

ABSTRACT

Toby E. Board. EVALUATING THE CORE OF CORE SELF-EVALUATION: A REVIEW OF THE CONCEPTUALIZATION OF THE CONSTRUCT. (Under the direction of Dr. Mark Bowler) Department of Psychology, December, 2024.

This dissertation examined the conceptualization, measurement, and predictive validity of Core Self-Evaluations (CSE) as a higher-order construct in relation to job and life satisfaction. Through analyses including usefulness analysis, relative weights analysis, and structural equation modeling, the study demonstrated that CSE provides incremental and relative importance over its components—self-esteem, generalized self-efficacy, locus of control, and neuroticism—when predicting satisfaction outcomes. Structural comparisons supported an aggregate, formative model where each component contributes uniquely, challenging traditional reflective approaches and advancing our understanding of personality and self-concept. These findings have important implications for theory and practice, offering a refined framework for assessing and applying CSE to predict satisfaction and well-being. By conceptualizing CSE as an aggregate construct, future research can focus on improving its measurement by expanding item content, addressing compensatory scoring, and ensuring its validity across cultures and diverse settings, such as remote work environments and broader life domains beyond the workplace.

EVALUATING THE CORE OF CORE SELF-EVALUATION: A REVIEW OF THE
CONCEPTUALIZATION OF THE CONSTRUCT.

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CHAPTER 1: INTRODUCTION

Core self-evaluation (CSE) garners significant attention in industrial/organizational psychology due to its role as a crucial predictor of job satisfaction (Judge, Locke, & Durham, 1997). Rooted in the desire to encapsulate individuals' core beliefs about themselves and their world, CSE encompasses self-esteem, generalized self-efficacy, locus of control, and neuroticism/emotional stability (Judge, Locke, Durham, & Kluger, 1998). Despite its popularity, concerns arise regarding the conceptualization of CSE and whether it should be deemed a higher-order construct. A key issue centers around the conceptualization of CSE and whether it should be conceptualized as a superordinate or aggregate construct. Initially, CSE was framed as an aggregate of its components, but subsequent research proposed that it operates as a superordinate construct (Judge, Erez, Bono, & Thoresen, 2003). This debate underscores the importance of clarifying the fundamental nature of CSE within psychological frameworks.

Questions have also been raised about whether CSE should be considered a higher-order construct. Although it is typically measured using a single scale composed of multiple traits, some researchers argue that this approach may not offer additional explanatory power compared to considering its components separately (Chang et al., 2012; Johnson, Rosen, & Change, 2011). Furthermore, CSE lacks a cohesive theoretical framework. Initially conceptualized by Judge and colleagues (1997) as a robust predictor of job satisfaction and life satisfaction, CSE integrates elements from various theories, such as social cognitive theory, but does not fully encompass the broader concept of CSE.

This study aims to enhance the understanding and measurement of Core Self-Evaluations (CSE) by investigating its structure, validity, and predictive power regarding job satisfaction. Specifically, the research seeks to assess CSE's value as a higher-order construct by comparing

its predictive capabilities against its four individual components—self-esteem, generalized self-efficacy, locus of control, and neuroticism—through usefulness analysis and relative weights analysis. These analyses test whether CSE, as an integrated construct, offers unique predictive insights beyond the sum of its parts. Furthermore, the study critically evaluates the Core Self-Evaluation Scale (CSES), a widely used measure of CSE, to determine whether its compensatory summed-score approach adequately reflects the contributions and interactions of each CSE facet. Past research (e.g., MacKenzie et al., 2005; Johnson et al., 2008) has highlighted that traditional measurement approaches may not fully capture CSE’s complex and multidimensional nature. By exploring alternative models—such as aggregate or formative measurement structures—this study aims to offer a more precise and nuanced framework for assessing CSE’s role in predicting key outcomes, such as job and life satisfaction, potentially leading to more accurate applications in organizational research and practice.

Understanding and improving CSE is critical, as it has significant implications for individuals and organizations alike. Validating CSE can enhance predictions of job satisfaction and performance, driving employee engagement and retention. High CSE is associated with positive job attitudes, increased productivity, and reduced turnover rates. Furthermore, fostering positive self-evaluations can improve employee well-being, reduce workplace stress, and minimize burnout. Insights from CSE research can also inform leadership development and training, leading to better decision-making and team dynamics. By addressing theoretical and measurement limitations in CSE, this study seeks to refine the construct, providing more accurate assessments and interventions that advance the field of industrial/organizational psychology and benefit organizational practices.

CHAPTER 2: LITERATURE REVIEW

Core Self-Evaluations

Judge, Locke, and Durham (1997) originally developed the concept of Core Self-Evaluations (CSE) as a potential dispositional antecedent of job satisfaction. CSE is described as “fundamental, subconscious conclusions individuals reach about themselves, other people, and the world” (Judge, Locke, Durham, & Kluger, 1998, p. 18). Initially, CSE comprised three core traits: self-esteem, generalized self-efficacy, and neuroticism. Locus of control was incorporated shortly after the initial conceptualization.

Self-esteem reflects individuals' overall evaluation of their worth and competence, while generalized self-efficacy pertains to one's belief in their capability to handle various tasks and challenges effectively. Locus of control refers to the extent to which individuals believe they have control over events in their lives, and neuroticism reflects the tendency to experience negative emotions, such as anxiety, depression, and vulnerability to stress. Together, these components form the basis of individuals' fundamental perceptions of themselves and their interactions with the environment, influencing their attitudes, behaviors, and ultimately, their job satisfaction.

Development

The definition of Core Self-Evaluation (CSE) has evolved. Judge, Erez, and Bono (1998) initially described CSE as fundamental premises individuals hold about themselves. Later, Judge and colleagues (2000) expanded this definition to include self-worth. Despite slight variations in definitions, it is generally understood that CSE encapsulates individuals' fundamental beliefs about themselves and the world, shaping their thoughts and actions (Judge, Locke, & Durham, 1997; Judge, Locke, Durham, & Kluger, 1998). The original researchers proposed that these

subconscious conclusions directly impact job satisfaction (Judge, Locke, & Durham, 1997), life satisfaction, and overall job-related sentiments (Carroll & Blumen, 1973; Saari & Judge, 2004).

Although originating from the work of Edith Packer (1985, 1985/1986), CSE theory was further developed by Judge and colleagues (1997) to elucidate the connection between individual dispositions and job satisfaction. Packer proposed that assessments of specific circumstances are influenced by deeper-level evaluations, which she termed "core evaluations." CSE theory posits that an individual's level of job satisfaction is influenced by dispositional traits, based on three main criteria: evaluation focus, fundamentality, and scope (Judge et al., 1997).

Criteria for CSE

Evaluation Focus. This criterion differentiates between traits that involve self-assessment or evaluation and those that are descriptive in nature. For example, personality traits such as conscientiousness merely describe behavioral tendencies, such as being organized, dependable, or responsible. These are behaviors that can be observed, but they do not necessarily reflect how an individual views their own value or capabilities. In contrast, traits like generalized self-efficacy or self-esteem involve a deeper self-assessment, where individuals evaluate their ability to handle tasks or their overall sense of self-worth. For instance, someone with high self-esteem might believe they are worthy of respect, whereas someone with high generalized self-efficacy believes they can effectively perform in various situations. CSE theory suggests that traits involving this evaluative component, like self-esteem or locus of control, are more strongly linked to job satisfaction because they directly affect how individuals feel about themselves in a work context (Johnson, Rosen, & Levy, 2008). For example, someone with a strong internal locus of control may believe that they are in charge of their career success, which fosters higher job satisfaction.

Fundamentality. This refers to how central a trait is to an individual's self-concept. Traits that are more fundamental to one's sense of self, such as self-esteem, are thought to have a stronger influence on outcomes like job satisfaction. For instance, an individual who feels fundamentally confident in their abilities (i.e., high self-esteem) is more likely to approach challenges at work with a positive mindset, impacting how satisfied they feel with their job. According to CSE theory, traits that are core to how a person views themselves—such as self-efficacy (one's belief in their ability to succeed) or emotional stability (one's ability to remain calm under stress)—play a vital role in determining job satisfaction. In contrast, traits that are less central to self-concept, like agreeableness, which involves how much a person tends to be cooperative or polite, may not have as direct a link to how satisfied one feels at work (Judge et al., 1997; Judge, Erez, & Bono, 1998).

Scope. Scope refers to whether a trait is broad or specific. Broader traits, such as Generalized Self-efficacy (the belief in one's overall ability to succeed across various domains), have been found to be more likely to generalize across different contexts, including the workplace. For instance, an individual with high Generalized self-efficacy will likely feel capable in both personal and professional situations, leading to greater job satisfaction. In contrast, narrower traits, such as parenting self-efficacy (belief in one's abilities as a parent), are less likely to influence workplace outcomes because they are context-specific. CSE theory posits that broader traits like locus of control (beliefs about whether one's actions influence outcomes) and emotional stability (the ability to remain calm and in control in stressful situations) are more likely to have a generalizing effect on job satisfaction because they affect how an individual perceives and reacts to challenges in the workplace. For example, a person with high emotional

stability will likely handle workplace stress better, leading to greater satisfaction in their job (Judge et al., 1997).

Correlates

Core self-evaluation (CSE) theory, initially posited as a predictor of job satisfaction, has expanded in the research scope. Judge and Bono (2001b) conducted the first meta-analysis examining the effects of CSE's four traits—self-esteem, Generalized self-efficacy, locus of control, and neuroticism—on job satisfaction and job performance. Their findings confirmed that these traits are significantly related to both outcomes, with the four traits being "among the best dispositional predictors of job satisfaction and job performance" (Judge & Bono, 2001b, p. 80).

Since its development, CSE has been recognized as a crucial predictor of favorable work outcomes. The founding researchers stated, “We believe the concept [core self-evaluation] is, along with conscientiousness, the most useful personality trait in the realm of human performance” (Judge, Van Vianen, & De Pater, 2004, p. 342). A comprehensive meta-analysis by Chang et al. (2012) synthesized approximately 150 studies to explore the relationship between CSE and various work-related variables. They categorized these relationships into seven primary areas: satisfaction, job commitment, motivation, performance, job characteristics, occupational stress, and individual differences correlates. This systematic review highlights the multifaceted impact of CSE not only within organizational settings but also in broader, non-organizational context.

Job Satisfaction. CSE has a strong positive relationship with job satisfaction. Individuals with high CSE, encompassing traits like self-esteem, generalized self-efficacy, locus of control, and low neuroticism, tend to view their jobs more favorably and feel more content with their work environment. The meta-analysis by Chang et al. (2012) indicates that high CSE leads to

higher levels of job satisfaction, as these individuals are better equipped to perceive and react positively to job-related experiences. Judge et al. (2005) also found that higher levels of CSE correlate with higher life and work satisfaction, underscoring its importance in enhancing employees' overall job satisfaction and well-being.

Life Satisfaction. Core Self-Evaluations (CSE) are strongly linked to life satisfaction. Individuals with high CSE—marked by traits such as self-esteem, generalized self-efficacy, internal locus of control, and emotional stability—tend to have a more positive outlook on life overall. These individuals are more likely to believe they can manage life's challenges effectively, feel in control of their circumstances, and maintain a stable emotional state, all of which contribute to a higher sense of life satisfaction. Meta-analytic findings by Chang et al. (2012) suggest that individuals with high CSE report greater life satisfaction because they are more likely to view their personal and professional experiences through an optimistic lens. Moreover, Judge et al. (2005) highlighted that higher CSE not only predicts greater satisfaction at work but also extends to broader life domains, indicating that people with strong self-evaluations experience a more fulfilling life in general. The positive relationship between CSE and life satisfaction underscores the importance of these core traits in shaping individuals' overall well-being and happiness.

Job Commitment. CSE is positively correlated with job commitment. Employees with higher levels of CSE exhibit stronger organizational commitment, meaning they are more likely to remain loyal and dedicated to their employers. Chang et al. (2012) found that high CSE individuals develop a deeper attachment to their organization due to their positive self-concept and belief in their ability to influence outcomes. Additionally, CSE predicts boundaryless career management, indicating that those with higher CSE are more adept at navigating organizational

boundaries and hierarchies (Judge & Kammeyer-Mueller, 2011). This increased commitment can lead to lower turnover rates and higher organizational stability, highlighting the strategic importance of fostering high CSE among employees.

Motivation. Higher levels of CSE are associated with greater intrinsic motivation. Individuals with a positive self-view are more likely to engage deeply in their tasks and pursue goals with enthusiasm and perseverance. The meta-analysis by Chang et al. (2012) suggests that high CSE enhances an individual's drive and effort, fostering a proactive attitude towards work challenges. This intrinsic motivation not only improves job performance but also contributes to personal and professional growth. Judge and Kammeyer-Mueller (2011) also found that CSE is a strong predictor of creative performance, further emphasizing its role in sustaining high levels of employee motivation and innovation.

Performance. CSE significantly impacts job performance, with higher CSE linked to better work outcomes. Individuals with high CSE perform better due to their positive self-assessment, resilience, and effective coping strategies. Chang et al. (2012) found that high CSE employees are more competent, efficient, and capable of achieving job-related goals. Moreover, Judge and Kammeyer-Mueller (2011) associated higher CSE with transformational leadership and the ability to generate new ideas and solutions, highlighting CSE's multifaceted impact on job performance. The positive self-beliefs inherent in high CSE help employees navigate workplace challenges more effectively, resulting in superior performance and productivity.

Job Characteristics. CSE is positively associated with employees' perceptions of job characteristics such as task significance and autonomy. Individuals with high CSE are more likely to view their job roles positively, appreciating the meaningfulness and independence their jobs offer. The meta-analysis by Chang et al. (2012) shows that high CSE enhances employees'

perceptions of job characteristics, which in turn boosts their engagement and satisfaction. This relationship suggests that fostering CSE can help employees find greater value and purpose in their work, enhancing overall job quality.

Occupational Stress. CSE plays a crucial role in managing occupational stress. High CSE individuals generally experience lower levels of stress and possess better coping mechanisms. Chang et al. (2012) indicates that these individuals are more resilient and capable of handling work-related stressors effectively due to their positive self-regard and emotional stability. Judge and Kammeyer-Mueller (2011) found that higher CSE is associated with better coping during organizational change, indicating greater resiliency during transitions. This ability to manage stress enhances their well-being and reduces burnout, promoting a healthier and more productive work environment.

Individual Differences Correlates. CSE is significantly related to various individual differences correlates. High CSE individuals typically exhibit traits that contribute to positive workplace behaviors and attitudes. Chang et al. (2012) found that these traits include high emotional stability, optimism, and conscientiousness, which foster a more constructive and proactive approach to work. Hsieh, Wang, and Huange (2019) also found that CSE is positively related to worker well-being, with higher job satisfaction and lower burnout levels. These strong correlations highlight the broader psychological framework within which CSE operates, underscoring its relevance in understanding and predicting employee behavior and performance.

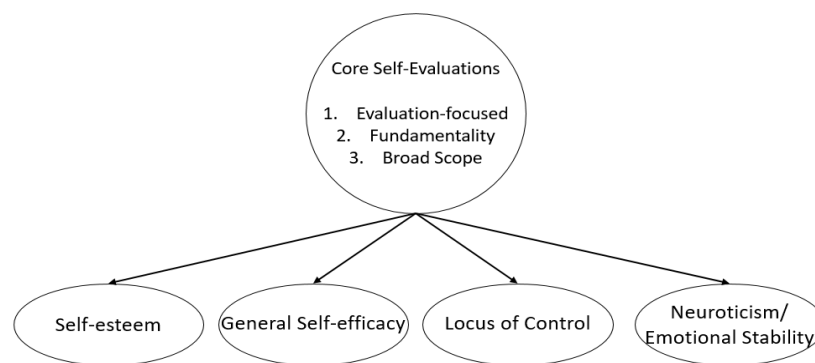
CSE Subfactors

Drawing from the criteria outlined by Judge et al. (1997), they identified four traits as manifestations of Core Self-Evaluations (CSE): self-esteem, generalized self-efficacy, locus of control, and neuroticism/emotional stability. These four traits not only align with the criteria

established in CSE theory but also rank among the most extensively researched personality traits in psychology (Judge, Bono, Erez, Locke, & Thoresen, 2002; Judge, Locke, & Durham, 1997; Judge, Locke, Durham, & Kluger, 1998). Judge and colleagues assert that the substantial body of literature on these traits lends credence to their inclusion and pivotal role in CSE (Judge, Bono, Erez, & Locke, 2005). However, Johnson et al. (2008) contest this assertion, cautioning, "Nevertheless, the extensive attention each trait receives does not inherently imply the presence of an underlying, innate construct that binds them together." (p. 393).

Figure 1.

Criteria and Model for CSE (Judge et al., 1997)



Self-esteem. Self-esteem is one of the four components of CSE (Judge, Locke, & Durham, 1997; Judge, Locke, Durham, & Kluger, 1998). Self-esteem has a long history of research in the field of psychology, with thousands of articles and studies attempting to better understand its antecedents and consequences (Jordan, Zeigler-Hill, & Cameron, 2015). Self-esteem was first identified as a psychological construct by William James (1890). The premise of self-esteem involves the meeting or exceeding of goals, where the more goals one meets or exceeds, the higher their self-esteem or self-worth will be. James (1890) described self-esteem as the ratio of successes to pretensions, or as an evaluation of oneself. James believed that self-

esteem was a major part of one's self-worth (James, 1890). Building on James' (1890) original description of self-esteem, other researchers have described self-esteem as a global evaluation of the value of one's self (Jordan, Zeigler-Hill, & Cameron, 2015) or simply a personal judgment of self-worth (Harter, 1990; Hewitt, 2009; Rosenberg, 1965; Rosenberg, 1979).

Self-esteem is dimensional, meaning that it is on a continuum ranging from low to high. This continuum is the most widely accepted conceptualization of self-esteem (Hewitt, 2009; Jordan, Zeigler-Hill, & Cameron, 2015; Zeigler-Hill, 2013). People desire higher self-esteem or self-worth (Crocker & Park, 2003; Crocker & Park, 2004; Kernis, 2003). Those already high in self-esteem tend to self-enhance and are motivated to increase their self-esteem even further (Baumeister, Tice, & Hutton, 1989; Zeigler-Hill, 2013). However, those low in self-esteem tend to self-protect, meaning that they try to avoid losing the small amount of self-esteem they already possess (Baumeister, Tice, & Hutton, 1989; Josephs, Larrick, Steele, & Nisbett, 1992; Zeigler-Hill, 2013). Rosenberg (1965) provided a more in-depth explanation of high versus low self-esteem : "When we speak of high self- esteem, then, we shall simply mean that the individual respects himself and considers himself worthy; he does not necessarily consider himself better than others, but he definitely does not consider himself worse; he does not feel that he is the ultimate in perfection but, on the contrary, recognizes his limitations and expects to grow and improve. Low self- esteem, on the other hand, implies self- rejection, self- dissatisfaction, self- contempt. The individual lacks respect for the self he observes." (p. 31).

The popularity of self-esteem in research is believed to be related to its associations with salient life outcomes (Donnellan, Trzesniewski, & Robins, 2015; Jordan, Zeigler-Hill, & Cameron, 2015; Zeigler-Hill, 2013). Self-esteem is viewed as a salient construct in a number of different contexts, including work, school, and personal life (Zeigler-Hill, 2013). Judge and

Bono (2001b) found that higher levels of self-esteem were related to greater career success. Researchers have found that self-esteem is also related to both relationship (Shackelford, 2001; Voss, Markiewicz, & Doyle, 1999) and job satisfaction (Judge & Bono, 2001b). Additionally, self-esteem has been associated with higher occupational status (Bachman & O'Malley, 1977; Kammeyer-Mueller, Judge, & Piccolo, 2008), higher salary (Judge, Hurst, & Simon, 2009; Twenge & Campbell, 2002), lower levels of depression (Orth, Robins, & Roberts, 2008), more positive affectivity (Joiner, 1995; Watson, Suls, & Haig, 2002), and better overall physical health (Benyamini, Leventhal, & Leventhal, 2004; Mäkikangas, Kinnunen, & Feldt, 2004). These relationships are believed to result from the self-enhancing behaviors of high self-esteem individuals. These self-enhancing behaviors expand beyond simply increasing one's self-esteem and into all aspects of the individual's life, resulting in positive outcomes in multiple contexts (Orth, Robins, & Widaman, 2012).

Generalized Self-efficacy. Self-efficacy has been a popular research topic in the field of psychology since its inception (Vancouver & Day, 2005). Self-efficacy is defined as an individual's beliefs about their ability to succeed and perform efficiently (Bandura, 1977). In addition, Bandura (1977) described self-efficacy as how well individuals perform tasks required to deal with specific situations. One's perception of self-efficacy is formed from three factors: whether they view their attributes as internal or external, the perceived level of effort necessary for success, and the perceived difficulty of the task at hand (Bandura, 1977; Stajkovic & Luthans, 1998). However, a generalized sense of self-efficacy is called generalized self-efficacy. Generalized self-efficacy is defined as an individual's belief in their own competence to cope with a range of difficult and challenging demands (Luszczynska, Scholz, & Schwarzer, 2005). Generalized self-efficacy involves a generalization across multiple contexts and domains of

functioning where people evaluate how successful they are (Schwarzer & Jerusalem, 1995; Sherer et al., 1982). Comparatively, self-efficacy is situationally and usually behaviorally specific, whereas generalized self-efficacy involves a broader range of behaviors and outcomes in less specific contexts (Luszczynska, Gibbons, Piko, & Tekozel, 2004).

The self-efficacy theory, which is a self-regulation theory, was the founding principle on which the constructs of self-efficacy and generalized self-efficacy were built. Self-efficacy theory states that self-efficacy enhances performance by increasing one's individual goals, resulting in more challenges and, in turn, more persistence (Bandura, 1977; Bandura, 2012; Bandura & Locke, 2003). Multiple studies have found that self-efficacy is positively related to performance. Stajkovic and Luthans (1998) found that self-efficacy led to a 28% increase in performance, which is significantly higher than that in behavior modifications or goal setting. Additionally, a significant majority of studies that examined the relationship between self-efficacy and performance have found a positive relationship (Sitzmann & Ely, 2011; Sitzmann & Yeo, 2013; Stajkovic & Lee, 2001).

Performance is not the only correlate of self-efficacy. Self-efficacy is related to many salient outcomes in the field of psychology (Luszczynska, Scholz, & Schwarzer, 2005). Judge et al. (1999) found that self-efficacy was positively related to openness to experience, risk tolerance, ambiguity tolerance, and organizational commitment. Additionally, self-efficacy has been found to have a positive association with work effort (Biberman et al., 1986), goal commitment (Erez & Judge, 2001), job satisfaction (Judge, Locke, Durham, & Kluger, 1998; Judge, Thoresen, Pucik, & Welcourne, 1999; Judge, Bono, & Locke, 2000; Judge & Bono, 2001b), and life satisfaction (Judge, Locke, Durham, & Kluger, 1998). Additionally, self-

efficacy has been found to have a negative relationship with stress (Jerusalem & Schwarzer, 1992) and risk aversion (Judge et al., 1999).

Locus of Control. Rotter (1966) forwarded the concept of locus of control (LoC). Since its conceptualization, LoC has become a recurrent topic throughout the psychological literature (Cheng, Cheung, Chio, & Chan, 2013; Ng, Sorensen, & Eby, 2006). LoC can be described as an individual's perceptions of factors that account for the occurrence of outcomes. It is conceptualized as a bipolar continuum ranging from internal to external orientations (Levenson, 1981; Rotter, 1966). Individuals with an internal LoC believe that the outcomes of their behaviors are strongly linked to their own actions and decisions. Conversely, individuals with an external LoC attribute the outcomes of their behaviors to external forces, such as chance, fate, or powerful others (Cheng, Cheung, Chio, & Chan, 2013; Levenson, 1981; Ng, Sorensen, & Eby, 2006; Rotter, 1966). The concept of LoC can be explained by social learning theory in that these patterns and beliefs are not innate but are learned through experience and exposure to patterns of reinforcement (Bandura, 1977; Rotter, 1966).

Psychological theories do not just explain the conceptualization of the construct but also help explain why locus of control, or an individual's perceptions of their control over the outcomes of events, is of great importance. Self-determination theory discusses the importance of internal locus of control in motivating individuals to fulfill their competence needs through coping behaviors (Ryan & Deci, 2000). In addition, the learned helplessness theory asserts that the external locus of control reduces problem-solving and increases negative affectivity (Seligman, 1975).

Building on these two theories, researchers have conducted multiple studies and found that the internal locus of control results in more positive work outcomes, whereas the external

locus of control results in more negative work outcomes (Cheng, Cheung, Chio, & Chan, 2013; Ng, Sorensen, & Eby, 2006). However, the dichotomy of LoC has been consistently measured as a continuous variable where higher scores in LoC result in higher internality and lower externality, with the most common measure for LoC being Rotter's Locus of Control Scale (Rotter, 1966). Researchers have found that internal locus of control leads to better well-being (Judge et al., 1998; Spector et al., 2002). Additionally, Ng and colleagues (2006) categorized well-being into two types: general well-being and job-related affective reactions. Their meta-analysis found that internal LoC was positively related to both general well-being and positive job-related affective reactions, including job satisfaction, organizational commitment, and attendance, but was negatively related to turnover intentions (Ng, Sorensen, & Eby, 2006). Multiple researchers have found a strong link between internal locus of control and multiple types of motivation, including needs for achievement (Phares, 1976; Yukl & Latham, 1978), work motivation (Schneider, Gunnarson, & Wheeler, 1992), and psychological empowerment (Koberg, Boss, Senjem, & Goodman, 1999; Spretizer, 1995). In addition, Mudrack (1990) found that internal LoC was negatively related to Machiavellianism.

Neuroticism. Neuroticism is one of the most commonly studied personality traits in the fields of psychology and sociology. Neuroticism is one of the big five personality factors. It can be found paired with conscientiousness, openness to experience, agreeableness, and extraversion in the five-factor model (Digman, 1990) or Goldberg's (1993) "Big Five". Barlow and colleagues (2014) defined neuroticism as "...the tendency to experience frequent, intense negative emotions associated with a sense of uncontrollability (the perception of inadequate coping) in response to stress." (p. 481). In more basic terms, neuroticism is the tendency of an individual to experience negative emotions and mood instability (Costa & Mcrae, 1985).

Neuroticism is believed to be a stable, genetically based personality trait (Barlow et al., 2014). Neuroticism is often viewed on the same continuum and the opposite of emotional stability, in that those low in neuroticism are high in emotional stability and vice versa (Hills & Argyle, 2001). Those low in neuroticism tended to be more confident, less anxious, and emotionally stable. Alternately, those high in neuroticism are found to be anxious, maladjusted, overemotional, and lack emotional stability and control (Eysenck & Eysenck, 1968).

Neuroticism is not simply a descriptive trait but also an antecedent to mental health, physical health, emotions, and work-related outcomes (Barlow et al., 2014). Neuroticism is viewed as a negative trait because of its strong positive relationship with negative outcomes. Neuroticism has been found to be significantly related to a number of psychopathological issues, more so than any of the other four factors in the Big Five (Clark, Watson, & Mineka, 1994; Mineka, Watson, & Clark, 1998; Widiger & Trull., 1992). More specifically, multiple researchers have found a strong positive link between neuroticism and depression (Bagby et al., 1995; Trull & Sher, 1994; Watson, Gamez, & Simm, 2005). Additionally, neuroticism has been found to be positively associated with panic, anxiety, and social phobia issues (de Beurs et al., 2000; Watson et al., 2005).

In addition to psychopathological issues, neuroticism has also been found to be significantly positively related to negative affectivity (Costa & Mcrae, 1992). Those found to have an external locus of control are also more likely to be highly neurotic (White, Brown, Somers, & Barlow, 2006; Wiersma et al., 2011). Recently, researchers have found a strong link between neuroticism and employee burnout (Alarcon, Eschleman, & Bowling, 2009; Swider & Zimmerman, 2010). In a meta-analysis, Alarcon et al. (2009) compared the path model of the Big Five Factors on job burnout and other work outcomes and found that neuroticism had the

strongest relationship with job burnout among the five factors. In addition, Swider and Zimmerman (2010) conducted a similar meta-analysis and found that emotional stability, or low neuroticism, had a strong negative relationship with depersonalization and emotional exhaustion, two subfactors of burnout. Emotional stability is also negatively related to citizenship fatigue (Liu & Yu, 2019).

Over time, the focus on neuroticism within the context of Core Self-Evaluations (CSE) shifted to emphasize its inverse—emotional stability. This adjustment reflects a growing understanding that high emotional stability (low neuroticism) has been viewed as a more precise predictor of positive psychological and work-related outcomes. Emotional stability highlights an individual's resilience to stress and their ability to maintain a calm, composed demeanor in challenging situations. Those high in emotional stability tend to experience fewer negative emotions such as anxiety or mood swings, which aligns with the overall positive framework of CSE. This shift to focusing on emotional stability allows for a clearer association between CSE and favorable outcomes such as life satisfaction, job satisfaction, and overall well-being, positioning emotional stability as a key positive trait within the CSE framework.

Conceptualization

Recent concerns have been forwarded about the conceptualization and measurement of core self-evaluations (Johnson, Rosen, & Chang, 2011; Johnson et al., 2015). The original conceptualization of core self-evaluation (CSE) emerged from research aimed at understanding the fundamental traits that shape individuals' self-perceptions and behaviors. Judge and his colleagues (1997) introduced the concept of CSE as a higher-order construct encompassing four distinct but interrelated traits: self-esteem, locus of control, emotional stability, and self-efficacy. This conceptual framework posited that individuals possess a general predisposition to view

themselves and their circumstances in a particular way, which influences various aspects of their behavior, cognition, and affect (Judge et al., 2003).

The foundational conceptualization of CSE as a higher-order construct has recently been scrutinized. Some researchers are questioning the criterion validity, incremental importance, and relative importance that the higher-order conceptualization of CSE brings compared to its individually measured traits (Johnson, Rosen, & Chang, 2011; Johnson et al., 2015).

Additionally, if deemed a valid higher order construct, there are concerns surrounding the nature of CSE as a higher-order multidimensional construct. Higher order constructs fall into two main categories, aggregate and superordinate. Aggregate constructs are higher-order constructs composed of their components, with the idea that the construct is formed by the combination of these elements. In contrast, superordinate constructs are those in which the components are viewed as manifestations or reflections of the overarching construct. In the context of measurement theory, this distinction aligns with the concepts of formative and reflective measurement structures. Formative constructs are measured by indicators that cause the construct (as in aggregate constructs), while reflective constructs are measured by indicators that reflect the construct (as in superordinate constructs). Currently, Core Self-Evaluations (CSE) is measured using the Core Self Evaluations Scale (CSES) as a superordinate, or reflective, construct, where self-esteem, generalized self-efficacy, locus of control, and emotional stability are seen as reflections of the broader CSE trait. However, some, including myself, argue that CSE may be more accurately conceptualized as a formative, or aggregate, construct where these components form or cause the overall evaluation of oneself (Johnson, Rosen, and Chang, 2011). This distinction is important for understanding the underlying structure of CSE and has implications for how the construct is both measured and applied in research and practice.

Higher Order Conceptualization. According to Judge and colleagues (2003), core self-evaluation (CSE) represents a higher-order construct encompassing fundamental self-perceptions and beliefs regarding one's worth and capabilities. Conceptually, CSE integrates multiple lower-order traits, including self-esteem, locus of control, emotional stability, and self-efficacy, into a broader framework that captures individuals' general predispositions toward themselves and their environments. This higher-order framework suggests that these lower-order traits are interconnected and collectively contribute to individuals' overall self-evaluations.

Multiple studies support the conceptualization of CSE as a higher-order construct. Researchers have found that measures of self-esteem, locus of control, emotional stability, and self-efficacy load onto a single higher-order factor representing CSE (Judge & Bono, 2001; Stumpp et al., 2010). These studies frequently employed exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to test whether these lower-order traits collectively contribute to a higher-order construct. For instance, Judge and Bono (2001) used CFA to examine the fit of CSE as a higher-order construct, finding that the four traits—self-esteem, locus of control, emotional stability, and self-efficacy—coherently align under this unified model. Similarly, hierarchical modeling techniques, such as hierarchical CFA, have been employed to validate the structure of CSE, demonstrating that the hierarchical relationships between CSE and its constituent traits yield a strong model fit (Judge et al., 2003; Kim et al., 2015; Stumpp et al., 2010).

Additionally, some researchers have employed principal components analysis (PCA) to explore whether these lower-order traits coalesce into a single underlying factor (Gnambs & Schroeders, 2024). While PCA and exploratory factor analysis (EFA) both reduce dimensionality, they assume different measurement structures and serve distinct purposes in

understanding trait relationships. PCA assumes a formative measurement structure, focusing on maximizing explained variance among observed variables, whereas EFA assumes a reflective measurement structure, aiming to identify latent factors that underlie the observed variables. This distinction is critical when conceptualizing the relationships among the traits comprising CSE.

These methodological approaches underscore the robustness of CSE as a higher-order, multidimensional construct, supported by various factor analytic methods. Conceptualizing CSE as a higher-order construct offers several theoretical advantages. By treating CSE as a unified construct, researchers can better understand the interrelationships among self-related traits and their combined influence on psychological outcomes. Furthermore, viewing CSE as a higher-order construct provides a parsimonious framework for studying individual differences in self-perception, reducing the complexity associated with analyzing multiple lower-order traits separately (Johnson, Rosen, Chang, Djurdjevic, & Taing, 2012).

However, caution has emerged among researchers regarding this assignment. While higher-order constructs offer a streamlined approach to examining individual dimensions collectively (Law et al., 1998), empirical support is crucial for these constructs to avoid oversimplification (Edwards, 2001). One critical concern involves the varied nature of traits within CSE. Judge and colleagues (1997) proposed that self-esteem, generalized self-efficacy, locus of control, and neuroticism collectively constitute CSE. Although these traits share conceptual similarities, they also have distinct theoretical underpinnings and empirical manifestations. For example, self-esteem pertains to overall self-worth, while locus of control reflects beliefs about control over life events (Judge, Locke, & Durham, 1997). Subsuming such diverse constructs under a single higher-order factor may oversimplify the complex interplay

between these traits and their differential effects on behavior and outcomes (Johnson et al., 2008).

Moreover, empirical evidence for the unity of CSE as a higher-order construct remains mixed. Although studies have investigated the relationship between CSE and outcomes such as job satisfaction, job performance, and well-being (Judge, Bono, Erez, Locke, & Thoresen, 2002), results often exhibit heterogeneity. For instance, while some studies demonstrate strong associations between CSE and job satisfaction (Judge, Locke, & Durham, 1997), others report weaker or nonsignificant relationships (Johnson et al., 2008). These inconsistencies suggest that the theorized unity of CSE may not fully capture the nuances of individual differences and their impact on behavior.

A critical component in conceptualizing CSE as a higher-order construct is assessing its criterion and construct validity. Criterion validity requires examining how a construct relates to other variables (Spector, 1992). For higher-order constructs, this involves demonstrating that the construct not only correlates with variables of interest but also explains at least as much variation as its individual components (Edwards, 2001).

Furthermore, the construct validity of CSE as a higher-order construct remains debated. Critics argue that treating CSE as a single construct may lead to measurement artifacts (Johnson et al., 2008). For example, using composite scales combining multiple traits to measure CSE may blur distinct psychological constructs, potentially compromising the validity of findings.

In addition to criterion and construct validity, assessing the relative importance of CSE and its components is critical for understanding its role as a higher-order construct. A relative weights analysis provides a nuanced examination of each predictor variable's contribution to the criterion variable by partitioning shared variance among predictors proportionally. This approach

helps clarify the extent to which CSE, as an integrated construct, contributes to explaining variance in outcomes relative to its individual components. However, it does not isolate unique predictive power, instead focusing on the proportional importance of predictors in the presence of multicollinearity.

The conceptualization of Core Self-Evaluation as a higher-order construct holds both theoretical and practical significance. By integrating self-esteem, generalized self-efficacy, locus of control, and neuroticism, CSE offers a unified framework for understanding how foundational self-perceptions influence key outcomes, such as job satisfaction and life satisfaction. This study aims to assess the validity of this higher-order structure through two complementary approaches: usefulness analysis and relative weights analysis. Usefulness analysis will test whether CSE provides incremental importance above and beyond its individual components, while relative weights analysis will examine the relative contribution of CSE as a composite construct. These analyses will directly address the first aim of my study.

Aim 1: Assess the importance of CSE as a higher-order construct by running usefulness (see Figure 2) and relative weights analyses (see Figure 3).

Hypothesis 1: CSE will show incremental importance when controlling for its traits using a usefulness analysis.

Hypothesis 2: CSE will show relative importance when controlling for its traits.

Figure 2.

Hierarchical Regression Usefulness Analysis for CSE

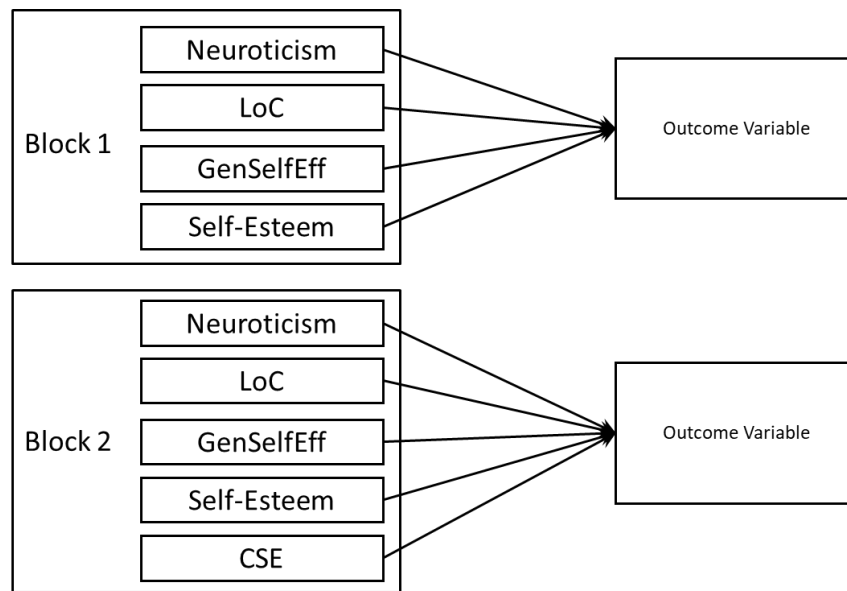
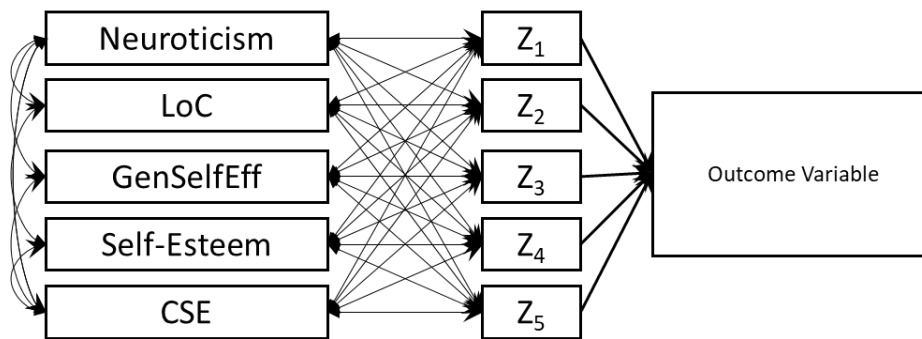


Figure 3.

Relative Weights Analysis for CSE

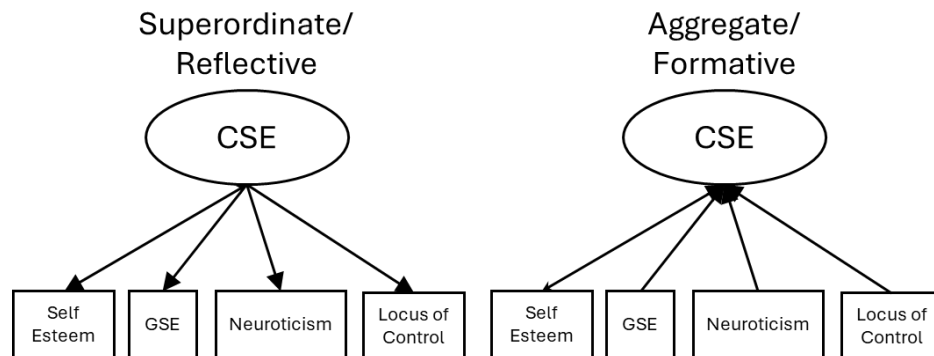


Measurement Conceptualization. Since its development, CSE has been measured in two ways: as an aggregate of its individually measured traits – See Figure 4 below (Judge, Locke, & Durham, 1997; Judge, Locke, Durham, & Kluger, 1998) or as a superordinate construct measured by a single scale (Judge et al., 2003). Originally, Judge Locke and Durham (1997) measured CSE as an aggregate of its four individual traits: self-esteem, generalized self-

efficacy, locus of control, and neuroticism. They measured each component using individual scales and then aggregated them into a single score (Judge et al., 2003).

Figure 4.

Superordinate Construct Versus Aggregate Construct



Researchers, including the original authors, raised concerns about the psychometric validity of conceptualizing CSE as merely an aggregation of its constituent traits (Judge et al., 1998). Seeking a more efficient approach, Judge et al. (2003) embraced the notion of CSE as a higher-order construct and aimed to streamline its assessment with a unified scale. Following extensive investigation, CSE was reconceptualized as a superordinate construct, with its traits viewed as manifestations of this overarching construct. The Core Self-Evaluation Scale (CSES) was thus developed to measure this single-factor conceptualization and swiftly emerged as the predominant tool for assessing CSE (Judge, Erez, Bono, & Thoresen, 2003). Notably, the CSES evaluates each of the four traits of CSE as expressions of the higher-order construct (Judge et al., 2003). Since its inception, the CSES has garnered widespread acceptance and adoption as the primary instrument for gauging CSE.

While numerous studies have shed a favorable light on Core Self-Evaluation (CSE), there remains a pressing need for researchers to reach a consensus on its conceptualization.

Despite the widespread popularity of the Core Self-Evaluations Scale, critiques from some researchers have surfaced (Dormann, Fay, Zapf, & Frese, 2006; Johnson, Rosen, & Levy, 2007; Lemelle & Scielzo, 2012). Recent discussions have particularly focused on contrasting the two conceptualizations - superordinate and aggregate - prompting many researchers to scrutinize both the measures and the underlying construct itself (Chen, 2004; Johnson, Rosen, Chang & Lin, 2015; Johnson, Rosen, Chang & Lin, 2016; Johnson, Rosen, & Levy, 2007; Lemelle & Scielzo, 2012).

Aggregate Construct. While the majority of researchers acknowledge the interrelationships between the four traits underlying Core Self-Evaluation (CSE) and their contribution to a unified construct, some scholars argue that these traits are too distinct to be amalgamated into a single construct (Chen, 2004; Johnson, Rosen, Chang & Lin, 2015; Johnson, Rosen, Chang & Lin, 2016; Johnson, Rosen, & Levy, 2007). Originally, CSE was conceptualized as a composite of four fundamental aspects of an individual: self-esteem, generalized self-efficacy, locus of control, and neuroticism. Various approaches have been employed to measure the aggregate construct of CSE, including principal component analysis to derive scores from the individual traits (e.g., Erez & Judge, 2001; Judge, Erez, & Bono, 1998; Judge, Thoresen, Pucik, & Welbourne, 1999) and an equally weighted sum score of all four traits (Avery, 2003; Bono & Colbert, 2005; Piccolo et al., 2005). The principal component derived from the four individual scales emerged as the most common and earliest method of measurement (Judge, Erez, & Bono, 1998).

Initially, Judge et al. (1997) observed correlations between the four traits of Core Self-Evaluation (CSE) and life and job satisfaction, leading them to propose a single higher-order construct. They hypothesized that an individual's fundamental self-evaluation directly influenced

their workplace satisfaction, surpassing the influence of job content itself (Judge et al., 1997). However, critics argue that this initial proposition was flawed as it relied solely on correlations, failing to establish causality (Lemelle & Scielzo, 2012). Moreover, the original authors acknowledged their inability to validate the construct's predictive power regarding job satisfaction (Judge & Bono, 2001b; Lemelle & Scielzo, 2012).

Scholars have advocated for measuring the four CSE variables separately rather than combining them into a single measure (Dormann, Fay, Zapf, & Frese, 2006; Johnson, Rosen, & Levy, 2007). Chen et al. (2004) cautioned against neglecting the distinction between the factors of CSE, particularly generalized self-efficacy and self-esteem, warning of potential issues with precision, validity, and their impact on employee performance. Dormann et al. (2006) tested the aggregate of the four CSE traits using a weighted construct, finding it to be superior to the unitary construct. Additionally, they observed that locus of control and neuroticism were stronger predictors of job satisfaction compared to self-esteem and generalized self-efficacy (Dormann, Fay, Zapf, & Frese, 2006). Similar findings were reported by Judge and Bono (2001a), who also noted significantly smaller factor loadings for locus of control and neuroticism, suggesting they should be measured separately and may not align with the higher-order construct of CSE.

Superordinate Construct. While Judge and colleagues (1997) initially conceptualized core self-evaluation (CSE) as an aggregate of the four traits, subsequent research has widely endorsed the conceptualization of CSE as a superordinate construct (Albrecht et al., 2013; Judge & Bono, 1999; Judge et al., 2003; Bono & Judge, 2003). Judge and Bono (1999) observed high correlations among the four traits, averaging at .64, leading to the proposition that CSE is part of a higher-order factor (Judge & Bono, 1999). Further investigations supported questioning the

measurement of the four traits separately, advocating for their aggregation into a single higher-order construct (Bono & Judge, 2003; Erez & Judge, 2001; Judge et al., 1998), culminating in the development of the Core Self-Evaluations Scale (CSES) to measure this single-factor construct (Judge et al., 2003). Comprising 12 items, the CSES demonstrated reliability, a unitary factor structure, and associations with variables previously linked to CSE when measured by aggregating the traits, notably job satisfaction (Judge et al., 2003).

Since the introduction of the single-factor structure of CSE, it has become widely studied and accepted as the most robust and accurate conceptualization (Albrecht et al., 2013; Judge et al., 2003; Stumpp et al., 2010). Albrecht et al. (2013) conducted a psychometric analysis of the CSES, confirming its single-factor structure and demonstrating sufficient criterion and construct validity. Similarly, Stumpp et al. conducted a German study validating the CSES and its factor structure, revealing a positive association between CSE and career success. However, recent research has raised questions about the single-factor structure, suggesting that the CSES might function better as a two-dimensional construct involving internal and external core self-evaluations while still supporting the notion of CSE as a superordinate construct (Mäkikangas, Kinnunen, Mauno, & Selenko, 2018).

Conceptualization Comparison. Each conceptualization of Core Self-Evaluation (CSE) comes with its own set of strengths and weaknesses. While there is limited direct research comparing the two conceptualizations, existing literature provides enough information to support arguments for either approach. The choice of which conceptualization of CSE to adopt appears to hinge on the specific research goals and the researcher's interest in examining the subfactors of the construct. In studies that compared the original four-factor aggregate measure of CSE with

the single-factor measurement, researchers found similar predictive capabilities concerning job satisfaction regardless of how the construct was conceptualized (Lemelle & Scielzo, 2012).

Aggregate Strengths. Previous research indicates that although the traits comprising Core Self-Evaluation (CSE) are highly correlated, they exhibit distinct relationships with commonly studied work outcomes in industrial/organizational psychology (Dormann et al., 2006). For instance, Mäkikangas and colleagues (2018) found evidence against a superordinate construct conceptualization, highlighting that the traits are not interchangeable. Moreover, measuring each trait separately enables researchers to conduct individual tests on each trait as well as the aggregate total concerning the desired work outcomes, facilitating a more comprehensive analysis (Dormann et al., 2006; Johnson, Rosen, & Levy, 2007; Mäkikangas et al., 2018).

Aggregate weaknesses. One of the primary drawbacks of an aggregate construct conceptualization of Core Self-Evaluation (CSE) is the lack of widely accepted and rigorously tested measures for each individual trait that can be aggregated. Initially, Judge and colleagues (1998) employed a combination of previously utilized measures and newly developed scales to assess the four traits of CSE. However, these previously developed measures, such as the Self-esteem Scale (Rosenberg, 1965) and the Eysenck Personality Inventory Neuroticism Scale (Eysenck & Eysenck, 1968), were outdated, having remained largely unchanged for decades, while the newly developed scales lacked empirical validation (Judge et al., 1998).

Furthermore, there is limited empirical support for the aggregate construct conceptualization. Apart from the original conceptualization by Judge and colleagues (1998), only a handful of studies have tested aggregate models (Dormann et al., 2006; Johnson, Rosen, & Levy, 2007; Mäkikangas et al., 2018), in stark contrast to the numerous studies examining the

superordinate construct model (e.g., Albrecht et al., 2013; Judge et al., 2003; Stumpp et al., 2010).

Superordinate Strengths. The predominant approach in core self-evaluation research adopts a reflective conceptualization typically assessed using the Core Self-Evaluations Scale (CSES: Judge et al., 2003). The CSES enjoys robust empirical support, and the superordinate conceptualization of Core Self-Evaluation (CSE) is widely endorsed among researchers in the field (Henderson & Gardiner, 2019; Judge et al., 2003). The reflective measurement of the construct has yielded numerous significant associations with positive work outcomes, including job satisfaction, job performance, and worker well-being (Hsieh, Wang, & Huange, 2019; Judge et al., 1998; Judge & Bono, 2001b).

Superordinate Weaknesses. Despite its widespread acceptance, the superordinate conceptualization of Core Self-Evaluation (CSE) has encountered several challenges. Some researchers argue that the four traits proposed to constitute CSE are not interchangeable, as assumed by the reflective conceptualization (Mäkikangas, Kinnunen, Mauno, & Selenko, 2018). Specifically, two of these traits - locus of control and neuroticism - exhibit low factor loadings on CSE and demonstrate notably stronger relationships with work outcomes, such as job satisfaction, compared to the other two traits (Dormann et al., 2006; Judge & Bono, 2001a).

Aggregate vs. Superordinate Conceptualization. At its inception, Core Self-Evaluation (CSE) served merely as a label for traits meeting specific inclusion criteria, thereby controlling the levels of self-esteem, generalized self-efficacy, neuroticism, and locus of control. However, criticism has arisen regarding the inclusion criteria for these traits (Johnson et al., 2008). Questions have been raised about which specific traits should be considered as core self-evaluations. While CSE was initially defined by four traits - self-esteem, generalized self-

efficacy, locus of control, and neuroticism - researchers have proposed additional traits as possible core self-evaluations, including conscientiousness, negative affectivity, and optimism (Bono & Judge, 2003; Judge et al., 2004). The continual addition of traits to a higher-order construct may indicate inefficiency in the inclusion criteria for CSE, potentially leading to conceptualization issues (Johnson et al., 2008).

Although the prevailing conceptualization of CSE is a superordinate construct, some researchers argue that an aggregate conceptualization may offer a more robust theoretical foundation (Chang et al., 2012; Johnson et al., 2008, Johnson, Rosen, & Chang, 2011). Judge and Bono (2001) described CSE as a superordinate or reflective construct, in which the four traits act as effect indicators. This implies causality flows from the higher-order construct (CSE) to its indicators, which are viewed as manifestations of the overarching construct (Bollen, 1989; Edwards, 2001; Fornell & Bookstein, 1982; MacKenzie et al., 2005; Rhemtulla et al., 2020). Conversely, a growing body of research suggests that CSE may be better conceptualized as an aggregate construct, where the four traits collectively comprise and define the construct (Chang et al., 2012; Johnson et al., 2008, Johnson, Rosen, & Chang, 2011). This aggregate view suggests that the traits act as causal indicators, with the construct being a composite of its components (Bollen, 1989; Bollen & Lennox, 1991; Edwards, 2001; Law et al., 1998; MacCallum & Browne, 1993; Rhemtulla et al., 2020).

In terms of measurement models, historically, the default measurement model for higher-order constructs has been reflective, which aligns with the superordinate conceptualization. However, research by Jarvis, MacKenzie, and Podsakoff (2003) found that approximately 96% of constructs are modeled reflectively, while only 4% are modeled formatively—a ratio of twenty-four to one. Moreover, across both types of models, around 30% or more of constructs

may be misspecified. To provide evidence for the study's aim of determining the most appropriate conceptualization of CSE, an adapted version of the six-step checklist from Jarvis, MacKenzie, and Podsakoff (2003), further elaborated by Fleurin et al. (2018), was utilized. This checklist was applied to assess whether CSE should retain a superordinate conceptualization and a reflective measurement model or shift to an aggregate conceptualization with a formative indicator model. Results from the checklist (see Table 1) support a formative indicator measurement model across all six criteria, reinforcing the rationale for testing whether CSE is best conceptualized as a formative model and, consequently, as an aggregate construct.

Table 1.

Application of Jarvis et al.'s checklist to core self-evaluation (CSE)

Checklist Item	Application to core self-evaluation
1. Are the indicators (items) (A) defining characteristics or (B) manifestations of the construct? "A" indicates a formative and "B" a reflective measurement model.	Judge et al. (1997) describe CSE's components as central traits that collectively define individuals' fundamental assessments of their own worthiness, competence, and capabilities. Thus, these components serve as defining characteristics.
2. Would changes in the indicators/items cause changes in the construct or the other way around? The former indicates formative and the latter reflective.	Judge et al. (1997) emphasize the role of the four indicators as driving forces of one's overall self-evaluation, rather than as outcomes. This suggests that changes in any of these components would impact CSE and not the other way around.
3. Should each indicator capture exactly the same? "Yes" indicates reflective; "no, but they share conceptual unity in terms of causing a common construct" indicates causal formative; and "not at all" indicates composite formative indicators.	While all four traits conceptually represent self-assessment, Judge et al. highlight that each uniquely contributes to the CSE construct. This implies that each indicator does not need to capture the exact same facet of self-evaluation, aligning with formative criteria.
4. Would dropping one of the indicators alter the conceptual domain of the construct? "Yes" indicates formative; "no" indicates reflective.	Removing any of these indicators would alter CSE's conceptualization. For example, removing self-esteem would narrow the scope, as self-esteem is a major contributor to one's core self-evaluation.
5. Should a change in one of the indicators be associated with changes in the other indicators? "Yes" indicates reflective; "no" indicates formative.	Judge et al. (1997) underscore that, while related, the four components operate independently to some degree, which fits the formative approach, as changes in one component are not necessarily mirrored by others.
6. Are the indicators expected to have the same antecedents and consequences? "Yes" indicates reflective; "no" indicates formative.	Judge et al. (1997) do not assume identical antecedents and outcomes for each component, as each contributes distinctively to various life and job outcomes, which is consistent with a formative specification.

To further investigate the nature of CSE, Confirmatory Tetrad Analysis (CTA) (Bollen & Ting, 2000) will be used to test whether CSE could be confirmed as a superordinate construct, while Proportionality Constraint Analysis (PCA) (Franke et al., 2008) will be employed to evaluate whether CSE could also be conceptualized as an aggregate construct. Structural equation modeling (SEM) will be used to compare reflective and formative models for two different measurement approaches of Core Self-Evaluations (CSE). First, a reflective model and a formative model will be tested using the CSES components: CSE Self-Esteem, Generalized Self-Efficacy, Emotional Stability, and Locus of Control. In the reflective model, these components will be treated as indicators of a single latent construct, while in the formative model, they will be treated as causal contributors that collectively define the composite construct. Second, a reflective model and a formative model will also be tested using the individually measured components: self-esteem, generalized self-efficacy, neuroticism, and locus of control, each measured using independent scales. Similarly, the reflective model will conceptualize these components as indicators of a latent CSE construct, while the formative model will treat them as defining the composite construct.

Aim 2: Test whether CSE should be conceptualized as an aggregate construct or a superordinate construct.

Hypothesis 3: The aggregate model will be a better fit than the superordinate model.

CHAPTER 3: METHODOLOGY

Participants and Procedure

The participant sample ($n = 472$) was collected through Connect by CloudResearch in September 2024. Participant eligibility criteria included working at least 35 hours per week, being 18 years or older, and currently residing in the United States. Only Connect workers with a high participant rating were included, as these participants are more likely to provide high-quality data (Peer, Vosgerau, & Acquisti, 2014). Panel-based samples like those from CloudResearch have been shown to offer a more representative sample and avoid confounding variable limitations often seen in organizational samples (Douglas, Ewell, & Brauer, 2023). Additionally, results from panel-based samples are comparable to those from other online recruitment methods (Buhrmester, Kwang, & Gosling, 2016; Landers & Behrend, 2015; Roulin, 2015).

Participants were first presented with an informed consent form, followed by the survey. The survey consisted of several scales administered in the following order: the 12-item Core Self-Evaluation Scale (Judge, Erez, Bono, & Thoresen, 2003), the 12-item Neuroticism subscale from the EPQR-Short (Eysenck, Eysenck, & Barrett, 1985), the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965), the 10-item Generalized Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), the 8-item Internality Subscale of the Locus of Control Scale (Levenson, 1981), the 18-item Overall Job Satisfaction Scale (Brayfield & Rothe, 1951), and the 5-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). In total, the survey comprised 75 scale items, along with 9 demographic questions, three validation check questions, two AI-detection checks and a single net promotor score question distributed throughout. Participants received \$2.00 for completing the survey, which took approximately 15 minutes. Although responses

were requested before participants could proceed to the next page, they were not required. A mobile-compatible version of the survey was also provided.

Validation check questions were inserted throughout the survey to ensure response quality, including simple instructions embedded as survey items, such as, “Select the ‘Neither Agree nor Disagree’ option.” Questions targeting artificial intelligence (AI) bots, like, “What color is the sky? Answer green,” were also incorporated (Lebrun, Temtsin, Vonasch, & Bartneck, 2024). Additional quality checks were conducted using the *careless* package in *R* (Yentes & Wilhelm, 2023), which offers multiple well-documented methods for detecting poor-quality responses. A combination of Mahalanobis Distance and Standardized Log-Likelihood calculations was employed to identify random responding, while the Longstring, IRV, and PsychSyn indices were used to flag straightlining behavior. As Wang and Hau (2024) observed, this combined approach yields F1 scores—calculated as $2 \times \text{Precision} \times \text{Recall} / (\text{Precision} + \text{Recall})$ —between 92% and 96%, significantly outperforming any single method in detecting insufficient effort responses. Using these techniques, 63 respondents were excluded from the final sample based on the results from the *careless* package and Standardized Log-Likelihood thresholds. Details of the calculations and thresholds used are presented in Table 2. The final sample for this study consisted of 361 participants. Based on simulations by Wang and Rhemtulla (2021), latent-variable structural equation models (SEM) with moderate item reliabilities and 3 to 5 indicators typically reach a power of .80 with approximately 300 responses.

Table 2.

Insufficient Effort Responding (IER) Tests, Descriptions, and Thresholds.

IER Test	Description	Flag Threshold
Longstring Index	This index flags respondents who provide the same response consecutively for a long string of items.	More than 7 consecutive responses
Intra-Individual Response Variability (IRV) Index	The IRV index measures variability in responses.	Top and bottom 5%
PsychSyn Index	This index identifies straight-lining responses based on psychometric properties.	Top 5%
Mahalanobis Distance	This index detects multivariate outliers by measuring how far a response deviates from the sample's response pattern.	Critical value greater than 10.8
Standardized Log-likelihood	This method detects non-patterned responses that were unlikely to be genuine.	Cutoff of -2.33

The final cleaned sample consisted of 57.9% male and 42.1% female. A majority of respondents self-reported as Caucasian (73.6%) while 12.8% were African American/Black, 10.9% Asian American/Asian, 1.3% selected “Other”, 1.1% were Native American or Alaskan Native, and 0.3% were Hawaiian or Pacific Islander. Around 1 in 10 (9.7%) respondents reported as Hispanic/Latino(a) ethnicity. The average age of respondents was 39.4 with a standard deviation of 10.1. The average hours worked per week was 40.7 with a standard deviation of 4.41 while the number of years employed at their current job was 6.9 with a standard deviation of 5.8. Only 35.5% of respondents reported working entirely from the office, while 43.8% reported a hybrid format and 20.8% worked entirely from home. The three most common

industries reported were Computer/IT Sciences at 20.5%, Healthcare at 13.9%, and Finance at 9.1%.

Measures

Core Self Evaluation. Core Self-Evaluation. The 12-item Core Self-Evaluation Scale (CSES), developed by Judge, Erez, Bono, & Thoresen (2003), is used to measure Core Self-Evaluation (CSE). These items assess the four components of CSE: generalized self-efficacy (GSE), self-esteem, locus of control (LoC), and emotional stability/neuroticism. Each component is calculated as the sum of specific items within the scale. Self-esteem is calculated using items 1, 3, and 7, with an omega coefficient of 0.76. Generalized self-efficacy is derived from items 5, 8, and 11, with an omega coefficient of 0.69. Locus of control is calculated using items 6, 9, and 10, with an omega coefficient of 0.74. Emotional stability is derived from items 2, 4, and 12, with an omega coefficient of 0.83. Six of the twelve items are reverse scored, and a high score indicates high levels of Core Self-Evaluation. Responses to this measure are provided using a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). A sample item includes, "I am capable of coping with most of my problems." The overall CSES demonstrates excellent reliability, with an omega coefficient of 0.92.

Neuroticism. The EPQR-Short (Eysenck Personality Questionnaire-Revised Short Scale), developed by Eysenck, Eysenck, and Barrett (1985), is utilized to assess neuroticism. This questionnaire comprises 48 items designed to measure three primary dimensions: Extraversion, Neuroticism, and Psychoticism, as well as 12 items for the lie scale. Only the 12 items for neuroticism are used, capturing tendencies toward anxiety, depression, and emotional instability. Responses are provided in a dichotomous format (*true/false*). An example item is, "I

often feel lonely." The neuroticism subscale demonstrates strong reliability, with an omega coefficient of 0.92.

Self-Esteem. The Rosenberg Self-Esteem Scale (RSES), developed by Rosenberg (1965), is employed to assess participants' self-esteem levels. This widely used measure consists of 10 items designed to capture individuals' overall feelings of self-worth and self-acceptance. Participants indicate their level of agreement with statements such as "I feel that I am a person of worth, at least on an equal plane with others," using a 4-point Likert scale ranging from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*). Half of the items are reverse scored to control for response biases. Higher total scores on the scale indicate higher levels of self-esteem. The RSES demonstrates excellent reliability, with an omega coefficient of 0.95.

Generalized Self-Efficacy. The Generalized Self-Efficacy Scale (GSES), developed by Schwarzer and Jerusalem (1995), is utilized to assess participants' perceptions of their generalized self-efficacy beliefs. This scale consists of 10 items designed to measure individuals' beliefs in their ability to cope with a variety of challenging situations and to achieve desired outcomes in life. Participants rate their agreement with statements such as "I can always manage to solve difficult problems if I try hard enough" on a Likert scale ranging from 1 (*Not at all true*) to 4 (*Exactly true*). Higher total scores indicate stronger perceptions of self-efficacy. An example item from the scale is "I am confident that I could deal efficiently with unexpected events." The GSES demonstrates robust reliability, with an omega coefficient of 0.92.

Locus of Control. The Internality Subscale of the Locus of Control Scale, developed by Levenson (1981), is used to assess participants' beliefs regarding the extent to which they perceive control over life events to reside within themselves (internal locus of control). This subscale consists of 8 items designed to measure the degree to which individuals attribute life

outcomes to their own abilities and actions rather than external factors. Participants rate their level of agreement with statements such as "I can pretty much determine what will happen in my life," using a 6-point Likert scale ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Higher scores on this subscale reflect a stronger belief in personal control over life events. An example item from the scale is "When I get what I want, it's usually because I worked hard for it." The Internality Subscale demonstrates acceptable reliability, with an omega coefficient of 0.85.

Job Satisfaction. The Overall Job Satisfaction Scale, originally developed by Brayfield and Rothe (1951), is utilized to assess participants' general satisfaction with their job. This scale consists of 18 items designed to measure various facets of job satisfaction, including satisfaction with the work itself, supervision, coworkers, promotion opportunities, and compensation. Participants rate their agreement with statements such as "I feel fairly well satisfied with my present job," using a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Higher total scores indicate higher levels of overall job satisfaction. An example item from the scale is "All in all, I am satisfied with my job." The scale demonstrates excellent reliability, with an omega coefficient of 0.95.

Life Satisfaction. The Satisfaction with Life Scale (SWLS), developed by Diener, Emmons, Larsen, and Griffin (1985), is used to assess participants' overall satisfaction with their life. This widely used measure consists of 5 items that capture individuals' global cognitive judgments of their life satisfaction. Participants indicate their level of agreement with statements such as "In most ways my life is close to ideal" on a 7-point Likert scale, ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Higher scores reflect greater life satisfaction, representing a positive evaluation of one's overall life circumstances. An example item from the

scale is "I am satisfied with my life." The SWLS demonstrates excellent reliability, with an omega coefficient of 0.95.

CHAPTER 4: ANALYSES AND RESULTS

Data Analyses and Results

Descriptive statistics, correlations, and McDonald's Omega were calculated using *R* version 4.4.1 (R Core Team, 2023) for each measure or subscale can be found in Table 3.

Correlations across all variables were significant and in the expected direction. Specifically, the individually measured indicators, e.g. locus of control measured by the internality scale, were significantly related to their CSE counterparts that each consisted of three items found in the CSES. As hypothesized and expected, CSE was significantly positively correlated with job satisfaction and life satisfaction.

Table 3

Descriptive Statistics, Correlations, and Reliabilities

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. CSE	3.67	0.74	0.92										
2. CSE _{SE}	3.90	0.75	0.82**	0.76									
3. CSE _{GSE}	4.05	0.73	0.85**	0.67**	0.69								
4. CSE _{ES}	3.09	1.19	0.88**	0.58**	0.66**	0.83							
5. CSE _{LoC}	3.64	0.84	0.82**	0.61**	0.60**	0.60**	0.74						
6. SE	3.17	0.66	0.87**	0.75**	0.78**	0.61**	0.78**	0.95					
7. GSE	3.19	0.45	0.69**	0.65**	0.70**	0.50**	0.52**	0.68**	0.92				
8. N	4.56	3.98	-0.68**	-0.49**	-0.57**	-0.49**	-0.70**	-0.67**	-0.49**	0.92			
9. LoC	4.38	0.88	0.56**	0.55**	0.44**	0.55**	0.39**	0.44**	0.56**	-0.32**	0.85		
10. JS	3.37	0.77	0.42**	0.43**	0.36**	0.34**	0.32**	0.36**	0.36**	-0.36**	0.26**	0.95	
11. LS	4.55	1.53	0.64**	0.71**	0.48**	0.49**	0.52**	0.60**	0.48**	-0.39**	0.42**	0.43**	0.95

Notes. *N* = 361; ***p* < .001; **p* < .05; McDonald's ω is on diagonal in bold; CSE=Core Self Evaluation; CSE_{SE}=CSE Self-esteem; CSE_{GSE}= CSE Generalized Self-efficacy; CSE_{ES}=CSE Emotional Stability; CSE_{LoC}=CSE Locus of Control; SE=Self-esteem, GSE=Generalized Self-efficacy; N=Neuroticism; LoC=Locus of Control; JS=Job Satisfaction; LS=Life Satisfaction

Usefulness Analysis. To test Hypothesis 1, which posits that Core Self-Evaluations (CSE) provide incremental importance above and beyond its individually measured components, usefulness analyses were conducted in *R* version 4.4.1 (R Core Team, 2023) using the *QuantPsyc* package (Fletcher, 2012). This analysis uses hierarchical multiple linear regression with the Ordinary Least Squares (OLS) method to assess the additional predictive power of CSE over its individually measured traits—self-esteem, generalized self-efficacy, locus of control, and neuroticism—in predicting job satisfaction and life satisfaction.

Job Satisfaction. Two hierarchical models were tested. Model 1 included the four components of CSE (neuroticism, locus of control, generalized self-efficacy, and self-esteem) measured with their independent scales as predictors of job satisfaction. Model 2 extended this by adding the total CSES score alongside the individually measured components. The difference in the explained variance (R^2) between these models indicated whether the CSE total score provided incremental importance beyond its individually measured components. A significant improvement in the prediction would support the utility of the CSE total score as a unique predictor of job satisfaction.

In this analysis, the R^2 for Model 1 (individual components only) was 0.179, indicating that the individual components explained 17.9% of the variance in job satisfaction. When the CSE total score was added in Model 2, the R^2 increased to 0.197, reflecting an additional 1.8% of explained variance. This change in R^2 ($\Delta R^2 = 0.018$) was statistically significant, $F(1, 355) = 7.783$, $p = 0.006$. Since the inclusion of the CSE total score significantly improved the prediction of job satisfaction, this suggests that the higher-order CSE construct provides unique incremental importance over and above its individually measured components.

Life Satisfaction. Two hierarchical models were tested. Model 1 included the four components of CSE (neuroticism, locus of control, generalized self-efficacy, and self-esteem) measured with their independent scales as predictors of job satisfaction. Model 2 extended this by adding the total CSES score alongside the individually measured components. The difference in the explained variance (R^2) between these models indicated whether the CSE total score provided incremental importance beyond its individually measured components. A significant improvement in the prediction would support the utility of the CSE total score as a unique predictor of life satisfaction.

In this analysis, the R^2 for Model 1 (individual components only) was 0.395, indicating that the individual components explained 39.5% of the variance in life satisfaction. When the CSE total score was added in Model 2, the R^2 increased to 0.436, reflecting an additional 4.1% of explained variance. This change in R^2 ($\Delta R^2 = 0.041$) was statistically significant, $F(1, 355) = 26.009$, $p < 0.001$. Since the inclusion of the CSE total score significantly improved the prediction of life satisfaction, this suggests that the higher-order CSE construct provides unique incremental importance over and above its individually measured components.

Both Regressions. A summary of the estimates, standard errors, and semi-partial correlations for these models is provided in Table 4. Outliers for each model were evaluated using diagnostic plots and studentized residuals. Any data points with studentized residuals exceeding three standard deviations from the mean were further investigated for potential anomalies. Upon review, none of these cases exhibited significant irregularities to warrant their exclusion from the dataset.

Table 4

Usefulness Analysis Results

Dependent Variable	Model	Variable	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>sr</i> ²	<i>F</i>
Job Satisfaction	1	Constant	36.886	6.371	-	5.790	<.001	-	19.459**
		Locus of Control	0.124	0.115	0.063	1.075	0.283	0.004	-
		Self-Esteem	0.204	0.162	0.096	1.257	0.210	0.009	-
		Generalized Self-Efficacy	0.502	0.218	0.164	2.309	0.022	0.027	-
		Neuroticism	-0.676	0.225	-0.193	-3	0.003	0.037	-
	2	Constant	34.030	6.394	-	5.322	<.001	-	17.420**
		Locus of Control	0.014	0.121	0.007	0.116	0.908	0.000	-
		Self-Esteem	-0.188	0.213	-0.089	-0.883	0.378	0.004	-
		Generalized Self-Efficacy	0.420	0.218	0.137	1.930	0.054	0.019	-
		Neuroticism	-0.487	0.233	-0.139	-2.087	0.038	0.019	-
Life Satisfaction	1	CSE	0.474	0.170	0.305	2.790	0.006	0.044	-
	2	Constant	-5.415	3.005	-	-1.802	0.072	-	58.059**
		Locus of Control	0.201	0.054	0.185	3.700	<.001	0.023	-
		Self-Esteem	0.597	0.076	0.513	7.815	<.001	0.104	-
		Generalized Self-Efficacy	0.063	0.103	0.037	0.6100	0.543	0.001	-
	2	Neuroticism	0.051	0.106	0.026	0.475	0.635	0.001	-
		Constant	-7.817	2.942	-	-2.657	0.008	-	54.912**
		Locus of Control	0.109	0.056	0.100	1.955	0.051	0.008	-
		Self-Esteem	0.267	0.098	0.230	2.724	0.007	0.021	-
		Generalized Self-Efficacy	-0.007	0.100	-0.004	-0.068	0.946	0.000	-
		Neuroticism	0.210	0.107	0.109	1.953	0.052	0.008	-
		CSE	0.399	0.078	0.466	5.1	<.001	0.066	-

Notes. ** $p < .001$; * $p < .05$

Relative Weights Analysis. Relative weights analyses were conducted in R version 4.4.1 (R Core Team, 2023) using the *relaimpo* package (Grömping, 2006) to examine the relative contributions of CSE and its four components—generalized self-efficacy, self-esteem, neuroticism, and locus of control—to the prediction of job satisfaction and life satisfaction (Tonidandel & LeBreton, 2011). Relative importance refers to the practical ranking of predictors based on their contribution to the outcome, while relative weights provide a statistical decomposition of explained variance into proportions uniquely attributable to each predictor, accounting for shared variance among predictors. The aim of this analysis was to assess the contribution of CSE as a composite construct, in comparison to its individual components, in explaining the variance in both job satisfaction and life satisfaction.

Job Satisfaction. For job satisfaction, the analysis revealed the following relative weights for each predictor: core self-evaluations (0.064, 32.5%), neuroticism (0.042, 21.3%), locus of control (0.016, 8.3%), self-esteem (0.035, 17.9%), and generalized self-efficacy (0.039, 20.0%). These results indicate that CSE made the largest contribution to the prediction of job satisfaction, accounting for 32.5% of the explained variance. Among the individual components, neuroticism contributed 21.3%, followed by generalized self-efficacy at 20.0%, self-esteem at 17.9%, and locus of control at 8.3%. See Table 5 for full results.

These findings suggest that, while each component of CSE contributes uniquely to job satisfaction, the CSE composite construct still explains the most variance overall. This supports the idea that CSE functions as a broad, higher-order predictor, capturing more variance in job satisfaction than any single trait alone.

Life Satisfaction. For life satisfaction, the analysis revealed the following relative weights for each predictor: core self-evaluations (0.164, 37.6%), neuroticism (0.040, 9.2%), locus of

control (0.051, 11.7%), self-esteem (0.124, 28.5%), and generalized self-efficacy (0.057, 13.0%). These results suggest that CSE made the largest contribution to the prediction of life satisfaction, accounting for 37.6% of the explained variance. Among the individual components, self-esteem had the highest relative importance (28.5%), followed by generalized self-efficacy (13.0%) and locus of control (11.7%), while neuroticism had the smallest contribution at 9.2%. see Table 5 for full results.

These findings indicate that, while the individual components of CSE each make meaningful contributions to life satisfaction, CSE as a composite construct provides the largest unique contribution. This supports the view that CSE functions as a broad, higher-order predictor of life satisfaction, capturing more variance than any individual trait.

Table 5

Relative Weights Analysis Results

Dependent Variable	Variable	<i>Relative Importance</i>	<i>Standard Error</i>	<i>Relative Weight</i>
Job Satisfaction	CSE	0.325	0.018	0.064
	Neuroticism	0.213	0.015	0.042
	Locus of Control	0.083	0.010	0.016
	Self-Esteem	0.179	0.012	0.035
	Generalized Self-Efficacy	0.200	0.015	0.039
Life Satisfaction	CSE	0.376	0.020	0.164
	Neuroticism	0.092	0.007	0.040
	Locus of Control	0.117	0.015	0.051
	Self-Esteem	0.285	0.020	0.124
	Generalized Self-Efficacy	0.130	0.012	0.057

Confirmatory Tetrad Analysis. To assess whether Core Self-Evaluations (CSE) should be conceptualized as a superordinate construct, a Confirmatory Tetrad Analysis (CTA) was conducted using SmartPLS 4 (Ringle, Wende, & Becker, 2024). CTA examines tetrad differences to evaluate relationships between the latent construct (CSE) and its observed indicators—self-esteem, generalized self-efficacy, locus of control, and neuroticism. According to Bollen and Ting (2000), a reflective model is indicated when tetrads are not significantly different from zero, meaning the observed indicators reflect the superordinate construct.

In this analysis, only 50% of the tetrads yielded p-values greater than 0.05, falling short of the 80% threshold often used to indicate a reflective model (Bollen & Ting, 2000), see Table 6. This result does not support the hypothesis that CSE is best represented as a reflective construct. The presence of a significant tetrad suggests that CSE may operate more effectively as an aggregate or formative construct, where the subcomponents contribute independently to the higher-order construct, rather than as reflections of a single cohesive entity.

Though not a definitive analysis, results highlighted a need to compare the fit of the superordinate model with alternative models, such as a formative or aggregate conceptualization, to determine which best captures the underlying structure of CSE. Additionally, it is crucial to examine the overall model fit indices (e.g., CFI, RMSEA) to further evaluate the appropriateness of the superordinate structure. The presence of non-vanishing tetrads in this analysis indicates that the superordinate model may not be the most suitable representation of CSE, suggesting a need for reevaluation of the construct's theoretical foundation.

Table 6

Confirmatory Tetrad Analysis Results for Reflective CSE Model

Dimension	CSE	Original Value	<i>T</i> statistics	<i>P</i> values	<i>CI</i> low	<i>CI</i> up
CSE	1: CSE _{GSE} , CSE _{LoC} , CSE _{ES} , CSE _{SE}	-2.365	2.08	0.04	-4.61	-0.16
	2: CSE _{GSE} , CSE _{LoC} , CSE _{SE} , CSE _{EN}	-2.391	1.84	0.07	-4.96	0.14

CSE=Core Self Evaluation; CSE_{SE}=CSE Self-esteem; CSE_{GSE}= CSE Generalized Self-efficacy;
CSE_{LoC}=CSE Locus of Control; CSE_{ES}=CSE Emotional Stability

Proportionality Constraint Analysis. To evaluate whether Core Self-Evaluations (CSE) should be conceptualized as an aggregate construct, Proportionality Constraint Analysis (PCA) was conducted within the structural equation modeling (SEM) framework. PCA tests whether the indicators of a construct contribute equally to its definition. If proportionality constraints hold, it would negate the possibility of CSE being an aggregate construct, supporting its conceptualization as a superordinate construct (Franke et al., 2008). In this analysis, we compared two models: a constrained model, where the components of CSE (self-esteem, generalized self-efficacy, locus of control, and neuroticism) are assumed to contribute equally to the overall construct, and an unconstrained model, where the contributions of the components are freely estimated.

The results of the analysis indicated that the constrained model fit the data significantly worse than the unconstrained model. Specifically, a chi-square difference test revealed a significant difference in chi-square values between the two models ($\Delta\chi^2 = 35.54$, $df = 3$, $p < .001$), suggesting that the proportionality constraint does not hold. This finding implies that the components of CSE do not contribute equally to the construct.

Additional fit indices further supported this conclusion. The constrained model had higher values for both the Akaike Information Criterion (AIC = 9064.645) and the Bayesian Information Criterion (BIC = 9091.868), compared to the unconstrained model (AIC = 9035.106, BIC = 9073.995). These higher values suggest a poorer fit for the constrained model. Additionally, the Root Mean Square Error of Approximation (RMSEA) for the constrained model was 0.119 (90% CI: 0.089–0.153), indicating a worse fit compared to the RMSEA for the unconstrained model, which was 0.069 (90% CI: 0.026–0.115). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) also indicated better fit for the unconstrained model (CFI = 0.988, TLI = 0.977) compared to the constrained model (CFI = 0.945, TLI = 0.931). See Table 7 for full results.

In summary, these results indicate that the components of CSE do not contribute equally, supporting the notion that CSE is better conceptualized as an aggregate (formative) construct where the contributions of each component vary. This finding aligns with the idea that CSE's traits do not share equal weight in forming the broader construct.

Table 7

Proportionality Constraint Analysis Results

Model	Component	β	χ^2	df	$\Delta\chi^2$	RMSEA (90% CI)	AIC	BIC	CFI	TLI
Unconstrained Model	CSE _{SE}	1.000	13.690	5	-	0.069 (0.026, 0.115)	9035.106	9073.995	0.988	0.977
	CSE _{GSE}	1.012								
	CSE _{ES}	1.510								
	CSE _{LoC}	1.037								
Constrained Model	CSE _{SE}	1.000	49.230	8	35.540**	0.119 (0.089, 0.153)	9064.645	9091.868	0.945	0.931
	CSE _{GSE}	1.000								
	CSE _{ES}	1.000								
	CSE _{LoC}	1.000								

Notes. CSE_{SE}=CSE Self-esteem; CSE_{GSE}= CSE Generalized Self-efficacy; CSE_{ES}=CSE Emotional Stability; CSE_{LoC}=CSE Locus of Control

Structural Equation Modeling. A comparison was conducted between formative and reflective models of Core Self-Evaluations (CSE) to assess their respective model fit and predictive abilities for job satisfaction (JS) and life satisfaction (LS) (Jarvis, MacKenzie, & Podsakoff, 2003). Two sets of models were analyzed: one using the components derived from the Core Self-Evaluation Scale (CSES), and the other using the independently measured components of self-esteem (SE), generalized self-efficacy (GSE), neuroticism (N), and locus of control (LoC). Both sets of models were estimated using maximum likelihood (ML) estimation in the *lavaan* package (Rosseel, 2012) in R version 4.4.1 (R Core Team, 2023), with standardized estimates reported.

Formative Model of CSE Using CSES Components. The model fit indices indicated an adequate fit to the data: $\chi^2(3) = 15.318$, $p = 0.002$, CFI = 0.954, RMSEA = 0.107, and AIC = 5166.982. While the CFI suggests a good fit, the RMSEA value was higher than the conventional threshold of 0.08, indicating moderate misfit. This may partially be due to the inflation of RMSEA in models with low degrees of freedom and large sample sizes.

The factor loadings (unstandardized and standardized) provide insight into the contributions of each component to the composite construct. For the unstandardized loadings, CSESE ($\beta = 1.000$, fixed) demonstrated the highest contribution, followed by CSE^{LoC} ($\beta = 0.102$, $p = 0.150$), and CSE^{GSE} ($\beta = -0.130$, $p = 0.119$). CSE^N ($\beta = 0.161$, $p = 0.003$) also showed a significant contribution. Standardized loadings reflected similar trends, with CSESE ($\beta = 0.867$) being the strongest, followed by CSE^{ES} ($\beta = 0.220$) and CSE^{LoC} ($\beta = 0.099$). CSE^{GSE} showed a weaker, negative standardized loading ($\beta = -0.110$).

The regression slopes demonstrated that CSE significantly predicted both job satisfaction and life satisfaction. For job satisfaction, the unstandardized regression slope was $\beta = 2.323$, SE

= 0.294, $p < 0.001$, while the standardized slope was $\beta = 0.435$. For life satisfaction, the unstandardized slope was $\beta = 2.134$, $SE = 0.173$, $p < 0.001$, with a standardized slope of $\beta = 0.728$. These results indicate a robust relationship between CSE and both outcomes. Additionally, the covariance between job satisfaction and life satisfaction was significant (unstandardized: $\beta = 11.487$, $SE = 3.489$, $p = 0.001$; standardized: $\beta = 0.176$), suggesting a positive association between these two outcomes.

Reflective Model of CSE Using CSES Components. The reflective model specified CSE as a latent factor indicated by the four CSES components. The fit indices showed a poorer fit relative to the formative model: $\chi^2(8) = 64.394$, $p < 0.001$, CFI = 0.933, RMSEA = 0.140, and AIC = 13602.418. Although the CFI suggests a reasonable fit, the RMSEA exceeded the acceptable threshold, indicating model misfit.

Factor loadings in this model were all significant, indicating that each component meaningfully contributed to the latent factor. The unstandardized loadings were: $CSE^{SE} = 1.000$ (fixed), $CSE^{GSE} = 0.893$, $SE = 0.052$, $p < 0.001$; $CSE^{ES} = 1.362$, $SE = 0.086$, $p < 0.001$; and $CSE^{LoC} = 0.949$, $SE = 0.061$, $p < 0.001$. Standardized loadings showed a similar pattern: CSE^{SE} ($\beta = 0.898$), CSE^{GSE} ($\beta = 0.763$), CSE^N ($\beta = -0.699$), and CSE^{LoC} ($\beta = 0.550$).

Regression slopes in the reflective model were also significant for both job satisfaction and life satisfaction. For job satisfaction, the unstandardized regression slope was $\beta = 3.371$, $SE = 0.377$, $p < 0.001$, while the standardized slope was $\beta = 0.471$. For life satisfaction, the unstandardized slope was $\beta = 2.853$, $SE = 0.186$, $p < 0.001$, with a standardized slope of $\beta = 0.726$. The residual covariance between job satisfaction and life satisfaction was weaker in this model (unstandardized: $\beta = 8.825$, $SE = 3.800$, $p = 0.020$; standardized: $\beta = 0.138$) compared to the formative model.

Formative Model of CSE Using Independent Scales. The formative model was specified with CSE as a composite formed by independently measured components: Self-Esteem (SE), Generalized Self-Efficacy (GSE), Neuroticism (N), and Locus of Control (LoC). The model fit indices indicated an adequate fit to the data: $\chi^2(3) = 15.318$, $p = 0.002$, CFI = 0.954, RMSEA = 0.107, and AIC = 5166.982. The CFI value suggests a good fit, though the RMSEA was higher than the conventional threshold of 0.08, indicating moderate misfit. This may be due to the inflation of RMSEA in models with low degrees of freedom.

The factor loadings provide insight into the contributions of each component to the composite construct. The unstandardized loadings were SE ($\beta = 1.000$, fixed), LoC ($\beta = 0.350$, $p = 0.002$), GSE ($\beta = 0.219$, $p = 0.270$), and N ($\beta = -0.080$, $p = 0.682$). Standardized loadings revealed similar trends: SE ($\beta = 0.736$) was the strongest contributor, followed by LoC ($\beta = 0.276$). GSE ($\beta = 0.112$) and N ($\beta = -0.036$) showed weaker contributions, with N contributing negatively.

CSE significantly predicted both job satisfaction and life satisfaction. For job satisfaction, the unstandardized regression slope was $\beta = 0.610$, SE = 0.105, $p < 0.001$, while the standardized slope was $\beta = 0.392$. For life satisfaction, the unstandardized regression slope was $\beta = 0.536$, SE = 0.074, $p < 0.001$, with a standardized slope of $\beta = 0.627$. Additionally, the covariance between job satisfaction and life satisfaction was significant (unstandardized: $\beta = 19.066$, SE = 4.117, $p < 0.001$; standardized: $\beta = 0.251$), suggesting a positive relationship between the two outcomes.

Reflective Model of CSE Using Independent Scales. The reflective model specified CSE as a latent factor indicated by SE, GSE, N, and LoC, measured independently. The fit indices showed a poorer fit compared to the formative model: $\chi^2(8) = 64.394$, $p < 0.001$, CFI = 0.933,

RMSEA = 0.140, and AIC = 13602.418. While the CFI remained within an acceptable range, the RMSEA was higher, indicating significant model misfit.

All four indicators loaded significantly onto the CSE latent factor. The unstandardized loadings were SE ($\beta = 1.000$, fixed), GSE ($\beta = 0.588$, SE = 0.036, $p < 0.001$), N ($\beta = -0.472$, SE = 0.032, $p < 0.001$), and LoC ($\beta = 0.656$, SE = 0.061, $p < 0.001$). Standardized loadings were similarly strong: SE ($\beta = 0.898$), GSE ($\beta = 0.763$), N ($\beta = -0.699$), and LoC ($\beta = 0.550$).

CSE as a latent construct also significantly predicted both job satisfaction and life satisfaction. For job satisfaction, the unstandardized regression slope was $\beta = 1.030$, SE = 0.125, $p < 0.001$, while the standardized slope was $\beta = 0.437$. For life satisfaction, the unstandardized regression slope was $\beta = 0.845$, SE = 0.063, $p < 0.001$, with a standardized slope of $\beta = 0.652$. However, the residual covariance between job satisfaction and life satisfaction was weaker in this model (unstandardized: $\beta = 14.878$, SE = 4.207, $p = 0.020$; standardized: $\beta = 0.206$) compared to the formative model.

Model Comparison. Model Comparison. Comparing the model fit indices across both sets of analyses (CSES components and independently measured components), the formative models consistently demonstrated better overall fit than the reflective models. The formative models had lower χ^2 and AIC values and higher CFI scores, indicating that they better capture the relationships between CSE and its components. Additionally, the lower RMSEA values for the formative models suggest less misfit compared to the reflective models, which exhibited misfit as evidenced by higher RMSEA values.

For both the CSES-derived components and the independently measured components, the formative models provided a more accurate and parsimonious representation of the relationship between CSE and its components in predicting job satisfaction and life satisfaction. The

reflective models, while still capable of predicting these outcomes, showed greater misfit and weaker residual covariance between job and life satisfaction, particularly in the CSES component analysis.

Table 8
Comparison of Measurement Models

Variables	Model	χ^2	<i>df</i>	<i>RMSEA</i>	<i>AIC</i>	<i>BIC</i>	<i>CFI</i>	<i>TLI</i>
Core Self Evaluations Scale (CSES) Four Components	Formative	5.80	3	0.051 (0.000, 0.113)	5070.81	5101.92	0.99	0.98
	Reflective	74.30	8	0.152 (0.121, 0.184)	11307.51	11358.07	0.94	0.88
Individually Measured Four Components	Formative	15.32	3	0.107 (0.058, 0.162)	5166.98	5198.09	0.95	0.86
	Reflective	64.39	8	0.140 (0.109, 0.172)	13602.42	13652.97	0.93	0.87

CHAPTER 5: DISCUSSION

General Implications

The research conducted addresses two primary aims regarding the conceptualization and measurement of Core Self-Evaluations (CSE) as a higher-order construct. Aim 1 sought to assess the importance of CSE as a higher-order construct through usefulness and relative weights analyses. Within Aim 1, hypothesis 1 posited that CSE would demonstrate incremental importance above and beyond its individual traits, which was tested through usefulness analysis. This hypothesis was supported: the usefulness analysis confirmed that adding CSE as a higher-order predictor significantly increased explained variance in the outcome, highlighting its unique contribution (see Figure 2). This aligns with prior research emphasizing CSE's incremental predictive validity across work-related outcomes, such as job satisfaction and performance (Judge & Bono, 2001; Judge et al., 2003). Hypothesis 2 proposed that CSE would show relative importance when controlling for its components, which was verified by a relative weights analysis. This analysis indicated that CSE held relative importance beyond its individual indicators in predicting key outcomes, solidifying its role as a composite predictor (see Figure 3).

Confirming that CSE is a higher-order construct is critical because it supports the notion that self-esteem, generalized self-efficacy, locus of control, and neuroticism/emotional stability are interconnected traits that collectively form a broader, unified core self-evaluation (Judge et al., 1997). This higher-order structure implies that CSE can serve as a single, comprehensive predictor that integrates these distinct but related personality components. Theoretically, validating CSE as a higher-order construct underscores its value in capturing an individual's overall self-assessment, reflecting a more holistic view of personality than any of the individual traits alone. Practically, this conceptualization allows for a more efficient assessment of core

self-views in research and applied settings, simplifying the measurement process by focusing on the combined effect of multiple underlying traits rather than treating them as entirely separate entities.

The implications extend to multiple contexts and fields where understanding CSE as a unified construct can inform intervention strategies. For example, organizations seeking to enhance employee performance and satisfaction might implement programs targeting CSE. Research suggests that interventions aimed at enhancing specific components—such as self-efficacy through skills training or emotional stability through stress management techniques—could result in broader improvements in CSE and its associated outcomes (Luthans et al., 2007). By adopting a comprehensive perspective, practitioners can address multiple personality domains simultaneously, potentially boosting individuals' resilience, satisfaction, and performance more effectively than focusing on individual traits in isolation.

Aim 2 focused on determining whether CSE should be conceptualized as an aggregate or superordinate construct, with Hypothesis 3 proposing that the aggregate model would better represent CSE than the superordinate model. To address this aim, we employed Confirmatory Tetrad Analysis (CTA) and Proportionality Constraint Analysis (PCA), which allowed us to evaluate the structural validity of CSE and its distinct components. The results indicated that the aggregate model indeed provided a better fit than the superordinate model. Both CTA and PCA supported CSE's conceptualization as an aggregate construct in which each component contributes uniquely and independently to the overarching construct.

The importance of this research is further underscored by recent critiques and recommendations regarding CSE theory and measurement. Specifically, addressing the theoretical ambiguity surrounding CSE and clarifying its inclusion criteria have been highlighted

as critical needs for advancing its validity (Edwards, 2011). This study's findings align with calls to reconceptualize CSE as an aggregate construct with causal indicators, as this approach reduces biased estimates and more accurately accounts for dispositional effects on work criteria (Bollen & Lennox, 1991; Edwards, 2001). Measuring CSE through its individual traits rather than a summative scale—consistent with aggregate conceptualizations—provides the added benefit of enabling nuanced exploration of moderated, mediated, and profile-based relationships among traits, contributing to a more complete understanding of disposition-based effects in organizational contexts.

Additionally, this research addresses longstanding concerns about the use of compensatory scoring models, as employed by the Core Self-Evaluation Scale (CSES), which allow one component to overshadow or offset another. By supporting an aggregate framework, this study emphasizes the importance of treating traits as distinct contributors to the overall construct. Such a perspective enables researchers to examine specific contexts or outcomes where one component, such as emotional stability in high-stress environments, may play a more critical role than others (O'Neill & Hastings, 2011).

In sum, this research contributes important insights into the conceptualization and measurement of CSE by establishing it as an aggregate construct best assessed through formative indicators. This approach aligns with the multidimensional reality of CSE's components and underscores the need for nuanced measurement and intervention strategies. However, addressing the gaps in CSE theory and refining its measurement remain critical next steps to solidify its place as a foundational construct in personality and organizational research.

Practical vs. Academic Utility of Core Self-Evaluations

Core Self-Evaluations (CSE) have been widely adopted in organizational and applied settings due to their strong predictive validity for various work-related outcomes, including job satisfaction, performance, organizational commitment, and career success (Judge et al., 1998; Judge & Bono, 2001; Bono & Judge, 2003). CSE's ability to integrate multiple personality traits into a single composite predictor makes it an efficient tool for practitioners aiming to understand and influence employee attitudes and behaviors. For example, CSE assessments can be leveraged in recruitment, leadership development, and employee resilience training to identify individuals likely to excel in challenging roles. Its association with well-being and stress resilience further highlights its value in initiatives focused on employee mental health and productivity (Chang et al., 2012).

This study's findings provide actionable insights for practitioners. Correctly measuring and modeling CSE could significantly enhance its practical utility by improving the precision and reliability of its predictive power. For organizations, adopting a more accurate formative measurement approach improves workforce longevity by ensuring better alignment between employee characteristics and job requirements, which can reduce turnover rates. It also enhances stress tolerance by targeting traits like emotional stability and self-efficacy, allowing interventions to bolster resilience in high-stress environments, improving employee satisfaction and productivity. Accurate measurement enables more effective employee development programs, boosting engagement and overall organizational performance. Furthermore, proper modeling of CSE reduces legal risks, as misclassifying CSE as a reflective construct in hiring or promotion decisions could lead to adverse impact and potential legal challenges. Ensuring that CSE is modeled correctly provides a defensible foundation for its use in employment decisions.

Conversely, incorrectly modeling or measuring CSE could result in unintended consequences. The compensatory scoring approach of the Core Self-Evaluations Scale (CSES) could obscure the unique contributions of individual traits, leading to suboptimal hiring or promotion decisions. Misclassification could disproportionately affect certain groups, exposing organizations to claims of unfair practices or bias in selection processes. Additionally, without understanding the distinct contributions of each CSE component, employee development programs may fail to target the most impactful areas for improvement.

Despite its strong practical utility, the conceptual and measurement challenges associated with CSE complicates its utility in academic research. The construct's formative nature complicates its use within traditional latent variable modeling frameworks, which assume reflective measurement (Diamantopoulos, Riefler, & Roth, 2013). Unlike reflective models, formative constructs require researchers to specify the causal influence of indicators on the latent construct, adding complexity to model specification and statistical analysis. Furthermore, the compensatory scoring approach of the CSES raises concerns about construct validity, as higher scores in one trait may mask deficiencies in another, potentially obscuring meaningful differences between individuals (Edwards, 2011). Additionally, the work-centric framing of several CSES items reduces its applicability to broader psychological research, particularly in non-work contexts. Items like "Sometimes, I do not feel in control of my work" are less relevant to students, retirees, or those in non-traditional work settings, limiting its generalizability to measures of life satisfaction, general well-being, or social functioning.

In summary, CSE's practical utility lies in its robust associations with work-related outcomes and its potential to inform critical organizational processes. However, this study highlights the importance of addressing conceptual and measurement challenges to ensure its

effectiveness. For practitioners, adopting a context-specific, formative measurement approach can enhance employee outcomes and organizational success while mitigating legal risks. For academics, addressing these methodological complexities is essential for advancing theoretical understanding and refining the construct's application across diverse settings.

Measuring CSE

The current study highlights several limitations in the measurement of Core Self-Evaluations (CSE) using the Core Self-Evaluation Scale (CSES). Designed to capture the broad construct of CSE, the CSES combines indicators for self-esteem, generalized self-efficacy, locus of control, and emotional stability, but does so in a manner that raises concerns about its compensatory nature, item representation, and contextual limitations.

A primary issue with the CSES is its compensatory nature, which allows higher scores on one component of CSE to offset lower scores on another. The scale does not explicitly measure the four components but treats all items as interchangeable indicators of CSE as a whole. Since the scale was developed from four distinct measures, with three items per component, it inherently reflects these individual traits. However, its scoring model assumes that deficiencies in one trait can be fully compensated for by strengths in another. This assumption is problematic, particularly in contexts where specific traits contribute differentially to outcomes. For example, research suggests that emotional stability may be more critical than self-esteem in high-stress environments (O'Neill & Hastings, 2011). Such compensatory scoring could obscure these distinctions, leading to a loss of important nuance. Adopting an aggregate model, where each component contributes uniquely and independently, provides a more accurate representation of CSE's multidimensional nature and avoids this oversimplification.

Additionally, summing scale scores to represent multidimensional constructs like CSE introduces further issues. As highlighted in prior research (Bollen & Lennox, 1991; Edwards, 2001; MacKenzie et al., 2005), this approach confounds unique variance associated with individual indicators and fails to account for differing relationships between constructs and their indicators. A summed score assumes no error in measurement and identical relationships across indicators—conditions rarely met in practice. Consequently, the CSES’s reliance on summed scores is inconsistent with both aggregate and superordinate conceptualizations of CSE, potentially leading to biased parameter estimates and misinterpretation of the construct’s effects.

Another limitation is the restricted number of items per component in the CSES. With only three items allocated to each trait, the scale may fail to capture the full breadth and complexity of constructs like self-efficacy and locus of control, which are inherently multidimensional (Chen et al., 2004). For instance, self-efficacy encompasses task-specific confidence, coping mechanisms, and general problem-solving abilities—facets that may not be adequately represented by a small number of items. This lack of depth compromises the scale’s reliability and validity, particularly in populations with nuanced or culturally variable expressions of these traits. Expanding the item pool for each component would enhance the scale’s ability to represent the complexities of these traits more comprehensively and accurately.

Furthermore, the CSES’s narrow framing within workplace contexts limits its applicability in broader life domains. For instance, items such as “Sometimes, I do not feel in control of my work” are heavily tied to workplace success and may not resonate with individuals outside professional settings (Judge et al., 2003). This work-centric focus introduces potential biases when applying the scale to diverse populations, as it emphasizes workplace-relevant aspects of CSE while neglecting other domains, such as relationships, health, or community

involvement. As a result, the scale's generalizability to measures of life satisfaction, general well-being, or other non-work-related outcomes is constrained.

To address these limitations, CSE should be measured in a manner that aligns with its conceptualization as an aggregate construct with causal indicators. Factor analytic and structural equation modeling (SEM) techniques provide a more appropriate framework for specifying separate constructs for CSE and its traits. This approach eliminates many of the issues associated with summed scale scores, including biased parameter estimates and the masking of unique and interactive effects among traits (MacKenzie et al., 2005). Measuring the traits separately also enables researchers to examine complex relationships, such as interactions or mediated effects among traits, providing a more nuanced understanding of CSE's role in predicting outcomes (Johnson et al., 2006).

In sum, while the CSES has been widely adopted as a measure of CSE, its current compensatory, summative format fails to capture the construct comprehensively or accurately. By adopting an aggregate approach and leveraging advanced modeling techniques, researchers can refine the measurement of CSE to align with its theoretical underpinnings, improving its psychometric properties and expanding its relevance and applicability across diverse populations and contexts.

Impact of Work Arrangements on Results

Outside the primary aims of this study, exploratory analyses were conducted to examine the impact of different work arrangements on the conceptualization and predictive validity of Core Self-Evaluations (CSE). Specifically, the usefulness analysis was rerun within three distinct work arrangement groups: work-from-home only, hybrid work (both home and in-person), and work-from-office only. These analyses investigated whether the incremental importance of CSE

varied based on how work was structured, shedding light on whether CSE's utility and conceptualization may be context-dependent.

Work-from-Home Only. For participants who worked entirely from home, the usefulness analysis showed that CSE's incremental importance in predicting job satisfaction (JS) was not significant. In the first model, the four individually measured components of CSE (self-esteem, generalized self-efficacy, neuroticism, and locus of control) explained 29% of the variance in JS ($R^2 = .290$, $p < .001$). Adding CSE to the model increased the explained variance slightly to 31.2%, but the change was not significant ($\Delta R^2 = .022$, $p = .139$). This result suggests that CSE may have limited incremental utility in fully remote work environments, potentially reflecting a shift in the relevance of its components in such settings.

Hybrid Work (Both Home and In-Person). For participants working in hybrid arrangements, the results similarly indicated that CSE's incremental importance was not significant. In the first model, the four components of CSE explained 15.9% of the variance in JS ($R^2 = .159$, $p < .001$). Adding CSE to the model increased the explained variance marginally to 16.0%, but the change was again not significant ($\Delta R^2 = .001$, $p = .683$). This finding further suggests that in mixed work environments, the incremental contribution of CSE may diminish, possibly due to varying situational demands across hybrid contexts.

Work-from-Office Only. In contrast, for participants working entirely in-person, CSE demonstrated significant incremental importance. In the first model, the four components of CSE explained 15.8% of the variance in JS ($R^2 = .158$, $p < .001$). Adding CSE to the model significantly improved the explained variance to 20.4% ($\Delta R^2 = .046$, $p = .009$). This suggests that CSE retains its predictive utility in traditional work environments, where its components may align more closely with job satisfaction dynamics.

Implications. These findings suggest that the incremental importance of CSE is context-dependent. In both remote and hybrid work arrangements, the diminishing utility of CSE may reflect an outdated conceptualization of the construct, which was initially developed based on work-from-office-only contexts. Specifically, the components of CSE, such as locus of control or generalized self-efficacy, may manifest differently or lose relevance in settings where autonomy and flexibility are higher. Conversely, in fully in-person settings, where work structures are more rigid and traditional, CSE remains a significant predictor of job satisfaction above and beyond its individually-measured components.

These results underscore the importance of revisiting CSE's conceptualization to ensure its applicability across evolving work arrangements. Practitioners relying on CSE for recruitment, promotion, or employee development should consider how work contexts may influence the construct's relevance and utility. Additionally, further research is needed to explore whether modifying the measurement of CSE can enhance its predictive validity in remote and hybrid environments.

Study Limitations

While this study provides meaningful insights into the structure and measurement of Core Self-Evaluations (CSE) as a higher-order construct, several limitations must be considered. First, the reliance on cross-sectional data limits the ability to make causal inferences about the relationships between CSE and outcomes such as job satisfaction and life satisfaction. Although this design facilitates analysis of associations, a longitudinal approach would provide a better understanding of how CSE and its individual components may influence these outcomes over time, as well as how changes in CSE might predict changes in job and life satisfaction across diverse contexts.

The locus of control scale used in the study may also introduce limitations. Specifically, the internality component of the scale was derived from the IPC (Internality, Powerful Others, and Chance) locus of control scale developed by Levenson (1981) due to its use in the original CSES developed by Judge and colleagues (2003). Levenson's IPC scale was designed to capture a three-dimensional perspective on locus of control; however, Judge et al. (1997) incorporated only the internality component in CSE development. This choice could mean that the measure used here represents only one facet of locus of control rather than the broader construct. Correlations between the internality scale and the CSES's locus of control subfactor were the lowest among CSE's components, suggesting that either the CSES locus of control subscale has limitations, or the internality scale may not fully capture the intended aspect of locus of control within CSE.

Additionally, using the Core Self-Evaluation Scale (CSES) to measure CSE introduces potential limitations regarding construct validity. The CSES employs a compensatory scoring model, allowing high scores in one component to offset lower scores in another. While this approach simplifies scoring, it may obscure the distinct contributions of each component to the higher-order construct. For instance, traits such as self-esteem, locus of control, and neuroticism may have differential effects on outcomes depending on the context (e.g., O'Neill & Hastings, 2011). By treating all components as interchangeable, the CSES risks oversimplifying the nuanced role of each trait.

This summative scoring model, which is inherently compensatory, is inconsistent with both superordinate and aggregate conceptualizations of CSE. In a superordinate model, components would collectively represent the construct, while in an aggregate model, each component would contribute uniquely and independently. The CSES's assumption that all

components are equally additive and interchangeable may therefore lead to misleading interpretations of CSE and its role in predicting outcomes. For example, if neuroticism has a stronger influence on job satisfaction than self-esteem in a particular setting, the compensatory scoring approach would mask this distinction, limiting the ability of the CSES to provide meaningful insights into the differential contributions of the components.

While the CSES has been a widely used tool for measuring CSE, its reliance on a compensatory model underscores the need for a more nuanced measurement approach. Adopting an aggregate framework, where each trait is measured independently and modeled as contributing uniquely to the higher-order construct, could better capture the multidimensional nature of CSE. Such an approach would enhance construct validity, allowing for more precise interpretations and reducing the risk of oversimplification.

Furthermore, some items in the CSES are framed specifically within a work context, such as “Sometimes, I do not feel in control of my work,” potentially limiting the scale’s applicability in non-work settings and introducing bias in generalizing results to broader life domains. This work-centric framing may constrain the scale’s utility in predicting life satisfaction, as it does not fully account for the influence of CSE traits in non-work areas. Future research could refine the CSES to include more context-neutral items, enhancing its applicability across domains and facilitating more accurate generalizations.

Finally, this study did not examine potential moderating influences that might impact the CSE-satisfaction relationship, such as demographic factors or organizational characteristics (e.g., telework prevalence or job type). Accounting for these moderators could reveal contextual variations in how CSE influences job and life satisfaction, potentially identifying different patterns across demographic groups or workplace settings. Addressing these limitations in future

research would enhance the robustness of the CSE construct and improve the generalizability of findings related to its impact on various outcomes.

Future Research

Future research on Core Self-Evaluations (CSE) should delve deeper into several critical areas to enhance our understanding of the construct and its relevance in contemporary work and life contexts. One promising avenue is exploring potential moderators of the CSE-satisfaction relationship, particularly given the evolving nature of workplace environments. The rise of telework and hybrid work models presents unique challenges and opportunities for examining how CSE influences job and life satisfaction across varying degrees of remote work. Since the CSE construct and Core Self-Evaluation Scale (CSES) were originally developed with an implicit focus on traditional in-office settings, it is unclear whether the relationship between CSE and job satisfaction holds consistently across remote or hybrid environments.

Refining the CSE measurement tools remains a critical priority for future research. Expanding the number of items per component could improve the granularity of measurement, capturing the multifaceted nature of traits like self-efficacy and locus of control more effectively. Addressing the compensatory nature of the current scoring model would allow for a clearer understanding of each trait's unique contribution, avoiding the masking of one component's effects by another. Incorporating items that are not workplace-specific would broaden the applicability of the scale to other life domains, such as relationships, health, and community engagement, enhancing its relevance for diverse populations. Future studies should also consider adopting formative measurement models, where components are treated as distinct contributors to CSE rather than interchangeable manifestations of the construct. This approach aligns more closely with contemporary conceptualizations of multidimensional constructs.

Research could also employ segment analysis to compare the predictive power of CSE across different levels of telework, such as fully remote, hybrid, and fully on-site workers. The exploratory analyses in this study revealed that CSE's incremental importance was not significant for predicting job satisfaction in remote and hybrid work contexts but remained significant for fully in-person workers. This suggests that certain CSE components, like self-efficacy or locus of control, may assume different levels of importance depending on the work arrangement. In remote environments, where autonomy and self-regulation are heightened, components like self-efficacy may play a more central role. Conversely, in hybrid environments, the mixed demands of home and office work may diffuse the relevance of individual traits, reducing the overall utility of CSE as a composite predictor. For fully on-site workers, traits such as emotional stability and locus of control may align more closely with traditional job satisfaction dynamics, reflecting CSE's original conceptual foundation.

Future research could further investigate the moderating effects of contextual factors, such as organizational support for telework, individual autonomy, job complexity, and work-life balance initiatives, on the relationship between CSE and job satisfaction. For example, emotional stability may become particularly salient in remote settings where social support is limited, while self-efficacy may be critical for task management in highly autonomous roles. Stratifying samples by work arrangement and examining how these contextual factors interact with CSE components could provide a more nuanced understanding of how the construct functions in diverse workplace environments. Such research would also help refine the measurement and conceptualization of CSE to ensure its applicability across evolving work arrangements, offering practical insights for organizations navigating the shift toward flexible work models.

Another valuable direction for future research involves cross-cultural validation of the CSE construct and its measurement tools. Exploring how CSE operates in different cultural contexts and languages would enhance its global applicability and reveal potential cultural variations in how traits like self-esteem and locus of control contribute to the construct. Longitudinal studies are also needed to explore how CSE evolves over time and whether its predictive relationships with job and life satisfaction remain stable or vary across career stages or life events.

Finally, researchers should continue to investigate the theoretical underpinnings of CSE, including its developmental pathways and the interplay between its components. Establishing a robust theoretical framework would help clarify the conditions under which CSE functions most effectively as a predictor of outcomes. Practically, insights from this research could guide the development of tailored interventions that strengthen specific CSE components, optimizing their impact on individual well-being and performance across diverse settings.

Conclusions

This research offers significant contributions to the conceptualization, measurement, and application of Core Self-Evaluations (CSE) as a higher-order construct. Through rigorous analyses, including usefulness analysis, relative weights analysis, and model comparison techniques, the study examined whether CSE is best represented as a superordinate or aggregate construct. Additionally, it assessed the relative importance of CSE beyond its individual traits—self-esteem, generalized self-efficacy, locus of control, and neuroticism/emotional stability—in predicting job and life satisfaction.

The findings confirm that CSE functions as a higher-order construct, demonstrating both incremental and relative importance beyond its individual traits in predicting outcomes. This

highlights the value of CSE as a unified predictor that integrates distinct but interrelated personality traits, reinforcing its utility in both research and applied contexts. Practically, this conceptualization simplifies the measurement process while capturing a holistic view of personality and self-assessment, enabling more comprehensive interventions targeting core self-evaluations.

Further, results from Confirmatory Tetrad Analysis (CTA) and Proportionality Constraint Analysis (PCA) indicate that CSE is better conceptualized as an aggregate construct, where each trait contributes uniquely and independently to the overall construct. This reconceptualization challenges traditional reflective measurement practices, advocating for a formative measurement model that allows for targeted assessment of individual components. This approach not only enhances measurement precision but also supports tailored interventions, such as strengthening self-efficacy or locus of control to improve overall CSE. By shifting toward a formative framework, this research underscores the multidimensional nature of CSE, paving the way for more nuanced theoretical and practical applications.

However, this study is not without limitations. The reliance on cross-sectional data limits causal inferences regarding CSE's influence on job and life satisfaction, highlighting the need for longitudinal studies to explore these relationships over time. Additionally, the compensatory scoring nature of the Core Self-Evaluation Scale (CSES), coupled with its reliance on work-context-specific items, raises concerns about construct validity and generalizability. Future research should refine CSE measurement by expanding item content to minimize compensatory scoring and incorporating more context-neutral items that extend the scale's applicability to diverse life domains.

Given the rise of remote and hybrid work models, future research should investigate whether CSE's relationship with job and life satisfaction holds consistently across varying levels of telework. This study's exploratory analyses revealed that CSE's incremental importance diminishes in remote and hybrid work settings, suggesting that its predictive utility may depend on work arrangements. Segment analysis examining fully remote, hybrid, and fully on-site workers could provide deeper insights into whether certain traits within CSE, such as self-efficacy or locus of control, assume greater importance under specific conditions. For instance, self-efficacy may be critical in remote environments requiring high levels of autonomy and self-regulation, while emotional stability may become more salient in settings with limited social support.

Additionally, future research should explore contextual moderators like organizational support for telework, job complexity, and work-life balance initiatives to understand how they influence CSE's functioning in modern workplace environments. Examining these factors would help clarify how the construct adapts to the demands of flexible work models and refine its measurement and application to ensure its relevance in predicting outcomes across diverse work contexts. These insights would not only advance theoretical understanding of CSE but also guide organizations in tailoring their assessment and development strategies to align with evolving work practices.

In conclusion, this research advances the understanding of CSE as a higher-order construct and provides strong evidence for its reconceptualization as an aggregate model with formative indicators. By refining its measurement model, expanding its application across diverse contexts, and addressing its theoretical underpinnings, future studies can build on these

findings. This will enhance CSE's role as a robust predictor in both theoretical and applied settings, supporting its integration into interventions that improve individual and organizational outcomes.

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