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A DISSERTATION APPROVED FOR

THE GRADUATE COLLEGE

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Dedication

For my wife, Ingrid, for her patience and support in all things, always know you are loved and cherished;

For my sons, Brandon and Evan, whom I am most proud. It is never too late to learn; it is never too late to pursue your hope;

For my parents, Ron and Char, for your continuous encouragement of me; your example guides me every day to do the right things, the right way, for the right reasons;

For my in-laws, Rolf and Nicki, thank you for your encouragement and kindness; I am blessed to have you as part of my family;

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Abstract

This study examines the similarities and differences between the constructs of hope and general self-efficacy by analyzing the measurement scales of Schwarzer and Jerusalem's General Perceived Self-Efficacy Scale (1995), and Snyder's Adult Hope Trait Scale (1991). The study was designed to determine if the measurement scales were distinct and whether hope scores explain variance beyond generalized self-efficacy scores when correlated with Diener's Flourishing Scale (2010) in measuring well-being. The study was administered to employees (n=267) of human service, non-profit organizations in an urban city of the Southern U.S. plains. The results of an exploratory factor analysis established that factors related to hope and general self-efficacy are separate and distinct measures, with some correlations and shared variance. After confirming these distinct constructs, a hierarchical multiple regression analysis established that hope explained variance beyond general self-efficacy when correlated with Diener's Flourishing Scale. There is evidence suggesting that hope may also have a mediating effect on the relationship between general self-efficacy and well-being. Lastly, as separate concepts have been established, the utility of hope may be a more useful variable for researchers in studies related to well-being.

Keywords: Hope, General Self-Efficacy, Self-Efficacy, Exploratory Factor Analysis, Common Factor Analysis, Hierarchical Multiple Regression, Flourishing, Well-Being

Preface

Arriving at the Research Question

The onset of COVID-19 went beyond a brief disruption of daily processes and procedures and quickly ramped into a time of prolonged discontinuity for all people. The reimaging of the simplest workplace tasks and procedures took on significant rework requiring creativity from leaders in determining how individual and organizational performance would be measured and goals obtained.

As the pandemic advanced, leaders and employees of local non-profit human services organizations became personally depleted both physically and mentally and, in some cases, emotionally. After a year many leaders and key employees were feeling the signs of burnout (Maslach et al., 1996) on the job. I began to review research on the psychological aspects of burnout and the subsequent ways to diminish or offset its effects (Maslach et al., 2001).

My research led to the Jobs, Demands and Resources model, or JDR for short. The JDR model (Demerouti et al., 2001) was designed to help explain the negative aspects of burnout, especially as it relates to performance. The model also helps explain the associated resources that organizations and leaders can produce to elevate positive performance and potentially reduce burnout. In 2007 the concept of personal resources was introduced as an enhancement to the JDR model (Xanapoloau, 2007). Personal resources are abilities and energies that individuals possess that can lead to amplified performance traits (Bakker, 2021).

My original research inquiry was to determine if the positive psychology construct of hope, as defined, researched, and measured by Snyder (Snyder et al., 1991; Snyder, 2002) had been considered as a variable and ‘fit’ within the personal resource literature and the JDR model. In reviewing the personal resources research of Xanapoloau (2007), hope was discussed as a

potential item for inclusion in the model as was psychological capital, a collection of constructs that included partial measures of hope (Luthans et al., 2006). Yet, the construct that was operationalized in the study was not hope or psychological capital but a measure of general self-efficacy using the Schwarzer and Jerusalem's General Self-Efficacy Scale (1995). I began researching general self-efficacy to better understand the concept and measurement scales established to explain the concept (Sherer et al., 1982; Schwarzer & Jerusalem, 1995; Chen et al., 2001). In reviewing the items of the Schwarzer and Jerusalem's General Self-Efficacy Scale, it appeared that the questions designed for measuring Schwarzer and Jerusalem's General Self Efficacy Scale (1995) were very close to the items that measure hope within Snyder's Adult Dispositional Hope Scale (1991).

My research interest shifted from introducing and discussing hope as a personal resource within the JDR model to understanding the concept of general self-efficacy and determining if others had observed similarities related to these scales. My inquiry led to an article from researchers at the University of Macau. Zhou and Chun Seng Kam (2016) had arrived at a similar observation regarding measurement items related to each of these scales. In response, they conducted a study entitled, "Hope and General Self-efficacy: Two Measures of the Same Construct (Zhou & Chun Seng Kam, 2016). It is from this study that I formalized my research questions regarding general self-efficacy and hope to determine if results from an additional study would produce the same or different results while possibly providing new insights and explanation to these similar concepts.

INTRODUCTION

Some researchers have called to question the close similarities that exist between the positive psychology constructs of hope and self-efficacy (Aspinwall, 2002), and specifically general self-efficacy (Zhou & Chun Seng Kam, 2016). The concepts of hope and general self-efficacy share similarities in their development specifically in relation to the concept of self-efficacy and the agentic self as introduced by Albert Bandura (Bandura, 1977, 2001, 2018) yet little research exists between the concepts. Hope and general self-efficacy are future oriented, both consider behavior in goal-directed activity (Gallagher, 2020) and grounded in expectancy-based research.

Hope is a cognitive process, anchored in goal setting, which is based on pathway and agency thinking. Pathway thinking is the perception of an individual's ability to identify routes to successful goal achievement and agency thinking is the perception of an individual's ability to motivate themselves through the identified pathway(s) toward a desired goal (Snyder et al., 1991; Snyder, 2000, 2002). Hope theory requires that agency and pathway thinking work in tandem providing the requisite motivation toward a valued goal and overcoming obstacles that may occur in route to goal achievement.

General self-efficacy is an extension of the concept of self-efficacy developed within Social Cognitive Theory. Bandura described self-efficacy, or perceived self-efficacy, as an individual's belief or judgement in their ability to organize and execute courses of action to attain specific outcomes (Bandura, 1977). Self-efficacy is based on efficacy expectations and influenced by outcome expectations and anchored in domain, situation, and task specific conditions (Bandura, 1977). General self-efficacy researchers expanded the concept of self-efficacy to establish a generalized, personality level measure of self-efficacy. These researchers

(Smith et al., 1995; Sherer et al., 1982; Schwarzer & Jerusalem 1995; Judge et al., 1998) determined that a broader dispositional scale could predict patterns of behavior or outcomes beyond the situation, domain and task specific conditions consistently advocated and defined by Bandura (Bandura, 1977, 2012).

There has been discussion and analysis regarding the similarities and differences related to hope and self-efficacy (Magaletta et al., 1999; Snyder, 2000; Schwarzer, 1994; Schwarzer & Jerusalem, 1995a; 2002; Munoz et al., 2017; Rand, 2018) with seemingly sufficient explanation. Snyder (Snyder et al., 1991; Snyder, 2000, 2001) wrote specifically about the similarities and differences of hope in relation to Bandura's conceptualization of self-efficacy. Snyder also referenced a dispositional self-efficacy scale that was different from Bandura's definition, although Snyder did not specifically address the term general or generalized self-efficacy (Snyder, 2002). In turn, general self-efficacy researcher Ralf Schwarzer recognized Snyder's work with hope and acknowledged the similar context of their respective approach in explaining how individuals gain the requisite energies and motivations in considering future based outcomes (Schwarzer, 1994). Yet, little context and investigation have been conducted around the similarities and differences of the concepts of general self-efficacy and hope.

In addition to the conceptual similarities of hope and general self-efficacy there are similarities in how these measurement scales are designed and operationalized. The most employed hope scale is the Dispositional Adult Hope Scale (Snyder et al., 1991) that consists of a bidimensional measure related to the concepts of agency and pathway thinking. This measure was originally designed as a 12-item, bidimensional scale, where four items represented hope-agency, four items represented hope-pathways, and four items were included as filler (Snyder et al., 1991). The expansion of Bandura's original self-efficacy concept to a generalized version has

led to the creation of multiple general self-efficacy measurement scales (Sherer et al., 1982; Tipton & Worthington, 1984; Schwarzer & Jerusalem 1995; Chen 2001). The Dispositional Adult Hope Scale (Snyder et al., 1991) and Schwarzer and Jerusalem's, General Self-Efficacy Scale are operationalized most often in current research when studies employ these concepts.

As mentioned, there is little research comparing the conceptual and operational aspects of hope and general self-efficacy. One specific article (Zhou & Chun Seng Kam, 2016) has analyzed the measurement of the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) and the Dispositional Adult Hope Scale (Snyder et al., 1991). Zhou and Chun Seng Kam (2016) determined that the two instruments measure the same construct and have called for clarification or consolidation of these constructs. Magaletta & Oliver (1999) conducted a common factor analysis with results indicating that hope and general self-efficacy were separate measures. Munoz (2017) conducted a principal components analysis on hope and general self-efficacy, as described and measured by Sherer et al. (1982), with results indicating that hope and general self-efficacy represent distinct factors that measure separate constructs. Due to the similar item construction of general self-efficacy and hope as well as differing results from previous studies, there is a need to further distinguish how these concepts may or may not be related.

The aim of this study is to provide a clearer distinction between hope and general self-efficacy. As mentioned, there have been some explanations and studies that specify the similarities and differences in Bandura's self-efficacy, general self-efficacy, and hope (Bandura, 1977, 2006, 2018; Snyder et al., 1991; Snyder, 2000, 2002; Schwarzer & Jerusalem, 1995a: Magaletta & Oliver, 1999; Rand, 2018; Munoz et al., 2017). There is a need to revisit the models of hope and general self-efficacy to provide additional understanding and differentiation of these concepts.

In addition, there is a need to determine if the findings in previous studies (Magaletta & Oliver, 1999; Zhou & Chun Seng Kam, 2016; Munoz et al., 2017) return a similar or different result when comparing hope and general self-efficacy. This study employed an exploratory factor analysis to determine if similar or different results exist in item construction for the Snyder Hope Scale (1991) and Schwarzer and Jerusalem's General Self Efficacy Scale (1995). Also, a hierarchical multiple regression analysis was conducted to provide further evidence of similarities and differences between the scales in relationship with other concepts important to applied social research.

This study looked to provide insight and understanding to the following research questions;

- Do the constructs of general self-efficacy (GSE) and hope theory explain the same cognitive phenomenon in positive psychology?
- Do the measurement scales of general self-efficacy as described in the Schwarzer and Jerusalem General Perceived Self-Efficacy Scale (1995) and Snyder's Adult Hope Trait Scale (1991) measure the same construct?
- If the measures are sufficiently distinct, will Hope scores explain variance beyond generalized self-efficacy scores when correlated with Diener's Flourishing scale (2010) in measuring well-being?

LITERATURE REVIEW

Hope

The theory and construct of hope used throughout this study is based on the research and development of C. R. Snyder. According to Snyder, hope is "a cognitive set that is based on a reciprocally derived sense of successful agency (goal-directed determination) and pathways (planning to meet goals)" (Snyder et al. 1991, p. 571). In addition, Snyder offered a similar definition of hope in the same year stating, "Hope is a positive motivational state that is based on an interactively derived sense of successful (a) agency (goal-directed energy), and (b) pathways (planning to meet goals)" (Snyder, Irving, & Anderson, 1991, p.287). Snyder's research provided insights into how individuals operationalize the cognitive processes and assessments required to establish effective routes toward goals and the sustained motivation and energy required to sustain actions to achieve goals. Snyder's theory of hope was more than an evaluation of behavior likely leading to an outcome, hope is an iterative process that includes both agency and pathways thinking working toward goal attainment (Snyder et al., 1991).

Central to Snyder's theory is that hope is a goal-focused framework, and that goal setting is a fundamental cognitive process that directs and guides an individual's actions (Snyder et al., 1991; Snyder, 2002). The concept of hope is based on how an individual perceives their ability to establish, envision, and sustain the requisite energy to attain their desired goal. Snyder defined these cognitive processes related to goals as agency thinking (having the will) and pathway development (establishing the ways) to meet an individuals' desired goal (Snyder et al., 1991; Snyder, 2000, 2002). This 'bifaceted' (Magaletta & Oliver, 1999) process works to sequence thoughts to action that, in turn, advances behaviors toward goal achievement. As mentioned, goals are the target for this mental sequencing and can be considered in two

generalized ways, positive or 'approach' goals or avoidant goals where an individual plans for a future state they do not want to happen. In either goal scenario, hope related goals must be valued by the individual to provide requisite motivation and energy toward goal achievement (Snyder, 2000, 2002).

Hope requires both agency thinking and pathways thinking, working together that bolsters a belief toward goal attainment (Snyder et al., 1991; Snyder, 1995, 2000, 2002). Agency thinking is the motivational component within the theory that provides the requisite energy to start and continue the pathway development and action process. Agency is the mental willpower to persist along the pathway continuum and direct motivation to overcome real or perceived blocks toward goal attainment (Snyder et al., 1991; Snyder, 2000, 2002). Pathways thinking consists of an individual establishing a mental map that links perceived ability to reach a goal with the formidable way to achieve the goal. The process of planning and establishing a route by conceiving the steps required to attain a goal is fundamental to hope theory (Snyder et al., 1991; Snyder, 2000, 2002). An absence of either agency or pathways thinking in the goal process can diminish an individual's desired goal (Feldman & Snyder, 2005). Hope was theorized to operationalize both agency and pathway thinking as these concepts work in concert to reinforce the decision-making process toward goal achievement and can serve to influence future goal-setting processes (Snyder, 2002).

Snyder established hope as both situational and trait-like or dispositional and established multiple psychometric scales to measure hope, The Adult Trait Hope Scale (Snyder et al., 1991), the State Hope Scale (Snyder et al., 1996) and the Children's Hope Scale (Snyder et al., 1997). The Trait Adult Hope Scale (Snyder et al., 1991) or Dispositional Adult Hope Scale was proposed to measure the theoretical constructs developed in the hope theory and represents the

scale most often used in research studies. The original scale was intended for individuals 15 years of age and older and consisted of 12 items, four items were specific to assess the concept of agency to, "…tap the sense of successful determination in relation to each person's goals generally." (Snyder et al., 1991, p. 572) and four items specific to assess the concept of pathways to determine, "people's cognitive appraisals of their ability to generate means for surmounting goal-related obstacles and reaching goals." (Snyder et al., 1991, p. 572). The final four items were considered as filler with no bearing on the scale. The filler items were found to not be substantive when employing the scale and can be eliminated from the measure using only the eight items specific to agency and pathways thinking. The scale was determined to have internal consistency (.74 - .84) and acceptable test-retest reliability from the original study. The Dispositional Adult Hope Scale was evaluated extensively by Hellman et al., (2013) reviewing over 74 articles reporting an average internal consistency measure as $\alpha = .082$ that did not vary relative to sample characteristics.

The Dispositional Adult Hope scale was designed as a two-factor, bidimensional scale consisting of four agency items and four pathways' items. All scores (eight-items) were combined to establish a singular or general hope score. The scale includes an 8-point Likert measurement scale ranging from 1 (definitely false) to 8 (definitely true) where, higher scores on the general hope scale indicate a higher level of hope (Snyder et al., 1991). Snyder encouraged the use of separating the agency and pathways items for additional analysis. Support for a two-factor hope model was confirmed by Babyak et al., (1993) where findings indicated that agency and pathways are highly related yet do not converge on a single factor. Roesch and Vaughn (2006) reported similar results that a two-factor representation of the adult hope scale performed significantly better than a unidimensional model. In addition, a two-factor model was confirmed

by Gomez et al. (2015) as a good fit for their analysis over a one-factor model. Yet, Gomez et al., (2015) noted the presence of high covariance between agency and pathways items and made recommendations to consider these correlations in future studies.

Although Snyder's original scale development established a bidimensional model, some researchers have questioned this finding. Brouwer et al., (2008) analysis determined the presence of high correlations and overlap within the items. It was noted that the pathways items provided some variance from the agency items, however, their determination stated the model was unidimensional, and that analysis did not support a two-factor model. Similarly, Vinueza-Solorazano et al. (2023) completed a confirmatory factor analysis that determined a unidimensional measure was present and better suited for the balance of their study. Although the findings indicated that the hope measure was unidimensional, the results of their analysis also determined that hope acted as a protective factor that promoted work engagement and prevented burnout. Zhou and Chun Seng Kam (2016) reported findings that agency and pathway items established as a two-factor model yet determined that a bidimensional model was not significantly different from a unidimensional model. Through the principal of parsimony, they determined that the Adult Hope Scale was a single factor, unidimensional measure.

Hope is considered a motivational factor and individuals that report high scores from the scale are associated with goal achievement. These individuals can often generate distinctive ways to advance their goals and establish multiple avenues toward goal attainment. High hope individuals can reimagine a goal more effectively producing alternative routes to a desired outcome. Low hope thinking individuals, in contrast, do not readily identify goals and can experience difficulty developing routes toward successful goal completion (Snyder et al., 1991, 2000, 2002). In addition to measuring hope, Snyder and other researchers have found that hope

can be a significant predictor in many concepts important to advancing the understanding of how an individual's thinking impacts their motivations and behaviors. Hope is associated with predicting psychosocial factors, such as well-being (Magaletta & Oliver, 1999), performance, coping, educational outcomes, athletics, to name a few (Snyder, 2000, 2002).

Self-Efficacy

Most discussions referencing the concept of self-efficacy stem from the research of Albert Bandura (1977). Self-efficacy is one of the key components embedded within social cognitive theory (Bandura, 1977, 1986, 1997). A discussion of key concepts related to social cognitive theory will narrow the construct of self-efficacy or perceived self-efficacy.

Social cognitive theory incorporates a broad, interacting framework that Bandura describes as a triadic reciprocal causation, meaning individuals are inclined to pursue tasks, goals, solve problems, and alter behavior when they believe their actions can lead toward a successful outcome. The theory explains how individuals incorporate observational learning, the impact of social influences, and cognitive or personal factors in explaining how an individual's behavior is determined, influenced, and altered (Bandura, 1986).

Bandura founded social cognitive theory based on the concept of human agency and an agentic perspective (Bandura, 1986, 1989, 2001, 2018). Agency refers to how individuals influence and shape the outcomes they desire through their own actions (Bandura, 1982, 1989, 2001, 2018) and is a key concept defining efficacy expectations and self-efficacy. Bandura described human agency as having four properties intentionality, forethought, self-reactiveness, and self-reflectiveness (Bandura, 2001, 2018). Intentionality is the idea that individuals form action plans toward outcomes. Forethought is the idea that individuals can guide and motivate

themselves through goal aspirations, planning actions, and outcome expectations. Self-reactiveness refers to how individuals evaluate their behavior according to the internal standards established by the individual (Bandura, 1989, 2001, 2006b, 2018). The fourth property, self-reflectiveness, is an individual's capacity to reflect on past experiences, whether positive or negative. Self-reflecting can impact an individual's belief that can influence the kind of goals that an individual sets for themselves and determine the commitment toward an outcome (Bandura, 1989, 2001, 2006b, 2018).

The concept of social cognitive theory based on the agency perspective helps explain several underlying cognitive factors that are instrumental to influencing behavior. Two key, yet separate factors are the constructs of efficacy expectancy and outcome expectancy. Efficacy expectations (self-efficacy or perceived self-efficacy) is a belief or confidence that one can perform a specific action or behavior that will likely lead to a desired outcome or goal. While outcome expectations refer to an evaluation of possible outcomes by the individual if a specific task or goal is pursued (Bandura, 1977). Bandura specifically differentiated these two concepts establishing that an individual can believe that their actions could produce a particular outcome yet have no confidence they can execute the activities required to meet the outcome (Bandura, 1977). In addition, Bandura's definitions and explanations of self-efficacy are related to situation specific or domain specific situations and tasks (Bandura, 1977, 1997, 2015).

Self-efficacy is a central concept of social cognitive theory and influences how individuals think, feel, motivate and move to action. Bandura defined self-efficacy as "People's judgement of their capabilities to organize and execute courses of action required to attain designated types of performance. It is not with the skills one has but with the judgment of what one can do with whatever skills one possesses" (1986, p. 391). More succinctly, Bandura stated

that "self-efficacy refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood and Bandura, 1989, p. 408). Bandura stated that self-efficacy is developed in four areas, through mastery experiences, observing others as they perform similar tasks or goals, receiving encouragement from others, and how an individual reacts to challenges (Bandura, 1977, 2012).

An additional defining concept related to self-efficacy is how self-efficacy beliefs can vary when considering whether to pursue a task or goal. The first consideration is determining the magnitude or level of difficulty that a particular task or goal will take to accomplish. The second belief is assessing the strength or level of certainty that a particular task or goal can be accomplished. And third, evaluating the generality or duration in how long a particular task or goal will take to accomplish and determine if the requisite persistence exists in relation to the magnitude and strength to see accomplish the goal (Bandura, 1977, 1997). These concepts of self-efficacy are continually evaluated along with potential outcome expectancies to determine if an individual will move from cognition to action in pursuit of a task or goal (Bandura, 1977). In addition, these three dimensions position self-efficacy as task-specific (Bandura, 1977, 2001, 2006; Chen, 2001).

Soon after the development of self-efficacy, researchers look to expand the construct of self-efficacy from situational or domain specific to a broader, trait-based concept of generalized self-efficacy. This concept theorized that perceived self-efficacy could be aggregated across experiences and domains bolstering an individual's confidence and belief in the ability to manage and cope successfully in current or future experiences (Shelton, 1990). Bandura maintained that self-efficacy was not a generalized personality trait and argued often against measuring self-efficacy as a personality or dispositional trait that moved the construct beyond a

specific task or domain (Bandura, 1977, 1997, 2012, 2015). Bandura recognized that an individual creates mastery of a particular task, situation or within a domain and that individuals recreate successful outcomes through experience. He stated that self-belief and mastery could "… instill a more generalized sense of efficacy" (Bandura, 1977, p. 194), yet did not advocate for a generalized position for self-efficacy as he believed self-efficacy was better characterized as a state-oriented construct. (Bandura, 1977). Some researchers have even suggested that the expansion of generalized self-efficacy has distorted the original intent of self-efficacy as the interpretation of generality may be incorrect (Maibach & Murphy, 1995).

A significant criticism of self-efficacy theory relates to the construct separation between perceived self-efficacy and outcome expectancy. Bandura continually stated that self-efficacy is the primary predictor of behavior, and that self-efficacy causally influences expected outcomes of behavior. However, Bandura does not provide for outcome expectancy as a causal influence on an individual's self-efficacy (Bandura, 1986, 2006, 2012). Williams (2010) cited researchers' numerous studies that showed evidence that outcome expectation can establish a causal influence with self-efficacy and questioned the validity of the self-efficacy model. Bandura did not capitulate to this point and continued the position that self-efficacy causally influences outcomes, yet outcomes do not causally influence self-efficacy (Bandura, 2006b).

The figures below provide a visual representation of how Bandura represented the cognitive process with self-efficacy and social cognitive theory. Figure 1 is an excerpt taken from Bandura's 1977 seminal article entitled, *Self-Efficacy: Toward a Unifying Theory of Behavioral Change* visualizing how he perceived the relationship between efficacy expectations and outcome expectations (Bandura, 1977, p. 193).

Figure 1. *Efficacy Expectations as a Mechanism of Operation*

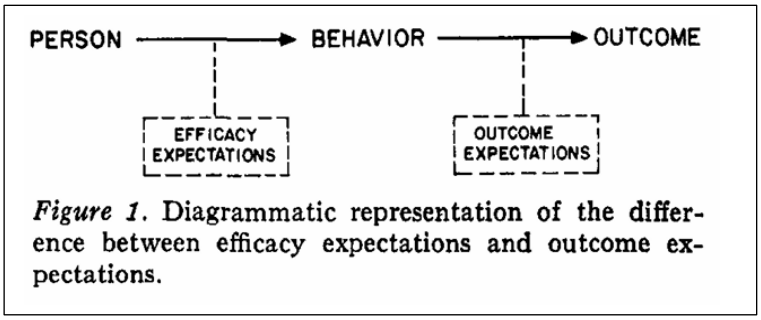
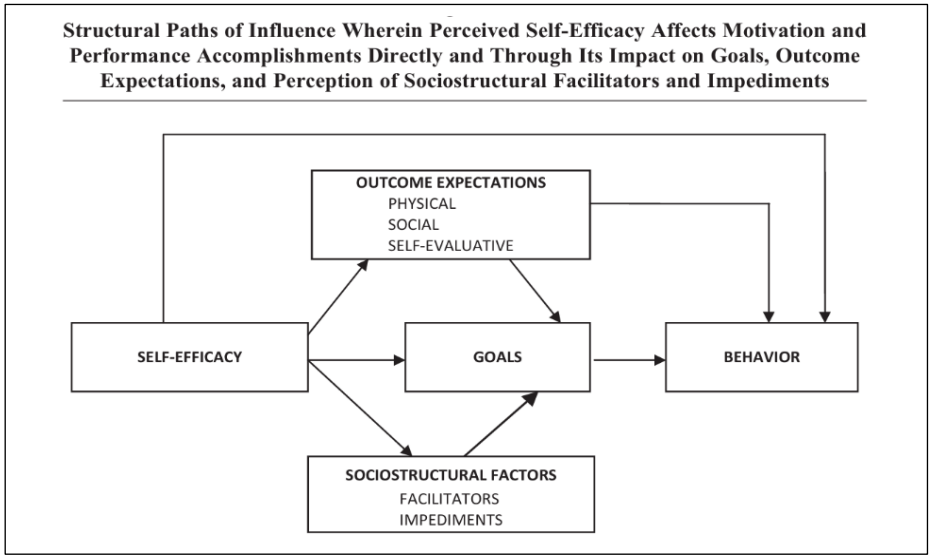


Figure 1. Diagrammatic representation of the difference between efficacy expectations and outcome expectations.

Figure 2 provides a visual representation taken directly from Bandura's 2012 article*, On the Functional Properties of Perceived Self-Efficacy Revisited*, of social cognitive theory and illustrates how self-efficacy affects and impacts the concepts of outcome expectations, goals, and sociostructurally factors on behavior (Bandura, 2012, p.14). Note that both models indicate a one-way model where self-efficacy determines behaviors.

Figure 2. *Social Cognitive Theory: Theoretical Scope*



General Self Efficacy

The development of Bandura's social cognitive theory, and specifically, the addition of self-efficacy (Bandura, 1977), sparked researchers to theorize self-efficacy, or perceived self-efficacy, as a broad, global, trait-based concept. General self-efficacy was posited to expand elements of Bandura's situational, domain specific definition to include a generalized, trait-like construct. Researchers of generalized or general self-efficacy consistently acknowledge the origins of general self-efficacy as derived from Bandura's research and recognized the distinct differences from their generalized interpretation. Most often the explanation includes, acknowledging social cognitive theory and a brief explanation of the two key specific constructs of the model, efficacy expectancies and outcome expectancies, followed by a deeper description of self-efficacy (Tipton & Worthington, 1984; Shelton 1990; Schwarzer et al., 1997). The primary focus of general self-efficacy is tied to efficacy expectancies that lie within Bandura's model as opposed to the separate construct of outcome expectancies and other factors that define social cognitive theory.

Bandura centered perceived self-efficacy as an individual's confidence in their ability to perform the necessary actions to achieve a specific outcome or goal (Bandura, 1977; Shelton, 1990). General self-efficacy advocates believe that the mastery, effort, and success drawn from the self-efficacy of one specific endeavor can create a positive aggregated effect within an individual. The success that is experienced in one endeavor, or domain, can then influence an individual's belief regarding their expectancies on subsequent new goals or tasks. This belief extends not only within a similar domain but can be extrapolated toward the belief of any desired outcome (Shelton, 1990). General self-efficacy is generally described in terms of positive influence for future endeavors, yet instances where efficacy expectations fall short of outcome

expectancies also influence an individual's perception of future efficacy. Instances where expectations are not met can influence the broad, dispositional aspect of generalized self-efficacy. In essence, success in one area can influence the belief that success is obtainable in another area of life and perceived self-efficacy is reinforced for future endeavors (Chen et al., 2001; Schwarzer & Jerusalem, 1995; Sherer et al., 1982; Shelton, 1980; Tipton & Worthington, 1984). Shelton (1990) referred to the accumulation of these positive reinforcements as 'credits' for the self where these collected successes can be applied to future tasks or goals.

There is no consensus definition for general self-efficacy. Explanations of the concept are most often based on extensions of the underlying explanations from Bandura. Sherer et al. (1982) state that, "An individual's past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations. These generalized expectancies should influence the individual's expectations of mastery in the new situation" (p. 664). Shelton (1990) categorized Sherer et al. (1982) points as; (a) generalized self-efficacy is a composite of all past success and failure experiences in an individual's life, (b) individual differences exist in general self-efficacy expectations, and (c) an individual's general self-efficacy should affect the person's mastery expectations in new situations. Schwarzer et al., (1997) refers to a broad, consensus description of general self-efficacy as a, "…global confidence in one's coping ability across a wide range of demanding or novel situations" (p. 71). Rimm & Jerusalem (1999) extended this definition of general self-efficacy to include, "… difficult situations (that) reflects a broad and stable confidence in dealing effectively with rather diverse stressful situations" (p. 330). A simplified definition of generalized self-efficacy came from Judge, Erez, and Bono (1998) who stated that "Generalized

self-efficacy represents individuals' perceptions of their ability to perform across a variety of situations" (p. 170).

By broadening the original intent of self-efficacy, general self-efficacy researchers have shifted research opportunities into the realm of personality and dispositional measurement with the purpose of predicting general behaviors or outcomes (Smith, Wallson, & Smith, 1995). According to Chen et al. (2001), "General self-efficacy captures differences among individuals in their tendency to view themselves as capable of meeting task demands in a broad array of contexts" (p. 63). Schwarzer, and other generalized self-efficacy researchers advocate for a broader, standardized measure of self-efficacy when predictions or correlations of broader, self-assessing constructs such as, well-being, depression, or burnout is presented (Schwarzer et al., 1997). However, Schwarzer has consistently supported using domain-specific measures of self-efficacy that align with Bandura's definitions whenever possible (Schwarzer, 1994; Luszczynska, Scholz & Schwarzer, 2005).

Researchers have established several self-assessing, dispositional scales to measure the general self-efficacy construct. Early research included measurement instruments from Sherer et al., entitled the Self-Efficacy Scale (1982) and Tipton and Worthington (1984) introduced the General Self-Efficacy Scale two years later. Schwarzer and Jerusalem established a measure of generalized self-efficacy as early versions in 1981 as a 20-item scale and later reduced this scale to a 10-items version used today entitled the General (Perceived) Self-Efficacy Scale (Jerusalem & Schwarzer, 1992; Schwarzer & Jerusalem, 1995; Schwarzer et al., 1997). An additional version of a general self-efficacy scale is attributed to Chen et al. (2001). The New General Self-Efficacy Scale was designed to address what Chen and associates viewed as psychometric issues

related to low content validity and multicollinearity in other general self-efficacy scales, specifically, measurement related to Sherer's et al., (1982) Self-Efficacy Scale.

The most referenced and operationalized measurement tool for generalized self-efficacy is the General Self-Efficacy Scale constructed and modified by Schwarzer & Jerusalem (1995). The scale has originally designed in German and was translated to English in 1995. The scale has been translated and validated in over 25 languages (Scholz et al., 2002). The scale was designed as a self-administered tool for those over 12 years old. This 10-item, unidimensional scale was designed to assess a general sense of perceived self-efficacy to predict how individuals cope with daily stresses and adapt to demanding life events (Schwarzer & Jerusalem, 1995). The psychometric properties have been tested numerous times across multiple translations with Cronbach's Alpha ranging from .76 to .90 (Schwarzer & Jerusalem, 1995). Results from a 2002 study evaluated the translated scale across 25 countries. These findings indicated that measures of internal consistencies, item-correlations, and factor loading established that the scale were reliable, homogeneous, and unidimensional across the countries (Scholz et al., 2002). An additional study in 2005 suggested that general self-efficacy, as defined and measured by Schwarzer and Jerusalem, can be considered a universal construct, meaning that it is possible to assess all individuals' broad sense of personal competence to deal effectively (or not) with stressful situations (Luszczynska, Gutierrez-Dona, & Schwarzer, 2005). However, this concept of general self-efficacy as a universal construct has been challenged in a study by Barahona et al., (2018).

Although the analysis from several studies indicates support for Schwarzer and Jerusalem's General Self-Efficacy Scale as a single-factor, unidimensional scale (Schwarzer & Jerusalem, 1995; Scholtz et al., 2002; Waraich & Chechi, 2017; Lazic, Jovanovic, Gavrilov-

Jerkokic, 2021), there are some studies that have questioned the one-dimensionality of the of the measure. Zhou (2016) reported producing a two-factor model through factor analysis and confirming the findings through confirmatory factor analysis. An additional study aimed at establishing the General Self-Efficacy Scale for Korean immigrants reported mixed findings, indicating support for a two-factor model through an exploratory factor analysis, but later accepting a one-factor model due to unreliable measures related to the two-factor model (Kim, Jiang, & Dee, 2023). An additional international study has also questioned the unidimensional construct across several countries and raise concerns on the measurement of items contained within the General Self-Efficacy Scale (Barahona et al., 2018).

Support for the effectiveness of other general self-efficacy scales as sound psychometric tools have been reported for Sherer's General Self-Efficacy Scale (1982) and Chen's New General Self-Efficacy Scale (2000). A study by Scherbaum, Cohen-Charash, & Kern (2006) compared the scales of Sherer, Chen, and Schwarzer and Jerusalem's General Perceived Self Efficacy Scale (1995) determining that each scale showed reliable measures.

As mentioned previously, Bandura did not support a generalized, global measure of perceived self-efficacy, however he acknowledged some misconceptions that self-efficacy should only be measured as task specific. He stated that wide ranges of activity could be assessed yet, was clear that assessments should occur within domains (Bandura, 1977, 1980, 2012). In addition, Bandura did not acknowledge the concept of perceived self-efficacy as dispositional or trait-like (Bandura, 2012, 2018), clearly stating that, "Perceived self-efficacy is not a global trait, but a differentiated set of self-beliefs linked to distinct realms of functioning" (Bandura, 2018, p. 133).

GSE and Hope

The constructs of general self-efficacy and hope are similar, and several broad characteristics of hope and general self-efficacy can be described as trait-based, goal-oriented, generalizable across situations, places an emphasis on cognition, self-focused, and includes psychometrically sound measures of the respective constructs. Both constructs are based on an agentic perspective and positive expectancy, meaning that individuals play an active role in aligning and directing their thoughts toward action while considering external influences and challenges of a desired goal or outcome (Shelton, 1990; Snyder et al., 1991; Schwarzer, 1994; Schwarzer & Jerusalem, 1995a; Rand 2018). However, these broad characteristics do not make these constructs synonymous or redundant.

Many of the similarities and discrepancies between hope and general self-efficacy are linked to self-efficacy as defined by Bandura. Since general perceived self-efficacy is an expansion of Bandura's original concept based on efficacy expectancy, many of the differences, and similarities, of the concept are directly tied to Bandura theories.

One of the primary differences between these constructs is that hope is based on an individual's intention to act toward a goal through the agency and pathway cognitive process. Snyder's hope theory is anchored in goals stating, "…my guiding assumption is that human actions are goal directed." (Snyder, 2002, p. 250). Hope requires that goal directed thinking includes both agency thoughts (willpower) and pathway identifications (waypower) working in tandem in an iterative process toward goal achievement. Snyder constructed hope as a stable trait-based concept that increased as goals and outcomes were attained through the agency and pathway process and could be considered as situational, cross-situational and personality levels of analysis (Snyder et al., 1991; Snyder, 2000, 2002).

General self-efficacy is tied to the tenets of Bandura's explanation of self-efficacy that includes efficacy expectancy and outcome expectancy and is primarily associated with efficacy expectations. As mentioned previously, general self-efficacy authors looked to expand the concept of perceived self-efficacy beyond specific behaviors and domains designated by Bandura. General self-efficacy is theorized as a trait-based concept that refers to how an individual manages or copes with a range of demanding situations (Schwarzer & Jerusalem, 1994). The concept of general self-efficacy does not specifically explain goal-related behavior except that it is linked to the overarching concept of self-efficacy that includes goals as a factor within the model.

Schwarzer and Jerusalem (1994) specifically referenced Snyder's hope theory as a construct that was similar to the concept of general self-efficacy as it related to a broad, dispositional approach that could be operationalized across domains. Schwarzer wrote, "Snyder et al. (1991) suggested such a construct that they coined "hope". They defined hope as a cognitive set that is composed of a reciprocally derived sense of successful agency and pathways. Agency pertains to self-efficacy and pathways equals the action-outcome expectancy." (Schwarzer, 1994; Schwarzer & Jerusalem, 1995a). Snyder recognized the similarities and differences of hope in relation to Bandura's design of self-efficacy and considered self-efficacy as situational and domain specific in accordance with Bandura's position (Snyder, 2000, 2002). Specifically, Snyder recognized the parallel positions of agency and pathways constructs in relation to efficacy expectancy and outcome expectancy. However, Snyder did not view them as the same. Snyder considered pathways thinking as an individual actively conceptualizing routes to goals, where outcome expectancy is based on an individual's evaluation that an action could lead to a particular outcome (Bandura, 1977; Snyder, 2002). Bandura considered efficacy

expectancy as a consideration of an individual's belief that they can execute an action in a specific situation toward a goal, whereas agency thinking is summoning the motivation and willpower required to act toward a visualized goal (Bandura, 1977; Snyder, 2002). To summarize Snyder's position, he stated that efficacy expectancy and outcome expectancy referred to an individual's, "…capacity to act", where hope referred to, "…reflecting the intention to act – with intention being more willful." (Snyder, 2002, p. 258). As self-efficacy and general self-efficacy place a primary focus on determining the behaviors required to consider acting toward outcomes, hope theory requires that both agency and pathway thinking are actively working in concert toward an actionable goal.

There is evidence that Snyder was aware of a generalized form of self-efficacy and the existence and development of additional generalized perceived self-efficacy scales. As mentioned above, Schwarzer (Schwarzer, 1994; Schwarzer & Jerusalem, 1995a) wrote of the similarities and specifically addressed hope research in relation to other dispositional scales with a goal to measure causal relationships and positive aspects of life. Snyder did acknowledge the existence of generalized self-efficacy in a footnote of his seminal article, *Hope Theory: Rainbows in the Mind* (2002) stating, "Nevertheless, a dispositional measure of self-efficacy has been developed by other researchers (see Sherer et al. 1982)." (p. 257). Snyder made a previous reference regarding Sherer's dispositional scale in The Handbook of Hope (2000). Yet, it is unclear why Snyder chose not to address the similarities that general self-efficacy researchers advanced.

There have been several articles published that include measures of hope as established by Schwarzer and Jerusalem's General Self-Efficacy Scale. Zhou and Chun Seng Kam (2016), have questioned the uniqueness of the concepts in an article published in the Journal of

Psychology entitled, Hope and General Self-Efficacy: Two Measures of the Same Construct? The article focuses primarily on the psychometric properties of the scales and provides limited identification of conceptual similarities and differences related to hope and general self-efficacy. Zhou and Chun Seng Kam (2016) conducted a factor analysis to examine the similarities and differences in item content of hope using a Chinese version of Snyder's Dispositional Hope Scale and the Chinese version of Schwarzer and Jerusalem's General Self-Efficacy Scale. Zhou and Chun Seng Kam (2016) first measured the Hope Scale reporting a bidimensional model formed from agency and pathways then allowed the two constructs to correlate with each other establishing a unidimensional measure for hope. Hope and general self-efficacy were then analyzed through factor analysis establishing two separate factors. Again, the authors correlated the two latent factors and reported results indicating a single factor for hope and general self-efficacy. This result suggested that hope and general self-efficacy measure the same construct. In addition, the study conducted a correlational analysis of 13 independent variables. Zhou and Chun Seng Kam state results indicating that 11 of 13 measured variables showed little difference in measurement between with hope and GSE (Zhou & Chun Seng Kam, 2016). Zhou and Chun Seng Kam (2016) concluded that general self-efficacy and hope items may be two measures of the same underlying construct. They listed implications from the study as a need to differentiate the constructs of general self-efficacy and hope or consider them the same while challenging researchers to recognize and acknowledge the conceptual and operational similarities of these constructs.

A Turkish study conducted by Ekinci and Koc (2022) confirmed a positive relationship between general self-efficacy and hope operationalizing Schwarzer and Jerusalem's General Self Efficacy Scale (1995) and Snyder's Adult Hope Scale (1991). In addition, the study employed

Duckworth and Quinn's Short Grit Scale and Diener's Satisfaction with Life scale. The results showed that hope fully mediated the effect of general self-efficacy on life satisfaction and states that hope can be a factor that increases resilience and general self-efficacy. Again, the constructs of hope and general self-efficacy are found to be similar yet distinct measures that provide explanation and evidence of separate constructs.

Additional studies that include specific measurement of hope and general self-efficacy include a study by Munoz et al. (2017). Munoz et al., (2017) compared Sherer's Self Efficacy Scale (1982) and Snyder's Adult Hope Scale (1991) along with Diener's Satisfaction with Life Scale. Results of a principal components analysis indicated that each variable was recovered as distinct factors. In addition, a hierarchical multiple regression analysis further supported the findings as hope accounting for unique variance in life satisfaction beyond self-efficacy. The results of the study showed that hope and general self-efficacy were related but distinct in the measurement outcomes and hope is an important variable when considering psychological well-being (Munoz et al., 2017). This result is similar to a study of Magaletta and Oliver (1999) that operationalized Sherer's Self-Efficacy Scale (1982) and Snyder's Adult Hope Scale (1991) along with Scheier and Carver's Life Orientation Test and Wheeler's General Well-Being Questionnaire. A factor analysis was conducted using a maximum likelihood approach and an orthogonal rotation and determined that the two variables were separate and unique measurements. In addition, a hierarchical multiple regression analysis concluded that hope was predictive of general well-being beyond the effects of general self-efficacy.

Flourishing

The advent of positive psychology has provided research that focuses on studying and promoting human strengths, virtues, and well-being, rather than concentrating on pathology and dysfunction. Positive psychology emphasizes three central pillars, positive emotions, positive individual traits and promoting positive institutions. (Seligman & Csikszentmihalyi, 2000). One of the most significant concepts in this collective body is what it means to flourish and have well-being as an individual (Diener, 2010).

Researchers and philosophers have considered the concepts of happiness and well-being for centuries. Well-being research has been based on the concepts of hedonic well-being, meaning maximizing pleasure and minimizing pain and distress; and eudaimonic well-being or living life well through guiding principles of values and virtues (Ryan & Deci, 2001).

There has been considerable research developed in defining and assessing well-being. Diener's contributions to the study of well-being and flourishing include the development of research and measurement scale to assess an individual's subjective well-being. Diener's study of well-being is multifaceted and includes cognitive assessments and emotional experiences he established as subjective well-being. Subjective well-being includes a self-reporting measure on the comprehensive assessment of an individual's life based in positive and negative affective and life satisfaction (Diener, 1985). Diener (2010) would later establish a new scale that would encompass new theories of psychological and social well-being. The 8-item Flourishing Scale was designed to capture the 'social-psychological prosperity' (p. 144) to help explain an individual's overall sense of flourishing or extend an optimal state of human functioning. Diener (2010) stated the Flourishing scale complements the subjective well-being scale and includes measures of competence, relatedness, self-acceptance, positive and supportive relationships, and

having meaning and purpose in life. The Flourishing Scale is recognized as a good assessment of overall psychological well-being that encompasses many of the concepts and ideas related to the study of well-being across research of the hedonic and eudemonia spectrum.

Summary

The purpose of this study is to examine the relationships between general self-efficacy and hope. The concepts of hope and general self-efficacy are similar with origins in expectancy-based theory. Previous researchers have established differences between the two constructs (Magaletta & Oliver, 1999; Munoz et al. 2017), yet other studies have suggested that general self-efficacy and hope are similar concepts (Schwarzer, 1994; Schwarzer & Jerusalem, 1995a) or the same construct with recommendations to further differentiate the concepts or collapse them into a single explanation (Zhou & Chun Seng Kam, 2016). This study looks to further the understanding of these two concepts as different, similar, or the same.

In addition to reviewing the concepts of general self-efficacy and hope, the study considered the psychometric properties of both scales independently and in combination to determine if these concepts can be replicated according to their original, intended construction. The study employed a factor analysis to determine if similar or different results exist in item construction of the Snyder Hope Scale (1991) and the Schwarzer and Jerusalem General Self Efficacy Scale (1995). These constructs were specifically operationalized to match the variables measured by Zhou & Chun Seng Kam (2016) to determine if results are similar or different to their findings. Zhou & Chun Seng Kam included limitations in their study stating that a good model fit was found for the results of their one-factor model but may be difficult to generalize the results to other samples with varying characteristics and encouraged a larger sample size

(199+) to increase external validity. The third purpose of the study to distinguish the similarities or differences between the measures was to conduct a hierarchical multiple regression analysis to determine if hope scores would explain variance beyond general self-efficacy scores when correlated with Diener's Flourishing Scale. In addition, a second multiple regression analysis was conducted to determine if the subsets of hope, agency and pathways, would explain variance beyond general self-efficacy scores when correlated with the Flourishing Scale. This analysis would further confirm the similarities or differences among the two concepts.

- Do the constructs of general self-efficacy and hope theory explain the same cognitive phenomenon in positive psychology?
- Do the measurement scales of general self-efficacy as described in the Schwarzer and Jerusalem General Perceived Self-Efficacy Scale (1995) and Snyder's Adult Hope Trait Scale (1991) measure the same construct?
- If the measures are sufficiently distinct, will Hope scores explain variance beyond generalized self-efficacy scores when correlated with Diener's Flourishing scale (2010) in measuring well-being?

METHODS

Participants and Data Collection

This study consisted of a correlational cross-sectional design to explore relationships between hope and general self-efficacy utilizing a convenience sampling method administered to employees of 56 human service, non-profit organizations in an urban city of the Southern U.S. plains.

Data were collected through an electronic survey link using Qualtrics and analyzed using SPSS version 28. Participants were solicited through electronic mail from a curated list of non-profit organizations from the City's United Way. Participants were required to provide informed consent as a condition of participation. No participants were permitted to participate if under 18 years of age. The study was reviewed and approved through the University of Oklahoma's Internal Review Board (IRB) process (Appendix D).

A total of 25 organizations representing 290 individuals participated in the survey. After reviewing the responses, a listwise deletion approach by SPSS software was applied to handle missing data. Specifically, any respondent who failed to provide complete information on any of the key variables was excluded from the final analysis. Upon initial review of the survey data, 267 participants completed the entirety of the survey (n=267) establishing the sample size for the study. Additional responses on individual scales include Dispositional Adult Hope Scale (n=269), the General Self-Efficacy Scale (n=273), and the Flourishing Scale (n=270). The study respondents were comprised of individuals ranging from 18 to over 65 years old with bands consisting of 18-25 representing 6.8% of responses, 26-35 representing 26.9%, 36-45 representing 25.8, 46-55 representing 22.3, 56-65 representing 14% and 65+ representing 4.2% of the sample.

Measures

General Self-Efficacy Scale (GSES)

The General Self-Efficacy Scale is a unidimensional 10-item scale designed by Schwarzer and Jerusalem (1995) to measure an individual's general self-efficacy and designed to assess optimistic self-beliefs on coping with adversity (Appendix A). The scale is intended for an adult population and can include adolescents twelve years old and above. Respondents rate each item on a 1 (not true at all) to 4 (exactly true) scale with a range of scores from 1 to 40. Sample items include "It is easy for me to stick to my aims and accomplish my goals," and "I can solve most problems if I invest the necessary effort." Higher scores indicate higher general self-efficacy. Reliability testing for Cronbach's Alpha ranges from .76 to .90. The Cronbach's Alpha for this sample was determined to be sufficient as $\alpha = .862$.

Snyder's Dispositional (trait) Adult Hope Scale (AHS)

The Dispositional Hope Scale (Snyder et al., 1991) is designed to measure an individual's motivation and cognitive process toward goals through a self-assessing scale that includes four pathway items, four agency items, and four filler/distractor questions (Appendix B). The modified Adult Hope Scale was adopted for this study. The modified scale removes the four filler/distractor questions and has been shown to retain the original intent of the model with sufficient reliability ranging from Cronbach's α of 0.74-0.84 and test-retest validity of 0.85 (Hellman et al., 2013). The agency items reflect the respondent's general goal determination in relation to past and present experiences and include future oriented goals. The pathways items reflect the respondent's evaluation of their ability to produce routes for overcoming goal related barriers and reaching their goals. Respondents rated how accurately each item describes them utilizing an 8-point Likert scale ranging from 1 (definitely false) to 8 (definitely true). Items 2, 6,

7, and 8 make up the agency subscale. Items 1, 3, 4, and 5 make up the pathway subscale. Higher scores indicate a higher level of hope. The Adult Hope Scale was designed with bidimensional factors, a subset for the agency related items and a subset for the pathways related items. The scores are combined to establish an overall hope score. The eight items for the sample were sufficient for internal consistency, $\alpha = .892$.

Diener's Flourishing Scale (FS)

The Flourishing Scale is based upon an 8-item scale (Diener et al., 2010) that measures the respondent's positive relationships, meaning and purpose in life, optimism, and self-worth (Appendix C). Diener (2010) states that the scale provides a broad representation of positive functioning across multiple domains of well-being. The items have been established in a positive direction where the total score provides a gauge of the psychological well-being for the respondent. A 7-point Likert scale, ranging from 1 = Strongly Disagree to 7 = Strongly Agree, is provided for each item. Total scores can vary from a low of 8 to a maximum of 56. Examples of items from the scale include, "I lead a purposeful and meaningful life." And. "I am optimistic about my future." A high score represents that respondents view themselves in positive terms with many resources and strengths related to functioning. Diener (2010) reported Cronbach's Alpha measure of internal consistency for the scale as $\alpha = .87$. The Cronbach's Alpha for this sample was $\alpha = .889$.

Data Analysis Plan

Exploratory Factor Analysis for Research Questions One and Two

To answer research questions number one and two, this study employed an exploratory factor analysis using principal axis factor analysis as the extraction method to determine if latent

factors exist within items on the Adult Hope Scale (Snyder et al., 1991) and the General Self Efficacy Scale (Schwarzer & Jerusalem, 1995). An oblique, Promax rotation was applied to identify the presence of correlations between the scales and detect the shared and unique variance that may exist between items and factors. In addition, this procedure will attempt to identify the existence of a simple structure (Thurstone, 1947; Kline, 1994), in response to the following questions;

- Do the constructs of general self-efficacy (GSE) and hope theory explain the same cognitive phenomenon in positive psychology?
- Do the measurement scales of general self-efficacy as described in the Schwarzer and Jerusalem General Perceived Self-Efficacy Scale (1995) and Adult Hope Trait Scale (1991) measure the same construct?

Prior to analyzing the Adult Hope Scale and the General Self-Efficacy items using an exploratory factor analysis, it was determined that each scale would be analyzed independently to determine if the sample replicated or approximated the findings from the original and subsequent research. An exploratory factor analysis using principal factor analysis and an oblique, Promax rotation were selected to analyze each scale.

Criterion for Exploratory Factor Analysis Plan for Research Questions One and Two

Exploratory factor analysis is used to measure and identify underlying relationships between variables and is an appropriate common factor technique for use when describing and grouping variables that are correlated (Thompson, 2004; Tabachnick & Fidell, 1996) and should follow a sequential process that consists of evaluating sample size adequacy, determining factor extraction methods, how factors will be retained, what rotation method will be used, and how factor will be interpreted (Taherdoost et. al., 2014; Costello & Osborne, 2019). Both the Adult

Hope Scale (Snyder et al., 1991) and the General Self Efficacy Scale (Schwarzer & Jerusalem, 1995) are hypothesized to share correlations within variables due to similar construct development with origins related to cognition and outcome expectations and both are rooted in measurement at the dispositional level. In addition, the underlying premise of this study is to consider the previous findings of Zhou & Chun Seng Kam (2016) indicating there were no differences between the two constructs, suggesting that the associated variables are correlated. Since it is hypothesized there are correlations and shared variance among the items within these scales, employing the exploratory factor analysis is appropriate as common factor analysis recognizes the error that inevitably exists within samples, as well as acknowledges both the shared and unique variance between variables (Gorsuch, 1990; Thompson 2004; Osbourne, 2015).

Exploratory factor analysis is used to determine the potential for latent factor structure within variables (Thompson, 2004). The existing factor structure for Snyder's Adult Hope Scale was designed and validated as a bidimensional, two factor measure with four items representing the agency factor and four items representing the pathways factor. The scores are then added together to create a single score for ease of use (Snyder et al., 1991). Although there are studies that indicate the scale may be a unidimensional scale (Brouwer et al., 2008; Vinueza-Solorzano et al., 2023), this study will determine the existence of the original two factor measure and combine scores as originally designed by Snyder, if confirmed. Schwarzer & Jerusalem's General Self-Efficacy Scale was designed and validated by the authors as a unidimensional scale indicating no latent factors were extracted in designing the scale. Applying an exploratory factor analysis while combining the items from the sample will provide an opportunity to determine if variables share significant correlations where items may 'cross-load' on existing factors and/or

determine if additional latent factors may be present among the variables as suggested by Zhou (2016). Using an exploratory factor analysis approach assisted in determining the smallest number of factors to explain correlations between items on these scales (Thompson, 2004).

The sample size of the data was considered in determining if an exploratory factor analysis would be an appropriate measure for the study. There are differing positions taken by researchers related to the appropriate sample size required to obtain accurate results (Gorsuch, 1983; Tabachnick & Fidell, 1996). This study applied the recommendations of Fabrigar and Wegener (2012) that considered a sample size of 200 respondents and communalities within .40 - .70 representing at least three variables that load on a factor as sufficient for an analysis.

Principal axis factoring was chosen as the extraction method for the common factor analysis. Principal axis factoring targets common variance (Tabachnick & Fidell, 1996) and used to identify latent constructs when multiple variables may measure similar qualities within factors (Thompson, 2004). Since there is a reasonable expectation that factors will have some correlation upon extraction, oblique rotation is the most appropriate rotation for this study (Corner, 2009; Grieder & Steiner, 2021). Promax (Hendrikson & White, 1964) is a widely used oblique rotation method that will provide both a structure matrix and pattern matrix. A structure matrix will include shared and unique variance within items and factors while the pattern matrix will reduce the shared variance to isolate the unique variance that is represented within items and factors (Fabrigar & Wegener, 2012). The pattern matrix will serve to identify simple structure (Kline, 1994).

Testing and Analysis to Advance the Exploratory Factor Analysis

Each of the three exploratory factor analysis will include the following tests and analysis, as needed, in validating the analysis process.

Kaiser-Meyer-Olkin Measure

The Kaiser-Meyer-Olkin (KMO) is a measure of sampling adequacy that is determined on a scale of 0 to 1. Kaiser & Rice (1974) established a rating system indicating that scores greater than .8 – 1.0 were adequate to move forward with the factor analysis. Scores below .5 were determined not satisfactory to advance a factor analysis.

Bartlett's Test of Sphericity

Bartlett's Test of Sphericity (Bartlett, 1950) is a test of significance that must meet the criteria of ($p < .05$) indicating that the correlation matrix is not an identity matrix and represents significant correlation among variables for analysis (Tabachnick & Fidell, 1996).

Eigenvalues

The Kaiser Criterion (Kaiser, 1960) of retaining factors with an eigenvalue of (>1) was used to determine the number of factors to extract for analysis and rotation. The eigenvalue test is useful but can be problematic in estimating the number of factors for extraction in a factor analysis (Preacher & MacCallum, 2003; Gorsuch, 1983). Accordingly, additional techniques were included in determining the number of factors for extraction.

Cattell's Scree Test

Cattell's Scree Test was used to validate the eigenvalue computation of three extracted factors (Cattell, 1966). The visual measure indicates the number of factors to employ for factor extraction, however, this graphical representation is generated from the Kaiser Criterion test within the SPSS model. Although useful and valid in helping identify the number of factors for extraction, a third technique was included to approximate the number of factors to retain for the factor analysis.

Velicer's Minimum Average Partial Test

Velicer's Minimum Average Partial Test (Velicer, 1976) was also conducted to estimate the number of factors to extract for analysis. This test is not computed based on eigenvalues and provides a secondary evaluation to determine the number of factors to extract for analysis.

Communalities

Communalities for each item were computed, as well as the average across the scales. *C*ommunalities represent the variance in each observed variable that can be explained by the underlying common factors and can range from 0 to 1. The closer the communality is to 1, the better the variable is explained by the factors. Communalities above 0.6 are generally considered ideal, while values between 0.25 and 0.4 are often deemed acceptable (Thompson, 2004).

Pattern Matrix

The Promax, oblique rotation (Hendrikson & White, 1964) produces a pattern matrix that represents the unique variance associated within variables and focuses on specific factor contributions to the model. Whereas the structure matrix represents all correlations of variance within variables and factors, the pattern matrix focuses on the unique variance attributable to specific factors (Fabrigar & Wegener, 2012; Thompson, 2004).

Structure Matrix

The Promax, oblique rotation, will produce a structure matrix that represents the correlations and interdependence between all the variables and the associated factors. The structure matrix represents both common or shared variance and the unique variance that exists across all the items and their associated factors (Fabrigar & Wegener, 2012; Thompson, 2004).

Hierarchical Multiple Regression Plan for Research Question Three

To the extent that hope, and general self-efficacy represents unique measures from the analysis of the exploratory factor analysis, the study employed a hierarchical multiple regression analysis to explore the relationship between hope, general self-efficacy and flourishing. It is predicted that the hope scale will predict flourishing over and above general self-efficacy.

- Does Hope explain variance beyond generalized self-efficacy when correlated with the positive psychological construct of Diener's Flourishing Scale (2010)?

In addition to conducting a hierarchical multiple regression model to analyze general self-efficacy and hope, an additional hierarchical multiple regression model was conducted to analyze the General Self-Efficacy Scale and the Dispositional Adult Hope Scale as two subscales, hope-agency and hope-pathways. The analysis will determine how variance may be distributed within the two subscales and general self-efficacy as it relates to Diener's Flourishing Scale.

RESULTS

Exploratory Factor Analysis of the Adult Hope Scale

An exploratory factor analysis was conducted to examine the underlying factor structures of the Adult Hope Scale (n=269). This analysis aims to determine whether the dimensions of the Adult Hope Scale replicated or approximated the original scale development. Principal axis factoring was used as the extraction method, with Promax rotation applied to simplify the factor structure.

Data Testing

The Kaiser Meyer Olkin (KMO) measure of sampling adequacy was .885 representing sufficient overlap within variables and the potential existence of underlying factors within the sample indicating sufficient findings to continue the factor analysis process.

The Bartlett's Test of Sphericity was significant at X^2 (269) = 1128.25, $p < .001$ indicating the correlation matrix and the identity matrix are different and likely that correlations exist within the sample and sufficient to advance the planned analysis.

Factor Extraction

Two factors were determined for the extraction and rotation. Initial eigenvalues (Kaiser, 1960) suggested two factors representing 70.45% of the cumulative variance. The extraction of sums of squared loadings indicated the presence of two factors, although reduced from removing additional variance, represented 61.01% of the cumulative variance. The Cattell's scree test (Figure 1) also indicated the presence of two factors with the second factor slightly above the (> 1) threshold related to the eigenvalue test. To gain additional clarity, Velicer's minimum average partial (Velicer, 1976) was conducted. The minimum average partial indicated the presence of a second factor. Based on a priori knowledge of the Adult Hope Scale as

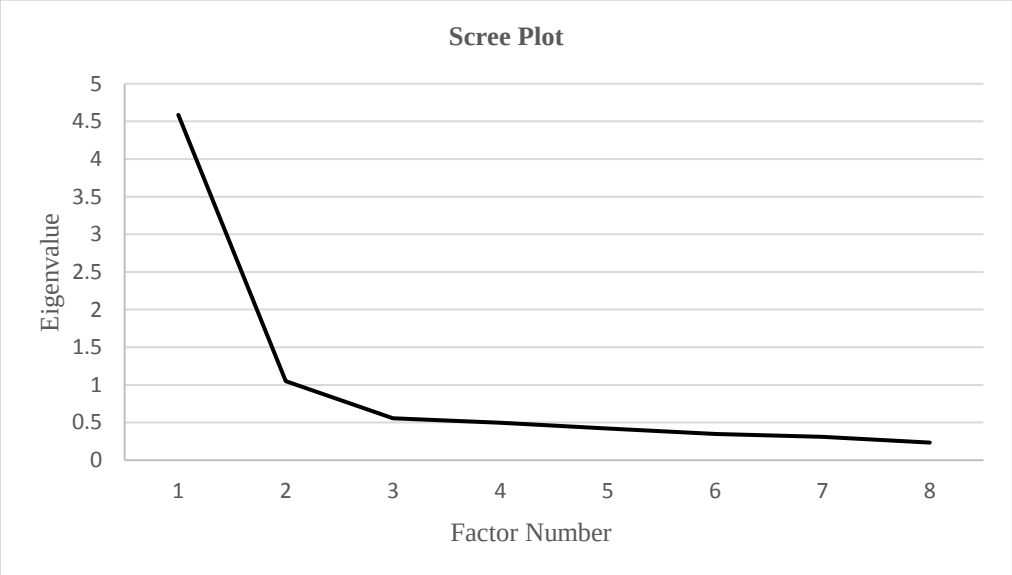
bidimensional, the initial eigenvalue test, Cattell's scree plot, and presence of a second factor within the minimum average partial test, evidence is sufficient to advance a two-factor model.

Table 1. 1

Factor Correlations for Exploratory Factor Analysis of the Adult Hope Scale (n=269)

		Initial Eigenvalues		Extraction Sums of Squared Loadings		
Factor	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	4.59	57.33	57.33	4.21	52.61	**52.61**
2	1.05	13.11	70.45	0.67	8.40	**61.01**

Figure 3. *Cattell's Scree Test of the Adult Hope Scale*



Communalities

The extracted communalities ranging from .46 to .76 (Table 1.2) were determined suitable for factoring (Tabachnick & Fidell, 1996). In addition, an overall average of .61 indicating a moderately good sample was present for analysis (Fabrigar & Wegener, 2012). Communalities of (> .40) are indicated in bold and represent the threshold for considering relevance within the

data. All extracted commonalities were above the (> .40) threshold and were retained within the analysis.

Table 1. 2

Communalities for Exploratory Factor Analysis for the Adult Hope Scale (n=269

	Items	**Initial**	**Extraction**
AHS-P	I can think of many ways to get out of a jam.	**0.50**	**0.56**
AHS-A	I energetically pursue my goals.	**0.55**	**0.60**
AHS-P	There are lots of ways around any problem.	0.39	**0.48**
AHS-P	I can think of many ways to get the things in life that are important to me.	**0.63**	**0.69**
AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	**0.60**	**0.69**
AHS-A	My past experiences have prepared me well for my future.	**0.43**	**0.46**
AHS-A	I've been pretty successful in life.	**0.57**	**0.65**
AHS-A	I meet the goals that I set for myself.	**0.62**	**0.76**

Note: AHS-A are Agency based items, AHS-P are Pathway based items

Pattern Matrix

The results of the unique variance represented in the pattern matrix (Table 1.3) confirmed that two factors were present within the Adult Hope Scale data. The two factors represent Snyder's original scale design as bidimensional with items loading on a subset factor related to agency and a subset factor related to pathways. While all four items related to the subset of pathways loaded on a single factor, one of the items from the agency subset, 'My past experiences have prepared me well for my future,' loaded on the pathways factor in this sample. The remaining three items related to the agency subset loaded on the original agency subset factor. All items were retained in advancing the study for comparison of each scale as the results of the exploratory factor analysis for the Adult Hope Scale confirmed a two-factor model for agency and pathways. It is noted in the structure matrix that the single item loading across factors showed significant correlation related to the original subset of hope-agency.

Table 1. 3

Pattern Matrix for Exploratory Factor Analysis of the Adult Hope Scale (n=266)

		Factor	
	Items	**1**	**2**
AHS-P	I can think of many ways to get out of a jam.	**0.70**	0.07
AHS-A	I energetically pursue my goals.	0.21	**0.61**
AHS-P	There are lots of ways around any problem.	**0.82**	-0.21
AHS-P	I can think of many ways to get the things in life that are important to me.	**0.67**	0.21
AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	**0.78**	0.07
AHS-A	My past experiences have prepared me well for my future.	**0.53**	0.19
AHS-A	I've been pretty successful in life.	-0.05	**0.84**
AHS-A	I meet the goals that I set for myself.	-0.10	**0.94**

Note: Correlations >.4 represented in bold
AHS-P represents Pathway items
AHS-A represents Agency items

Structure Matrix

The structure matrix includes both the unique and shared or common variance that can overlap within variables and factors (Fabrigar & Wegener, 2012; Thompson, 2015). The structure matrix (Table 1.4) highlights the significance of the shared variance and correlations that exist between items within the scale, notably within the two factor subsets associated with agency and pathways. It is acknowledged that high correlations exist within items and factors related to the sample and representative of other findings (Magaletta & Oliver, 1999) that indicate the close association between items within the two factors.

Table 1. 4

Structure Matrix for Exploratory Factor Analysis of the Adult Hope Scale (n=269)

		Factor	
	Items	**1**	**2**
AHS-P	I can think of many ways to get out of a jam.	**0.75**	**0.55**
AHS-A	I energetically pursue my goals.	**0.63**	**0.76**
AHS-P	There are lots of ways around any problem.	**0.67**	0.35
AHS-P	I can think of many ways to get the things in life that are important to me.	**0.82**	**0.67**

AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	**0.83**	**0.60**
AHS-A	My past experiences have prepared me well for my future.	**0.67**	**0.56**
AHS-A	I've been pretty successful in life.	**0.53**	**0.81**
AHS-A	I meet the goals that I set for myself.	**0.55**	**0.87**

Note: Correlations >.4 represented in bold
AHS-P represents Pathway items
AHS-A represents Agency items

Exploratory Factor Analysis of the General Self-Efficacy Scale

An exploratory factor analysis was conducted to examine the underlying factor structure of the General Self-Efficacy Scale (n=276). This analysis aimed to determine whether the General Self-Efficacy Scale replicated or approximated the original unidimensional design. Principal axis factoring (PAF) was used as the extraction method, with Promax rotation applied to simplify the factor structure.

Data Testing

The Kaiser Meyer Olkin (KMO) measure of sampling adequacy was .895 representing sufficient overlap within variables and the potential existence of underlying factors within the sample indicating sufficient findings to continue the factor analysis process. The Bartlett's Test of Sphericity (Bartlett, 1950) was significant as X^2 (276) = 951.94, $p < .001$ indicating the correlation matrix and the identity matrix are different and likely that correlations exist within the sample and sufficient to advance the planned analysis.

Factor Loadings

A single factor was revealed within the analysis. The initial eigenvalue (>1) (Kaiser, 1960) indicated a single factor accounting for 45.87% variance within the model. Additional analysis of the initial eigenvalues indicted two additional factors below the (>1) threshold at .924 and .908. Cattell's scree plot (Cattell, 1966) confirmed the single factor. To determine if

additional factors were sufficient for consideration, Velicer's minimum average partial (Velicer, 1976) was completed. The analysis indicated the additional presence but did not support a decision to include an additional second factor. The single factor determination supports the original scale design of Schwarzer and Jerusalem in establishing the General Self-Efficacy Scale as a unidimensional measurement. It is noted that less than 50% of variance is accounted for in the one factor model indicating considerable remaining variance within items. Based on the identification of a single factor, rotation will not occur within the analysis. No pattern or structure matrix will be established.

Table 2. 1

Factor Loadings for Exploratory Factor Analysis for the General Self-Efficacy Scale (n=276)

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	4.59	45.87	45.87	4.02	40.17	40.17

Figure 4. *Cattell's Scree Test for the General Self-Efficacy Scale*

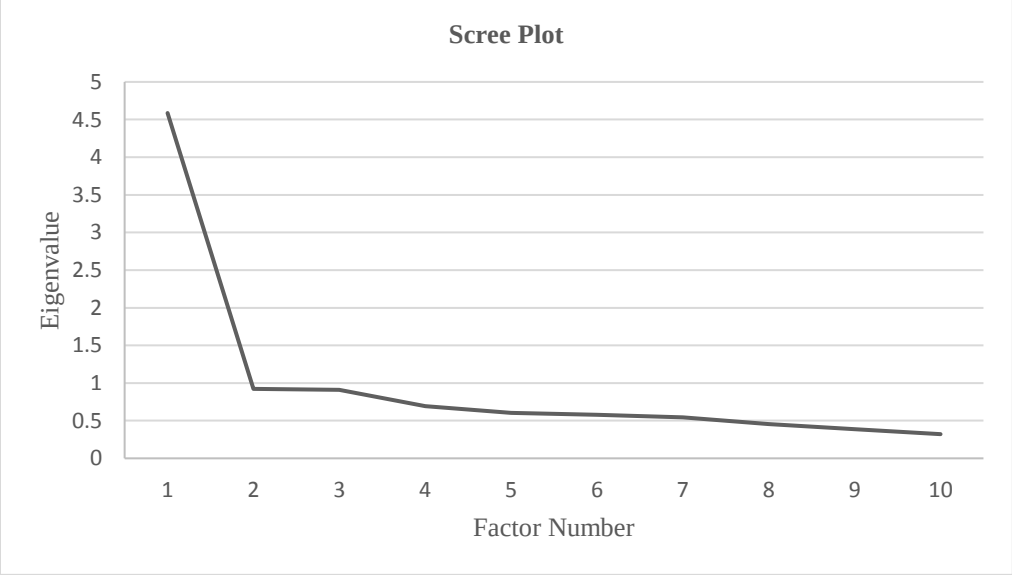


Table 2. 2

Factor Matrix for Exploratory Factor Analysis of the General Self-Efficacy Scale (n=276)

	Items	Factor
GSE1	I can always manage to solve difficult problems if I try hard enough.	**0.63**
GSE2	If someone opposes me, I can find the means and ways to get what I want.	0.37
GSE3	It is easy for me to stick to my aims and accomplish my goals.	**0.62**
GSE4	I am confident that I could deal efficiently with unexpected events.	**0.70**
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	**0.70**
GSE6	I can solve most problems if I invest the necessary effort.	**0.64**
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	**0.61**
GSE8	When I am confronted with a problem, I can usually find several solutions.	**0.56**
GSE9	If I am in trouble, I can usually think of a solution.	**0.72**
GSE10	I can usually handle whatever comes my way.	**0.72**

Note: Correlations >.40 represented in bold

Communalities

The initial and extracted communalities listed in Table 2.3 were determined to be suitable for factoring (Tabachnick & Fidell, 1996). An overall average of communalities was computed at (.40) indicating a moderately good sample was present for analysis (Fabrigar & Wegener, 2012). Communalities of (> .40) are indicated in bold and represent the threshold for considering relevance within the data. Several commonalities were observed below the (> .40) threshold. The initial communalities indicated three items below the (>.40) threshold and four items below (>.40) after extraction. All items were retained within the analysis as the threshold for communalities can be subjective and the intent of the study is to compare the General Self Efficacy Scale and the Adult Hope Scale. If the objective of the study was to reduce items to approach simple structure, the four items below the (> .40) threshold might be candidates for removal from the scale.

Table 2. 3

Communalities for Exploratory Factor Analysis for the General Self-Efficacy Scale (n=270)

	Items	Initial	Extraction
GSE1	I can always manage to solve difficult problems if I try hard enough.	**0.40**	**0.40**
GSE2	If someone opposes me, I can find the means and ways to get what I want.	0.14	0.13
GSE3	It is easy for me to stick to my aims and accomplish my goals.	0.36	0.38
GSE4	I am confident that I could deal efficiently with unexpected events.	**0.45**	**0.49**
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	**0.44**	**0.49**
GSE6	I can solve most problems if I invest the necessary effort.	**0.40**	**0.41**
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	0.36	0.37
GSE8	When I am confronted with a problem, I can usually find several solutions.	**0.40**	0.31
GSE9	If I am in trouble, I can usually think of a solution.	**0.54**	**0.52**
GSE10	I can usually handle whatever comes my way.	**0.48**	**0.52**

Exploratory Factor Analysis of General Self-Efficacy Items and Adult Hope Scale Items Combined

Exploratory factor analysis was conducted to examine the underlying factor structures of the General Self-Efficacy Scale and the Adult Hope Scale, (n = 267). This analysis seeks to determine whether these items measure distinct constructs and/or share common underlying dimensions. Principal axis factoring was used as the extraction method, with Promax rotation applied to simplify the factor structure.

Data Testing

The correlation matrix was analyzed to determine consistent, and significant correlations exist between variables. Observation detected one item, GSE2, lower than other variables within the matrix. It was determined that overall, the sample was adequate to advance the factor analysis.

The Kaiser Meyer Olkin (KMO) measure of sampling adequacy was .928 representing sufficient overlap within variables and the potential existence of underlying factors within the sample. The Kaiser scale value of .928 was determined to be 'marvelous' (Kaiser & Rice, 1974) and indicates that the sample was sufficient to continue the factor analysis process.

The Bartlett's Test of Sphericity (Bartlett, 1950) was significant as X^2 (267) = 2444.173, $p < .000$ indicating the correlation matrix and the identity matrix are different and likely that correlations exist within the sample and sufficient to advance the planned analysis.

Factor Loading

Three factors were determined for the extraction and rotation. Using the Kaiser (1960) eigenvalue test for determining factors for extraction (> 1), the Initial eigenvalues suggested three factors present in the data representing 59.22% of the cumulative variance. The extraction of sums of squared loadings also indicated the presence of three factors representing 51.87% of the cumulative variance (Table 3.1) with the third factor lower at (.71). Cattell's scree test (Cattell, 1966) (Figure 3.) confirmed the presence of three factors with the third factor slightly above the (> 1) threshold related to the eigenvalue threshold.

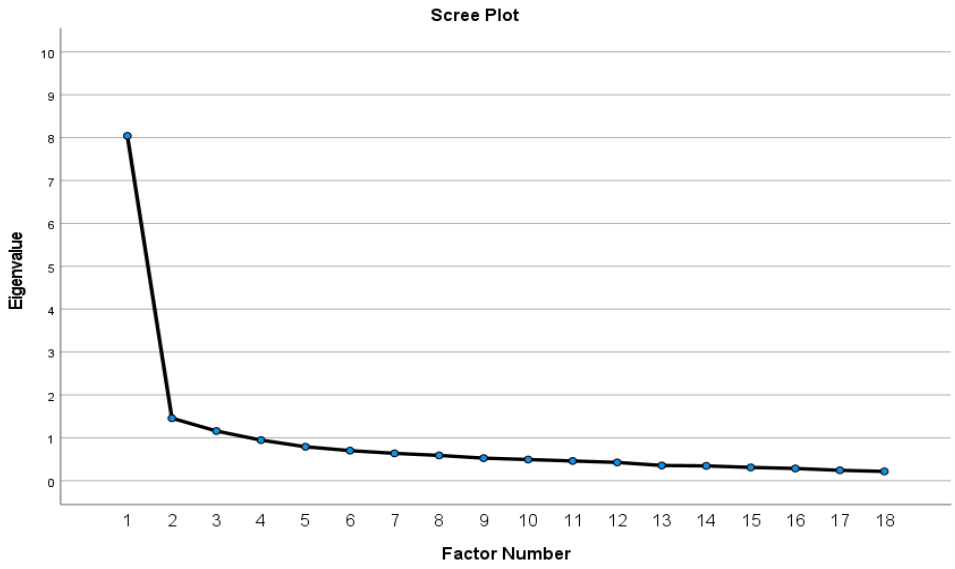
To gain additional clarity, Velicer's minimum average partial (Velicer, 1976) was conducted. The minimum average partial also indicated the presence of a third factor. Based on the initial eigenvalue test, Cattell's scree plot, and presence of a third factor within the minimum average partial test, evidence is sufficient to advance a three-factor model. This result aligned with the previous factor extractions for General Self-Efficacy Scale as unidimensional and the Adult Hope Scale as bidimensional establishing a three-factor model for rotation and analysis.

Table 3. 1

Factor Loadings for Exploratory Factor Analysis of the Adult Hope Scale and the Generalized Self-Efficacy Scale (n=267)

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	8.04	44.68	44.68	7.59	42.17	**42.17**
2	1.46	8.10	52.78	1.04	5.75	**47.92**
3	1.16	6.44	59.22	.711	3.95	**51.87**

Figure 5. *Cattell's Scree Test of the General Self-Efficacy Scale and Adult Hope Scale*



Communalities

The initial and extracted communalities listed in Table 3.2 are suitable for factoring. Extracted communalities ranged from .38 to .71, with one outlier at .14. The average for all communalities is .52 indicating a moderately good sample was present for analysis (Fabrigar & Wegener, 2012). When performing EFA using principal axis factoring with Promax rotation, Osborne, Costello, & Kellow (2008) suggest that the communalities above (> 0.40) are acceptable. Communalities of (>.40) are indicated in bold and represent the threshold for

considering relevance within the data. One item, GSE2, was found to be below the (>.40) threshold at (0.14). All items were retained, including the item below the (>.40) threshold as the objective of the study is to determine the similarities and differences within the scales, and it was determined that including the item with low communality would provide a more accurate reporting of results.

Table 3. 2

Communalities for Exploratory Factor Analysis of the Adult Hope Scale and the Generalized Self-Efficacy Scale (n=267)

	Items	Initial	Extraction
GSE1	I can always manage to solve difficult problems if I try hard enough.	**0.43**	**0.40**
GSE2	If someone opposes me, I can find the means and ways to get what I want.	0.16	0.14
GSE3	It is easy for me to stick to my aims and accomplish my goals.	**0.51**	**0.58**
GSE4	I am confident that I could deal efficiently with unexpected events.	**0.49**	**0.52**
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	**0.48**	**0.47**
GSE6	I can solve most problems if I invest the necessary effort.	**0.46**	**0.41**
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	**0.40**	0.38
GSE8	When I am confronted with a problem, I can usually find several solutions.	**0.47**	**0.42**
GSE9	If I am in trouble, I can usually think of a solution.	**0.55**	**0.57**
GSE10	I can usually handle whatever comes my way.	**0.53**	**0.53**
AHS-P	I can think of many ways to get out of a jam.	**0.61**	**0.62**
AHS-A	I energetically pursue my goals.	**0.62**	**0.64**
AHS-P	There are lots of ways around any problem.	**0.44**	**0.53**
AHS-P	I can think of many ways to get the things in life that are important to me.	**0.65**	**0.68**
AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	**0.63**	**0.66**
AHS-A	My past experiences have prepared me well for my future.	**0.46**	**0.47**
AHS-A	I've been pretty successful in life.	**0.59**	**0.62**
AHS-A	I meet the goals that I set for myself.	**0.64**	**0.71**

Note: Correlations >.40 represented in bold
AHS-P represents Pathway items
AHS-A represents Agency items

Pattern Matrix Analysis

The pattern matrix represents the unique variance between the factor and items. Variance explained by more than one factor is not included in the pattern matrix (Thompson, 2015). When the unique variance is isolate in the pattern matrix, results indicate three factors with variables loading closely to their original construct design for general self-efficacy and hope. Factor one represented variables associated with the General Self-Efficacy Scale, factor two represented variables associated with the Adult Hope Scale, specifically the items related to the subset of hope-agency, and the third factor represented variables associated with the Adult Hope Scale, specifically related to hope-pathways items.

Factor one reveals that nine of the ten variables related to General Self-Efficacy items are loaded on a single factor. It is noted that Item number two, GSE2, loaded considerably lower than the other variables in the matrix, yet is represented within factor one. Item number three, GSE3, is loaded on factor number two that would be associated with the Adult Hope Scale and specifically the subset of hope-agency items.

Factor number two was represented by three of the four items aligned with the Adult Hope Scale associated with the subset of hope-agency including questions 2, 7, and 8. In addition, the General Self-Efficacy Scale item number 3 also loaded on factor number two.

Factor number three represented all items associated with the subset of hope-pathways, questions 1, 3, 4, and 5. In addition the factor included item number 6 originally associated with the hope-agency variables.

The pattern matrix analysis of these three factors, representing post- rotation, indicates that the ten items originally assigned to the General Self-Efficacy Scale and eight items originally assigned to the Adult Hope Scale, including four for the subset of hope-agency and

four for the subset of hope-pathway mostly align with their respective constructs and are separate and mostly distinct when analyzing the model for simple structure.

Table 3. 3

Pattern Matrix for Exploratory Factor Analysis of the Adult Hope Scale and the Generalized Self-Efficacy Scale (n=267)

		Factor(s)		
	Items	**1**	**2**	**3**
GSE1	I can always manage to solve difficult problems if I try hard enough.	**0.46**	0.20	0.04
GSE2	If someone opposes me, I can find the means and ways to get what I want.	0.29	-0.01	0.11
GSE3	It is easy for me to stick to my aims and accomplish my goals.	0.38	**0.63**	-0.28
GSE4	I am confident that I could deal efficiently with unexpected events.	**0.64**	0.26	-0.19
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	**0.62**	0.07	0.02
GSE6	I can solve most problems if I invest the necessary effort.	**0.44**	0.17	0.10
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	**0.41**	0.24	0.04
GSE8	When I am confronted with a problem, I can usually find several solutions.	**0.67**	-0.29	0.20
GSE9	If I am in trouble, I can usually think of a solution.	**0.77**	-0.11	0.08
GSE10	I can usually handle whatever comes my way.	**0.65**	0.03	0.08
AHS-P	I can think of many ways to get out of a jam.	**0.41**	0.01	**0.45**
AHS-A	I energetically pursue my goals.	0.15	**0.66**	0.06
AHS-P	There are lots of ways around any problem.	0.08	-0.17	**0.77**
AHS-P	I can think of many ways to get the things in life that are important to me.	-0.02	0.33	**0.61**
AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	0.17	0.20	**0.55**
AHS-A	My past experiences have prepared me well for my future.	0.01	0.29	**0.47**
AHS-A	I've been pretty successful in life.	-0.17	**0.83**	0.09
AHS-A	I meet the goals that I set for myself.	-0.14	**0.89**	0.06

Note: Correlations >.40 represented in bold
AHS-P represents Pathway items
AHS-A represents Agency items

Structure Matrix Analysis

The structure matrix represents the unique and common variance associated within and between all the variables (Thompson, 2014). Analysis of the structure matrix represents the presence of considerable correlations and variance among items and within the variables of both scales. It is acknowledged that these associations are significant when considering the shared or common variance and unique variance of these items and factors, however, when analyzing the pattern matrix, there is significant evidence to support not only three separate factors, but items loading specifically to the factors that would align with the original unidimensional scale design of Schwarzer & Jerusalem's General Self-Efficacy Scale and the bidimensional model of Snyder's Adult Hope Scale.

Table 3. 4

Structure Matrix for Exploratory Factor Analysis of the Adult Hope Scale and the Generalized Self-Efficacy Scale (n=267)

		Factor(s)		
	Items	**1**	**2**	**3**
GSE1	I can always manage to solve difficult problems if I try hard enough.	**0.61**	**0.52**	**0.45**
GSE2	If someone opposes me, I can find the means and ways to get what I want.	0.36	0.24	0.29
GSE3	It is easy for me to stick to my aims and accomplish my goals.	**0.60**	**0.71**	0.32
GSE4	I am confident that I could deal efficiently with unexpected events.	**0.69**	**0.56**	0.37
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	**0.68**	**0.48**	**0.46**
GSE6	I can solve most problems if I invest the necessary effort.	**0.62**	**0.51**	**0.48**
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	**0.59**	**0.52**	**0.44**
GSE8	When I am confronted with a problem, I can usually find several solutions.	**0.60**	0.25	**0.45**
GSE9	If I am in trouble, I can usually think of a solution.	**0.75**	**0.43**	**0.50**
GSE10	I can usually handle whatever comes my way.	**0.72**	**0.49**	**0.51**
AHS-P	I can think of many ways to get out of a jam.	**0.71**	**0.53**	**0.72**
AHS-A	I energetically pursue my goals.	**0.61**	**0.79**	**0.53**

AHS-P	There are lots of ways around any problem.	**0.46**	0.32	**0.72**
AHS-P	I can think of many ways to get the things in life that are important to me.	**0.57**	**0.66**	**0.78**
AHS-P	Even when others get discouraged, I know I can find a way to solve the problem.	**0.65**	**0.62**	**0.77**
AHS-A	My past experiences have prepared me well for my future.	**0.49**	**0.57**	**0.64**
AHS-A	I've been pretty successful in life.	**0.43**	**0.78**	**0.46**
AHS-A	I meet the goals that I set for myself.	**0.47**	**0.84**	**0.48**

Note: Correlations >.40 represented in bold
AHS-P represents Pathway items
AHS-A represents Agency items

Hierarchical Multiple Regression

Hierarchical Multiple Regression General Self-Efficacy, Hope, and Flourishing

A hierarchical regression analysis was conducted (n=266) to explore the relationship between general self-efficacy (Schwarzer & Jerusalem, 1995) and hope (Snyder et al., 1991) with flourishing (Diener, 2010). The study employed a two-step approach where step one introduced the independent predictor variable of general self-efficacy followed by the independent predictor variable of hope. This analysis measured the unique variance each variable contributed to the dependent variable of flourishing.

Cronbach's Alpha (Cronbach, 1951) was conducted for each scale. Each measure indicated good internal reliability within the sample as all measures exceeded (> .7). The flourishing scale consisted of 10 items (α =.889), the general self-efficacy scale consisted of 10 items (α = .862) and the adult hope scale consisted of 8 items, 4 items representing a subset of hope-agency and 4 items representing a subset of hope-pathways items (α = .892).

The correlation matrix revealed slightly inflated correlations among the two independent variables, general self-efficacy and hope, indicating the potential of collinearity within the model (see Table 4.1). Correlations of independent variables more than (> .7) can indicate the presence

of collinearity in the sample making the analysis less reliable (Dormann et al., 2012; Tabachnick & Fidell, 2004).

To further identify the presence of collinearity, the variance inflation factor (VIF) was analyzed. A VIF of 1 indicates that variables are not correlated, whereas a VIF between 1 and 5 shows that variables are moderately correlated. A VIF between 5 and 10 indicates that variables are highly correlated (O'Brien, 2007). The variance inflation factor (VIF) denoted a value of 2.26 for both general self-efficacy and hope indicating the presence of low to moderate collinearity within the sample (Table 4.3). This low inflation was acknowledge yet determined to be sufficient to continue the analysis. A review of the tolerance measure within the collinearity statistics (Table 4.3) indicated a measure of .443 exceeding the (< .1) value used to indicate significant collinearity (Kutner et al., 2005). This assessment provided confidence in the measurement to continue the hierarchical multiple regression. As noted, these indicators represent a presence of correlation and collinearity within the sample. It is also noted there is an a priori position that both general self-efficacy and hope have the potential to represent correlations within the measurements based on the origins of their respective constructs, measurement design, and research questions for this study.

Table 4. 1

Correlations for Hierarchical Multiple Regression of the Adult Hope Scale, General Self-Efficacy and Flourishing (n=266)

		Mean	Std. Dev	Flourish	GSE	Hope
Pearson Correlation	Flourish	48.989	6.125	1.000		
	GSE	33.489	3.965	0.631*	1.000	
	Hope	54.786	7.048	0.808*	0.746*	1.000

Note: *p < .001

Hierarchical Multiple Regression Model Summary

The regression model (Table 4.2) predicted approximately 65% of variance in flourishing (adj. $R^2 = .652$, $F(1,263) = 249.76$, $p < .001$). In Step 1, general self-efficacy accounted for approximately 40% of the variance in flourishing (adj. $R^2 = .396$, $F(1,264) = 174.59$, $p < .000$). In Step 2, hope was entered contributing an additional 26% of the variance in flourishing, $R^2 = .655$, $\Delta R^2 = .257$, $F(1,263) = 195.99$, $p < .000$). Reviewing the coefficients for the individual independent (Table 4.3) revealed that hope was statistically significant at ($\beta = 0.662$, $p < .000$) while general self-efficacy was not determined to be statistically significant at ($\beta = 0.096, p < .254$). This result indicates that although general self-efficacy was represented as contributing variance to the dependent variable of flourishing the contribution could have been due to chance.

Table 4. 2

Model Summary for Hierarchical Multiple regression of the Adult Hope Scale, General Self-Efficacy and Flourishing (n=266)

Model	R	R Square	Adj R Square	R Square Change	F Change	df1	df2	Sig. F Change
1[a]	.631[a]	0.398	0.396	0.398	174.586	1	264	0.000
2[b]	.809[b]	0.655	0.652	0.257	195.990	1	263	0.000

a. Predictors: (constant), GSE
b. Predictors: (Constant), GSE, Hope
c. Dependent Variable: Flourish

Table 4. 3

Coefficients (a) for Hierarchical Multiple Regression of the Adult Hope Scale, General Self-Efficacy and Flourishing (n=266)

	β	Std Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	16.352	2.487		6.574	0.000		
GSE	0.975	0.074	0.631	13.213	0.000	1.000	1.000
(Constant)	9.496	1.949		4.873	0.000		
GSE	0.096	0.084	0.062	1.144	0.254	0.443	2.258
Hope	0.662	0.047	0.762	14.000	0.000	0.443	2.258

a. Dependent Variable: Flourish

Hierarchical Multiple Regression General Self-Efficacy, Hope-Agency, Hope-Pathways and Flourishing

An additional hierarchical regression analysis was conducted to explore the impact of general self -efficacy (Schwarzer & Jerusalem, 1995) and hope (Snyder et. al., 1991) when the dispositional hope scale is separated into its two bidimensional subscales; hope- agency and hope-pathways. The three independent variables were then regressed on the dependent variable of flourishing (Diener et al., 2010). The study employed a two-step approach first, introducing the predictor of general self-efficacy followed by the subscales of hope-agency and hope-pathways.

Cronbach's Alpha (Cronbach, 1951) was conducted for each scale. Each measure indicated good internal reliability within the sample as all measures exceeded (>.7). The Flourishing scale consisted of 10 items (α =.889), the general self-efficacy scale consists of 10 items (α = .862), the subset of the adult hope scale, hope-agency consisting of 4 items (α = .834) and the subset of the adult hope scale, hope-pathways consisting of 4 items (α = .845).

The correlation matrix revealed a slightly inflated correlation among the independent variables, general self-efficacy and hope-pathways at .710 (Table 5.1), indicating the potential presence of collinearity. Correlations of independent variables more than (>.7) can indicate the presence of collinearity in the sample making the analysis less reliable (Dormann et al., 2012; Tabachnick & Fidell, 2004). Additional analysis was conducted to determine if the presence of collinearity would influence integrity of the analysis.

The variance inflation factor (VIF) was analyzed to determine the potential existence of collinearity. The variance inflation factor (VIF) indicated values for general self-efficacy (2.26), hope-agency (1.923), and hope-pathways (2.313) indicating the presence of low to moderate collinearity within the sample (see Table 5.3). According to O'Brien (2007) a VIF of 1 indicates

that variables are not correlated, whereas a VIF between 1 and 5 shows that variables are moderately correlated. A review of the tolerance measure within the collinearity statistics (see Table 5.3) indicated a measure for general self-efficacy (.441), hope-agency (.520), and hope-pathways (.432) exceeding the (< .1) value indicating acceptance within the sample (Kutner et al., 2005). These results provide confidence in the sample to continue the hierarchical multiple regression. It is acknowledged there is a presence of correlation and collinearity within the sample but not to the degree to discount the sample or abandon the model. As mentioned previously, there is an a priori position that both general self-efficacy and hope will be correlated based on the origins of their respective constructs, measurement design, and research question for this study.

Table 5. 1

Correlations for Hierarchical Multiple Regression of the Adult Hope Scale-Agency, Adult Hope Scale-Pathways, General Self-Efficacy Scale and Flourishing (n=266)

	Variable	Flourishing	GSE	AHS-Agency	AHS-Pathways
	Flourishing	1.000			
Pearson	GSE	0.631*	1.000		
Correlation	AHS-Agency	0.777*	0.636*	1.000	
	AHS-Pathways	0.704*	0.710*	0.645*	1.000

Note: *$p < .001$

Hierarchical Multiple Regression Model Summary

The overall hierarchical regression model predicted approximately 67% of variance in flourishing (adj. $R^2 = .673$, $F(2,262) = 112.55$, $p < .000$). In Step one, general self-efficacy was entered accounting for approximately 40% of the variance in flourishing (adj. $R^2 = .396$, R^2 Change = .398, $F(1,264) = 174.59$, $p < .000$). In Step 2, hope-agency and hope-pathways were entered. Both subsets of hope contributed an additional 28% of the variance, $R^2 = .676$, ΔR^2 =

.278, F(2, 262) = 112.55, $p < .000$), in flourishing beyond the variance associated with general self-efficacy (see Table 5.2).

In addition, when reviewing the Beta scores and coefficients (see Table 5.3), hope-agency ($\beta = 0.984$, $p < .000$) and hope-pathways ($\beta = 0.424$, $p < .000$) were determined to be statistically significant within the model while general self-efficacy ($\beta = .115$, $p < .160$) was determined not to be statistically significant. As revealed in the prior analysis, although general self-efficacy was represented as contributing to the model with the dependent variable of flourishing the contribution could have been due to chance.

Table 5. 2

Model Summary for Hierarchical Multiple Regression of the Adult Hope Scale-Agency, Adult Hope Scale-Pathways, General Self-Efficacy Scale and Flourishing (n=266)

Model	R	R Square	Adj R Square	R Square Change	F Change	df1	df2	Sig. F Change
GSE	.631[a]	0.398	0.396	0.398	174.586	1	264	0.000
Hope	.822[b]	0.676	0.673	0.278	112.550	2	262	0.000

a. Predictors: (Constant), GSE
b. Predictors: (Constant), GSE, Hope-Agency, Hope-Pathways

Table 5. 3

Coefficients for Hierarchical Multiple Regression of the Adult Hope Scale-Agency, Adult Hope Scale-Pathways, General Self-Efficacy Scale and Flourishing (n=266)

Model	β	Std Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	16.352	2.487		6.574	0.000		
GSE	0.975	0.074	0.631	13.213	0.000	1.000	1.000
(Constant)	10.570	1.910		5.536	0.000		
GSE	0.115	0.082	0.075	1.410	0.160	0.441	2.266
Hope Agency	0.984	0.090	0.531	10.888	0.000	0.520	1.923
Hope Pathways	0.424	0.074	0.308	5.763	0.000	0.432	2.313

a. Dependent Variable: Flourish

CONCLUSION

Overview of Purpose

This study compared the constructs and psychometric properties of general self-efficacy, specifically as proposed by Schwarzer and Jerusalem (1995), and hope as defined and measured by Snyder et al. (1991). Challenges, similarities, and differences between these two concepts have been presented. A notable challenge to understanding hope and general self-efficacy were presented in the findings of Zhou and Chun Seng Kam (2016) that established the measurement properties of these two constructs as the same and challenged the research community to consider additional research on these concepts. Other researchers have found differing results that support the position that hope and general self-efficacy are similar, yet separate constructs both conceptual and empirically (Magaletta & Oliver, 1999; Munoz et al., 2017) when comparing hope with the general self-efficacy model of Sherer et al., (1982) and the Self Efficacy Scale. This research study posed three questions related to these previous results to add to the existing literature and better understand the underlying properties of both constructs.

To explore and measure the similarities and/or differences between the concepts of hope and general self-efficacy the study reviewed the existing literature and conceptual aspects of both theories. The study employed an exploratory factor analysis to explore the underlying factor structure and items related to each construct and conducted an additional exploratory factor analysis to determine how each model performs when combined. And finally, a hierarchical multiple regression analysis was performed to understand the relationship of each construct as it relates to a third dependent variable.

Discussion

The details of the results appeared in the previous chapter and will be further analyzed and discussed in this section. The findings in this study are discussed in terms of the research questions and were framed to answer the following:

1. Do the constructs of general self-efficacy (GSE) and hope theory explain the same cognitive phenomenon in positive psychology?
2. Do the measurement scales of general self-efficacy as described in the Schwarzer and Jerusalem General Perceived Self-Efficacy Scale (1995) and Adult Hope Trait Scale (1991) measure the same construct?
3. Does Hope explain variance beyond generalized self-efficacy when correlated with the positive psychological construct of Diener's Flourishing Scale (2010)?

To explore and analyze these questions a convenience sample of 267 human services professionals residing in the Southern plains of the U.S. completed a self-report questionnaire consisting of the General Self-Efficacy Scale, a 10 item scale created by Schwarzer & Jerusalem (1995), the Dispositional Adult Hope Scale, an 8 item scale created by Snyder et al. (1991) and, the Flourishing Scale, a 10 item scale established by Diener (2010). To answer the first question, a review of the existing literature was conducted to determine the origins, similarities and differences of each construct. For question one and two, responses from the survey were analyzed using an exploratory factor analysis. The common factor approach employed principal axis factoring and applied Promax as an oblique rotation technique to determine the existence of simple structure within the models. To answer question number three, a hierarchical multiple regression analysis was used to measure any potential correlations and/or distinct variance

associated with the independent variables of general self-efficacy and hope with the dependent variable of flourishing.

Research Question One

Do the constructs of general self-efficacy (GSE) and hope theory explain the same cognitive phenomenon in positive psychology? A review of the literature regarding both constructs suggests that hope and general self-efficacy are separate and distinct constructs that share substantial similarities. Both constructs have a dispositional, trait-based approach, based on positive expectancy, are future oriented and based on an agentic perspective (Shelton, 1990; Snyder et. al., 1991; Schwarzer, 1994; Schwarzer & Jerusalem, 1995; Rand, 2018). Although similar, the constructs of hope and general self-efficacy are separate.

Hope theory is conceptualized as a dispositional construct predicated on the assumptions that individuals are goal directed, intentional and action-oriented in their assessment of attaining future focused goals (Snyder, 2002). Hope is designed on a cognitive, reciprocal relationship between an individual's agency, or will power, in determining the requisite motivation and ability to initiate and sustain goal directed actions and includes a parallel cognition where the individual generates and plans one or more pathways, or way power, required to acquire the desired outcome or goal. This dual process of agency and mental mapping considers both the motivation to pursue goals, and the ability to devise strategies to reach those goals. (Snyder et al., 1991; Snyder, 2000, 2002). Snyder et al., (1991) stated that both agency and pathway cognition are necessary, that neither is sufficient to define hope and there is no linear relationship between the two. In other words, there is no one-directional process where individuals assess their capability of achieving a goal before considering the outcomes and pathways needed to achieve a goal. The iterative process of hope continues to assess and reassess the agency and pathways

thinking needed for goal acquisition. This evaluation continues even after a goal or outcome is established and acts to inform the individual throughout the goal acquisition process. In addition, hope theory can be operationalized at both a cross-sectional and situational level.

General self-efficacy is an expansion of Bandura's theory of perceived self-efficacy which is a key component within social cognitive theory (Bandura, 1977; Sherer et al., 1982; Shelton, 1990; Schwarzer & Jerusalem, 1995a, 2001). As an expansion of the perceived self-efficacy concept, it is difficult to separate the context of general self-efficacy from Bandura's original theory. Although self-efficacy is a goal-oriented theory like hope, Bandura anchored self-efficacy in the position that cognitive processes are a means to establish and reinforce an individual's personal efficacy (Bandura, 1977). He defined efficacy expectations as, "…the conviction that one can successfully execute the behavior required to produce the outcome." (Bandura, 1977, p. 193). Bandura also described the separate concept outcome expectancy where individuals assess when executing a particular behavior would lead to a certain outcome yet placed a sequential order in the way an individual considers actions toward their goals.

Bandura's efficacy expectancy and outcome expectancy have been considered similarly to Snyder's hope's agency and pathway components, respectively. Schwarzer stated these similarities on several occasions (Schwarzer & Jerusalem, 1994; Schwarzer, 1995) and Snyder acknowledged these concepts as somewhat similar (Snyder et al., 1991; Snyder 1994, 2000, 2002). Although there is acknowledgement that components of these theories are somewhat similar, the differences in the models have been consistently noted (Snyder et. al., 1991; Snyder 1994, 2000, 2002; Magaletta & Oliver, 1999; Munoz et al., 2017; Rand, 2018) and worth repeating again. Hope theory is based on agency and pathways thinking, working together to inform, initiate and sustain actions toward goals where goals may be determined to be situational

or cross-situational in nature (Snyder, 2000). Bandura, conversely, advocated for situation-based or domain focused approaches when considering interventions. Although he recognized other determinants impacting behavior, including outcome expectations, he consistently considered self-efficacy as the primary and causal determinant regarding an individual's decision to advance their behavior toward a goal (Bandura, 2012). In this position, Bandura may discount the order in which outcome expectancies may influence efficacy expectations. This position is not new (Williams, 2010) but important in distinguishing the differences between these theories.

In addition, self-efficacy is an evaluation of the belief that an individual can execute the behaviors required to attain a goal, whereas hope is a goal-directed, action-oriented concept designed to assess the belief that an individual can initiate and sustain their personal agency while generating plans, pathways, and alternatives to overcome obstacles in acquiring a goal (Snyder, 2002). This difference was cited by Rand (2018) as self-efficacy considers that an individual 'can' execute behaviors toward a goal, hope considers that the individual 'will' execute the behavior toward attaining goals. Because general self-efficacy is an extension of Bandura's concept of perceived self-efficacy, the model described by Bandura also pertains to general self-efficacy. There is no provision in general self-efficacy explanations that repositions the self-efficacy mechanism of operations.

An additional significant difference related to these concepts is the focus on the psychological phenomenon that each construct is designed to explain and measure. As noted previously, hope is a goal-centric, dispositional approach designed to measure and predict the cognitive processes of agency and pathways thinking as it relates to attaining a desired outcome or goal. General self-efficacy was conceptualized as a trait-based approach to assess the belief about an individual's ability to navigate obstacles in daily life (Sherer, 1982) and predict how

individuals cope and adapt to stressful life experiences (Schwarzer & Jerusalem, 1995). Proponents of general self-efficacy advocate for establishing a global aspect of self-efficacy that allows for the explanation of how self-efficacy can explain or predict relationships in other broad-based concepts such as well-being or health outcomes. Yet, Bandura defined the concept as situationally specific, although he later elaborated on the concept describing a broader domain-specific context (Bandura, 2012). Researchers such as Sherer, Schwarzer, Shelton, and Chen believe that individuals acquire competence and confidence in self-efficacy as they meet expectations related to the outcomes and goals deemed important (and lose efficacy in failed outcomes and experiences). General perceived self-efficacy is then enhanced and reinforced when an individual is evaluating behaviors for subsequent outcomes or goals. General self-efficacy authors theorize that this aggregated effect of self-efficacy is available for future evaluations of behaviors across all experiences, whether it is situational, cross-situational, within a domain or across any domain.

Lastly, it must be restated that Bandura argued against a generalized concept or measurement of self-efficacy represented as a broad, general concept across domains. Bandura stated this position in his original writings (Bandura, 1977) that self-efficacy was situation specific but could expect some generalization across specific domains and maintained this position over numerous published works (Bandura, 1977, 1997, 2012, 2015). Bandura stated that self-efficacy explains an individual's belief in their capabilities to produce a desired outcome (Bandura, 2006) but individuals, "… differ in their efficacy, not only across different domains of functioning, but even across various facets within an activity domain. Consequently, there is no single all-purpose measure of self-efficacy with a single validity coefficient." (Bandura, 2012, p. 15). Bandura agreed that an individual's belief in their capabilities to execute behaviors toward

outcomes informed an individual's competence in future experiences, yet he did not theorize that those experiences were trait-based or applicable across all aggregated experiences an individual encounters in life (Bandura, 2015). Despite Bandura's position, the concept and measurement scales in considering a generalized form of self-efficacy have existed for over forty years (Sherer, 1982; Schwarzer & Jerusalem, 1995; Chen, 2001) with studies providing valid and reliable measures assessing the concept in relation to other broad psychological construct and narrower situation-based applications. Yet, confusion exists on how general self-efficacy and the original construct of Bandura's self-efficacy are explained and co-exist conceptually and psychometrically.

Research Question Two

In answering the second research question, "Do the measurement scales of general self-efficacy as described in the Schwarzer and Jerusalem General Perceived Self-Efficacy Scale (1995) and Adult Hope Trait Scale (1991) measure the same construct?" the results of the exploratory factor analysis indicates that Schwarzer and Jerusalem's General Perceived Self-Efficacy Scale does not measure the same construct as Snyder's Dispositional Adult Hope Scale. The analysis was sequenced to first determine if both concepts were representative of their original construct intent.

An exploratory factor analysis was conducted on both the General Self-Efficacy Scale and the Adult Hope Scale. The factor analysis related to general self-efficacy produced one latent factor for the 10-item scale. This finding is consistent with the original design of general self-efficacy as a unidimensional measure. When reviewing the factor matrix specific to general self-efficacy, nine of the ten items were above the (< .4) threshold with only one item, question

number two, “If someone opposes me, I can find the means and ways to get what I want.”, below the (< .4) threshold.

The exploratory factor analysis conducted for the Adult Hope Scale resulted in a two-factor model that directly aligned with the subset of hope-agency and the subset of hope-pathways. The two-factor model is consistent with Snyder’s original scale construction that represented bidimensional factors, four items associated with agency and four items associated with pathways, when scored combined to establish a single score for Hope. In this analysis the four hope-pathway items loaded on a singular factor and three of the four hope-agency items loaded on a single factor. One item originally associated with agency, “My past experiences have prepared me well for my future.” cross-loaded on the pathways factor. The goal of sequencing was to determine if the sample reflected the original intent of a bidimensional model. Although the results of the two separate analyses returned a single instance where one item did not load on the intended factor, the evidence was sufficient to continue the analysis with confidence.

Upon determining that the sample was representative of both concepts, an exploratory factor analysis was conducted that combined both scales to determine the latent structures of the scales when combined. The results were conclusive when examining the pattern matrix, post rotation, that three distinct factors were present in the model and that each factor was represented by items associated with the original scales, with a few exceptions. In relation to the general self-efficacy scale nine of the ten items loaded solely on the factor related to general self-efficacy. One item, GSE2, “If someone opposes me, I can find the means and ways to get what I want.” loaded on the factor at (.29) but lower there the (> .4) threshold determined as significant for the study. One item, GSE3, “It is easy for me to stick to my aims and accomplish my goals.” loaded on the factor associated with hope and the subset of hope-agency. In relation to the adult hope

scale, one item associated with the subset of hope-agency, “My past experiences have prepared me well for my future.” loaded on the subset of hope- pathways. This result was also reported in the independent factor analysis of the adult hope scale. Only one item indicated a significant cross-load (> .4) between the general self-efficacy scale and the hope scale within the pattern matrix. The item associated with pathways, “I can think of many ways to get out of a jam.” was present on the factor associated with general self-efficacy at (.41) and present on the factor associated with pathways at (.45). Even considering the very close relationship between the two factors, the item was associated at a higher level with the hope-pathway subset originally linked to the Adult Hope Scale.

The examination of the pattern matrix leads to compelling evidence that Schwarzer and Jerusalem’s General Self-Efficacy Scale and Snyder’s Adult Hope Scale are two separate measurement scales, however, it must be noted and established that the sample produced significant correlations and overlap represented in the structure matrix. The structure matrix combines all shared or common variance, unique variance and sample error within items and within factors. It is an amalgamation of all inter-related relationships within the variables. These correlations were expected to occur as the underlying principles of the constructs share some similar basis in construct development which would be represented in scale design and item selection that can lead to similar results and correlations. However, the post-oblique rotation established the presence of unique variance within the items and factors of the pattern matrix, indicating a model that is independently representative of general self-efficacy and hope as different and not the same measurement scales.

The sample within this study reached simple structure after rotation representing three separate factors. These common factors represent specific variables with large factor loadings on

one factor and smaller factor loadings on additional factors making the model easy to interpret. In addition, the model indicated some overlap between the measured variables, yet distinguishable among the factors, with only one item cross-loading on two separate factors at the (>.4) threshold, (Hope-pathways question, "I can think of many ways to get out of a jam". In addition, these three factors represent known determinants related to Snyder's Adult Hope Scale and Schwarzer and Jerusalem's General Self-Efficacy Scale providing additional evidence that the simple structure was achieved post-rotation (Fabrigar & Wegner, 2012; Kline, 1994).

Research Question Three

In response to the third research question, **"**Does Hope explain variance beyond generalized self-efficacy when correlated with the positive psychological construct of Diener's Flourishing Scale (2010)?", the results of the study indicate that Hope does explain variance beyond General Self-Efficacy when correlated with Flourishing. A hierarchical multiple regression was conducted with general self-efficacy and hope as independent predictor variables and flourishing as the dependent variable. A two-step approach was employed where general self-efficacy was introduced first and then hope as represented by the dispositional adult hope scale. The results showed that general self-efficacy contributed a significant amount of variance in the model ($\Delta R^2 = 0.398$), indicating that higher general self-efficacy scores were associated with higher flourishing scores. When adding hope in the second step, hope contributed an additional 26% of variance ($\Delta R^2 = 0.257$) to the model. In addition, when analyzing the coefficients for the model, hope was determined to be statistically significant at ($\beta = 0.662$, $p < .000$). The coefficients related to general self-efficacy were determined not to be statistically significant at ($\beta = 0.096$, $p < .254$). This finding represents that although general self-efficacy

contributes approximately 40% of variance within the model, the lack of statistical significance renders the general self-efficacy result unreliable and represented as possibly due to chance.

An additional hierarchical multiple regression was conducted using general self-efficacy as an independent variable and using both subsets of the adult hope scale, the subset of hope representing the agency factor and the subset of hope representing the pathways factor of hope as independent variables. Flourishing served as the dependent variable, once again, in this model. The hierarchical multiple regression was employed in two steps. In step one, general self-efficacy was entered and again resulted in a significant amount of variance in the model ($\Delta R^2 = 0.398$). In step two, the agency subset and hope subset were entered simultaneously and resulted in a slightly different outcome contributing an additional 28% of variance ($\Delta R^2 = 0.278$) to the model. Yet when analyzing the coefficients and statistical significance the hope-agency subset resulted in ($\beta = 0.984$, $p < .000$) and hope-pathways subset resulted in ($\beta = 0.424$, $p < .000$) indicating that both subsets returned a statistically significant contribution to the model. As seen in the previous model, general self-efficacy was not determined to be statistically significant within the model ($\beta = 0.115$, $p < .160$).

Results indicate that both models are significant overall, yet, when observing the variables separately, p-values associated with general self-efficacy breached the established significance level of (< .05) at (.160) potentially indicating that general self-efficacy does not have a statistically significant relationship with the dependent variable in relation to the model within this sample.

As noted in the results of research question number two, it must be acknowledged that high correlations among the independent variables are present (.746) and collinearity is also present when analyzing the VIF (variance inflation factor). The VIF indicated an

inflation factor over 1 at (2.26) but a factor less than 5 indicating an elevated value of collinearity but not significant to warrant the results of the model as compromised. The conditions for evaluating research question number three were met and the results indicate that both general self-efficacy and hope contribute significantly to flourishing yet, hope explains variance beyond generalized self-efficacy when correlated with the positive psychological construct of flourishing. In addition, with significance levels of general self-efficacy were not met and evidence may support the position that hope is a mediator variable when in the presence of general self-efficacy and flourishing/well-being (Baron & Kenny, 1986).

Results indicate that both hierarchical multiple regression models are significant overall, yet, when observing the variables separately, p-values associated with general self-efficacy breached the established confidence level of <.05 at (.254) in the first model and (.160) in the second model. These results potentially indicate that general self-efficacy does not have a statistically significant relationship with the dependent variable in relation to the current model and sample. Considering high correlations and presence of collinearity, these results could be a result of common method variance as the self-reporting scales are similar in their content and measurement method. An additional consideration is that hope may be a mediator variable when in the presence of general self-efficacy and flourishing/well-being. This result would be similar to previous results identified by Ekinci & Koc's (2022) where hope was identified as a mediator when in the presence of general self-efficacy and life satisfaction. Additional analysis and tests for each consideration were not applied in this study.

Overarching Findings of the Study

The study provides support that hope and general self-efficacy are separate constructs both conceptually and psychometrically. Hope and general self-efficacy share similarities as agentic, dispositional measures that seek to explain the motivational cognitive processes individual's employ related to goal related behavior yet, these models operationalize these similarities in different conceptual approaches explaining two separate psychological phenomena. Hope is a goal directed, bidimensional model consisting of both agency and pathways thinking working in unison to explain how an individual actively plans and pursues goals at situational or across situational levels. General self-efficacy is a unidimensional measure, based on Bandura's concepts of self-efficacy, which seeks to explain an aggregated effect of how individuals manage and cope with daily stresses and challenges. The aggregated effect of experiences is theorized to impact an individual's confidence in their abilities to employ successful behaviors in future experiences at a situation, domain or across domain level. Hope and general self-efficacy conceptually attempt to explain similar, yet different aspects of cognition associated with goal-related behaviors.

This study also supports hope and general self-efficacy as similar, yet separate psychometric measures. Results of an exploratory factor analysis supported the original research proposed by Snyder et al. (1991) and validated in additional studies (Babyak et al., 1993; Magaletta & Oliver, 1999; Roesch & Vaughn, 2006; Gomez et al., 2015; Munoz, 2017) that hope is a two-factor construct designed to represent the concept of agency thinking and a separate concept representing pathways thinking. The analysis also supported general self-efficacy as a single, unidimensional factor as proposed by Schwarzer and Jerusalem (1995). The factor analysis applied a principal axis technique producing three separate latent factors supported by

the results of the pattern matrix obtained through a Promax, oblique rotation. These results support the earlier findings of Magaletta & Oliver (1999), Munoz et al. (2017), and Ekinci & Koc (2022) as hope and general self-efficacy representing separate constructs and provide support for the model achieving simple structure. These results contrast with the findings of Zhou and Chun Seng Kam's (2016) study supporting a unidimensional factor for both hope and general self-efficacy, as defined by Schwarzer and Jerusalem. These results are also in contrast with Zhou and Chun Seng Kam's (2016) findings that hope, and general self-efficacy may represent the same construct.

In addition, this study found support for differences through the results of a hierarchical multiple regression model where hope and general self-efficacy were presented as independent variables and Diener's Flourishing Scale characterized well-being as the dependent variable. Results of the regression model revealed that general self-efficacy explained variance (.396) and hope explained significant variance (.257) beyond general self-efficacy. Additionally, hope explained significant variance beyond general self-efficacy when considering both subsets of hope, hope-agency and hope-pathways (.278).

Lastly, there are potential results that hope may be a mediator when present with general-self efficacy and well-being. As the overall model for general self-efficacy and hope as a predictor of well-being was met, the individual contribution of general self-efficacy was not significant (.254) in explaining the variance in well-being. Although correlations and presence of collinearity exist in the sample, this result indicates that hope may be a mediator in the presence of general self-efficacy and well-being. This finding is similar with Ekinci & Koc's (2022) research results indicating hope mediates the effects of general self-efficacy in relation to life satisfaction.

In highlighting the results that indicate that hope and general self-efficacy are separate and distinct concepts, this study also recognizes the similar construct elements and significant correlations and overlap between both variables as evidenced in the factor analysis and hierarchical multiple regression. Yet, as both concepts have been shown to be similar, the findings of this study support the position that hope, as defined and measured by Snyder et al., and general self-efficacy, as defined and measured by Schwarzer and Jerusalem, are both conceptually and psychometrically different constructs.

Implications of the Study

Considering the Concepts of Outcomes

The result of this study contributes to the explanation that general self-efficacy (Schwarzer & Jerusalem, 1995) and hope (Snyder et al., 1991) share similarities within their respective frameworks yet provides support that each concept is different both conceptually and psychometrically. One of the significant differences relates to how the concept of outcomes are considered within hope and self-efficacy, and by extension, general self-efficacy. Hope is goal-directed and consists of both pathways and agency thinking working as an iterative process in determining an individual's perceptions toward goal attainment (Snyder et al., 1991). Bandura's concept of self-efficacy also focuses on the perception of an individual's capability of evaluating behaviors toward goal attainment but did not place the same value on outcome expectancy within the self-efficacy model. He considered self-efficacy as the focal point in the theory that influenced other determinants of behavior like outcome expectations, goals and other socio-structural factors (Bandura, 1977, 2012). Hope considers pathways thinking equal and iterative

to agency thinking, whereas Bandura considered self-efficacy as a causal link to outcome expectations of behavior (Bandura, 1977, 2001, 2012, figure 1, 2).

Hope and general self-efficacy are similar yet separate conceptual theories. Hope is a dynamic and bi-directional process based on an individual's ability to envision, initiate, and sustain action toward a goal, while self-efficacy is a linear process when considering an individual's perception of confidence related to behaviors an individual may perform when evaluating potential outcomes.

Considering the Concept of Agentic Perspective

An additional underlying similarity of both constructs the link to the concept of agency or an agentic perspective, that individuals act independently and make choices that impact their lives.

Bandura provided significant context related to human agency and how the features of human agency relate to perceived self-efficacy and social cognitive theory (Bandura, 2001, 2006, 2018). Snyder also provided an understanding and description of an agentic self within hope theory (Little, Snyder, & Wehmeyer, 2006). Snyder clearly underscored the importance of an agentic perspective within individuals and how their motives, beliefs and behaviors coordinate toward life goals. This importance is reflected in 'agency' as one of the two primary drivers of the theory. Agency, according to Snyder, is the motivational component of the concept where agency thoughts act as the actionable drivers of pathway planning that serves to initiate and sustain an individual throughout the goal attainment process. Agency is particularly important when obstacles to perceived paths are encountered (Snyder, 2002). In addition, Snyder considers agency as a cognitive process that includes an evaluation of goals in the past and future in considering how a goal will be achieved in the present.

According to Bandura, an agentic perspective is the basis for social cognitive theory (Bandura, 2012, 2015, 2018). Bandura described an agentic perspective as having four key features of human agency; intentionality, forethought, self-reactiveness and self-reflectiveness (Bandura, 2001). Bandura placed specific emphasis on the feature of self-reflectiveness in his perception of human agency (Bandura, 2001, 2018).

The model of perceived self-efficacy is greater than the features of human agency and includes determinants such as goals, socio-structural factors and outcome expectations, yet in relation to cognitive aspects of the theory, the concept of self-reflectiveness is presented prominently. Bandura explains this conceptually in several instances when discussing the importance of the self-reflection feature and how the feature plays a significant role for an individual when determining efficacy (Bandura, 2001, 2012).

Understanding the agentic perspective in the design of the self-efficacy construct is important if general self-efficacy is an expansion of the self-efficacy theory. If agency (hope) is similar to perceived self-efficacy (self-efficacy theory) when considering the cognitive aspects of how individuals advance toward goal attainment, the question of what general self-efficacy is measuring may need to be further understood. It is unclear if general self-efficacy scales include items that approach the agentic features, such as self-reflectiveness, as described by Bandura in measuring generalized self-efficacy. Specifically, Schwarzer and Jerusalem's General Self-Efficacy Scale, state the purpose of the scale, "…was created to assess a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events." (Schwarzer & Jerusalem, 1995, APA PsycTests). Per this approach, the construct of coping may be the target of the measure. It could be conceived that the General Self-Efficacy Scale is a trait-based, broad measure for the

construct of coping. Schwarzer and Jerusalem have produced several studies (Schwarzer & Jerusalem, 1994) that apply their general self-efficacy measure with results stating, "The measure of generalized self-efficacy taps a broad concept of optimism and perceived overall coping competence." (Schwarzer & Jerusalem, 1995, p. 172). Understanding and measuring the level of managing and coping with stressful events is helpful and possibly necessary in assessing the belief of managing current or future experiences, yet it may be helpful to understand if this perspective is representative of all concepts related to the general self-efficacy model.

There may be a need for research to assist the understanding of the components and concepts that guide the general self-efficacy construct, coping appears to be a significant element of the model. Measurement scales for general self-efficacy are not consistent and each scale may measure variables other than intended (Sherer et al., 1982; Tipton & Worthington, 1984; Schwarzer & Jerusalem, 1995; Chen et al., 2001). Rand (2018) called for a similar clarification related to Sherer's et al., (1982) Self-Efficacy Scale, questioning if the measure was evaluating a measure of determination. Whether general self-efficacy considers concepts of coping, self-reflectiveness, or determination as underlying concepts, support for general self-efficacy as a theoretical construct could be improved with the consensus of a singular definition and measure. Also, the general self-efficacy concept would benefit from clarifications on how the construct is synthesized with Bandura's view of perceived self-efficacy, especially when Bandura argued against the collective concept as trait-based and opposed a generalized measurement of perceived self-efficacy.

Considering Additional Measurement Studies

Additional implications of this study support the position that hope and general self-efficacy are separate psychometric measures. An analysis of the factor structure of hope as a

bidimensional measure, consisting of two factors, agency and pathways, was confirmed and general self-efficacy, as defined and proposed by Schwarzer and Jerusalem (1995), was identified as a single, unidimensional model. When reviewing the results, both proposed measures were aligned with their original intent, with a few items cross-loading indicating correlations were present post rotation. Although results for this study indicated support for separate concepts, it must be acknowledged that the presence of correlations and collinearity between concepts exist as well as correlations and overlap of unique variance post rotation among items. This is likely due to item selection and construction of both scales.

When evaluated independently, the General Self-Efficacy Scale (1995) returned a single factor model with a cumulative percentage of variability represented 45.87%. The low cumulative percentage related to the single factor indicates there are significant differences that are unaccounted for in the construct. Additionally, communalities for the General Self-Efficacy Scale (1995), when reviewed independently, were low, yet acceptable. Overall, four of the ten items represented communalities below the (.40) and ranged from (.13-.52) threshold after extraction. Although support of a unidimensional factor is present, these low communalities and low overall low variability indicate that items may weakly associated or not measuring the same underlying construct effectively. These lower threshold results could indicate that item construction could be improved for several variables. Specifically, item GSE2, “If someone opposes me, I can find the means and ways to get what I want”, recorded a communality of (.13) and a factor score of (.29), although the item corresponded with the factor associated with general self-efficacy, the item indicates that it may not measure the intended purpose and should be revisited or removed from the scale. Additionally, item GSE3, “It is easy for me to stick to my aims and accomplish my goals”, revealed a lower communality of (.38) and a factor score of

(.63) which loaded completely on the factor related to hope-agency indicating that the item was more associated with hope-agency than general self-efficacy. The low cumulative percentage related to the single factor indicates there is significant differences that are unaccounted for in the construct. These results indicate a possible need to review items within the General Self-Efficacy Scale.

The hope scale also included measurements questions worth considering. The pattern matrix within the hope scale, revealed a hope-agency specific question, "My past experiences have prepared me well for my future" loaded at a significant level (.53) on the factor related to hope-pathways. This result indicates the item may need to be reevaluated based on which sub-set of the hope model the item best represents. In addition, a second item associated with hope-pathways, "I can think of many ways to get out of a jam.", cross-loaded on the hope-pathways scale at .45 but was also represented on the general self-efficacy scale at .41. These results do not represent a measurement or design issue within the scales yet indicates there are some overlaps related to this specific item within the factors representing each scale.

Regardless of the few instances of overlapping measures, additional focus on item selection may support efforts to separate factors related to the measures associated with the Adult Hope Scale and the General Self-Efficacy Scale while advancing a more transparent simple structure (Fabrigar & Wegener, 2012; Kline, 1994) within both models.

Considering Support for Hope as a Mediator

Lastly, this study reported results that support similar findings from Munoz et al., (2017) that hope accounts for unique variance in life satisfaction, where in this study, hope accounted for significant variance beyond general self-efficacy (.257) and general self-efficacy was also found to contribute to well-being (.398) that was also in support of Magaletta and Oliver's study

(1999). Yet, there is also support within this sample that hope serves as a mediator when in the presence of both general self-efficacy and well-being (Baron & Kenny, 1986). This result is similar to the Ekinci and Koc (2022) study indicating the same result. These results could help clarify how hope and general self-efficacy are similar and different in mediating this relationship through agency and pathways thinking. This finding may also apply to other broad, self-assessing constructs that explain individual perceptions.

Potential Limitations

There are several potential limitations associated with this study that could limit the generalizability of the findings. First, the respondents for the study were drawn as a sample of convenience from a larger population of human service workers within one urban setting from the Southern plains of the United States. Other professions, geographic regions of the U.S, or participants from other countries and cultures may produce different results. Second, the sample size for a study employing an exploratory factor analysis (n = 267) was sufficient in relation to commonly applied and accepted measures for this study, however, it is acknowledged that larger sample sizes allow for greater generalizability to the population at large. A third limitation for this study is the focus related to Schwarzer and Jerusalem's definition and measurement of general self-efficacy. Other researchers have proposed and established measures for general self-efficacy (Sherer et al., 1982; Tipton & Worthington, 1984; Chen et al., 2001) that are similar but claim to have produced better internally reliability and validity measures. It is recognized that other scales not considered in the study could result in different measurement outcomes. And lastly, this study employed only one dependent variable, flourishing. While the results were significant in relation to this singular dependent variable, comparing general self-efficacy and

hope with other meaningful dependent variables may contribute to the findings of this study and expand the knowledge of both concepts.

Conclusions

This study responded to questions related to the similarities and differences of hope theory and general self-efficacy, specifically as identified by Schwarzer and Jerusalem while employing sound methodological standards to guide the research questions presented. This study finds support that general self-efficacy and hope are both conceptually and psychometrically separate constructs that represent the underlying theorized concepts and intended measurement properties of each construct. This study also recognizes and acknowledges the similarities, correlations, and collinearity within the sample making these concepts difficult to separate without significant understanding of each theory. Findings from this research supports prior studies that hope, and general self-efficacy are separate constructs that measure separate psychological phenomena. In addition, the findings support that when hope and general self-efficacy are in the presence of well-being, hope is a better predictor of an individual's well-being. In addition, there is support in the findings that hope may also be a mediator in the relationship between general self-efficacy and well-being.

Both hope and general self-efficacy are tools for research to consider when seeking to understand psychological phenomena. While both measures return support as measures with positive psychometric properties, researchers will need to determine the appropriate measures to include when applying these constructs as these measures are not interchangeable. The utility of hope theory and the measurement of the Adult Hope Scale (1991) may provide future studies a conceptual and psychometrically better choice when research seeks a dynamic, dispositional

measure that benefits the understanding of how individuals approach desired goals and outcomes through an interactive thought process that includes both agency thinking and pathways thinking. General self-efficacy, as measured by Schwarzer and Jerusalem (1995), is a good choice when researchers look to apply a broad, trait-based measure that approximates an individual's broad concept of optimism and coping competence (Schwarzer, 1994; Schwarzer & Jerusalem, 1995a) in evaluating outcomes across multiple types of experiences.

Research in hope theory could be advanced by further focusing on the pathways construct. Hope theory is a significant differentiator in considering goal-directed behavior yet may be enhanced by additional focus on theoretical support taken from Bandura's four aspects of agentic perspectives and additional focus on measurement related to scale items. And finally, proponents of general self-efficacy may benefit from additional explanations related to the relationship between Bandura's self-efficacy concepts and the generalized version of self-efficacy and determine how general self-efficacy could be consistently measured.

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APPENDIX A: General Self-Efficacy Scale (GSES)

General Self-Efficacy Scale (GSES)

Please respond to the following statements using these response categories:

1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true

- I can always manage to solve difficult problems if I try hard enough.
- If someone opposes me, I can find the means and ways to get what I want.
- It is easy for me to stick to my aims and accomplish my goals.
- I am confident that I could deal efficiently with unexpected events.
- Thanks to my resourcefulness, I know how to handle unforeseen situations.
- I can solve most problems if I invest the necessary effort.
- I can remain calm when facing difficulties because I can rely on my coping abilities.
- When I am confronted with a problem, I can usually find several solutions.
- If I am in trouble, I can usually think of a solution.
- I can usually handle whatever comes my way.

APPENDIX B: Adult Hope Scale (AHS)

Snyder's Dispositional (trait) Adult Hope Scale (AHS)

Twelve items measured on an eight-point scale with response options ranging from "Definitely False" to "Definitely True". Items 2, 6, 7, and 8 make up the agency subscale. Items 1, 3, 4, and 5 make up the pathway subscale.

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 = Somewhat False
4 = Slightly False
5 = Slightly True
6 = Somewhat True
7 = Mostly True
8 = Definitely True

- I can think of many ways to get out of a jam.
- I energetically pursue my goals.
- There are lots of ways around any problem.
- I can think of many ways to get the things in life that are important to me.
- Even when others get discouraged, I know I can find a way to solve the problem.
- My past experiences have prepared me well for my future.
- I've been pretty successful in life.
- I meet the goals that I set for myself.

APPENDIX C: Flourishing Scale

Diener's Flourishing Scale (FS)

Directions: Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

- I lead a purposeful and meaningful life.
- My social relationships are supportive and rewarding.
- I am engaged and interested in my daily activities.
- I actively contribute to the happiness and well-being of others.
- I am competent and capable in the activities that are important to me.
- I am a good person and live a good life.
- I am optimistic about my future.
- People respect me.

APPENDIX D: IRB Letter of Approval

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Approval of Initial Submission – Exempt from IRB Review – AP01

Date: April 23, 2024 **IRB#:** 17091

Principal Investigator: Brent L Sadler

Approval Date: 04/23/2024

Exempt Category: 2

Study Title: HOPE AND GENERAL SELF-EFFICACY: COMPARING TWO SIMILAR CONSTRUCTS AND MEASUREMENT SCALES

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research study and determined that it meets the criteria for exemption from IRB review. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the HRPP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Notify the IRB at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-325-8110 or irb@ou.edu.

Cordially,

Aimee Franklin, Ph.D.
Chair, Institutional Review Board