | | |
| Total_MAPSS | -.402** | .331** | .212** | .360** | .450** | .401** | .380** | .367** | .596** | .471** | .513** | .369** | |
| | Total_ACE_Score | Total_Hope | Pathway_Hope | Agency_Hope | Total_AR | AR_Perserveren | AR_Reflective | AR_Negative_E | Total_Zimet | Zimet_SO | Zimet_Family | Zimet_Friends | Total_MAPSS |

| | | | | |
|---|---|---|---|---|
| r > -.5 | r > -.4 | r > -.3 | r > -.2 | r > -.1 |
| r > .5 | r > .4 | r > .3 | r > .2 | r > .1 |

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

** Correlation is significant at the 0.05 level (2-tailed).*