



**CONFIRMATORY FACTOR ANALYSIS OF THE COLLECTIVE  
SELF ESTEEM SCALE**

by

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## DECLARATION

I, Annelle Rossouw declare that “Confirmatory Factor Analysis of the Collective Self Esteem Scale” is my own work. All the resources I used for this study are cited and referred to in the reference list by means of a comprehensive referencing system.

I declare that the content of this thesis/article has never before been used for any qualification at any tertiary institute.

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## ABSTRACT

Self-esteem and measurement thereof is a very prominent phenomenon in psychology and related fields of study. In contrast to traditional measures of self-esteem which focus on individual self-esteem, Luhtanen and Crocker (1992) developed a measure of Collective self-esteem (CSE) with the following subscales: membership self-esteem, private collective self-esteem, public collective self-esteem and importance to identity. The aim of this study was to determine if the instrument is a valid measurement of collective self-esteem in the South African context. The CSE was evaluated using item analysis and confirmatory factor analysis. According to the findings of this study the Collective Self Esteem Scale is a reliable instrument for South African use, but confirmatory factor analysis determined that it is not factorially valid. The fit indexes indicate that the theorized four-factor model is not a good fit to the data in the South African context and should pave the way for further research on the construct validity of the Collective Self esteem Scale.

## OPSOMMING

Selfbeeld and die evaluering daarvan is 'n baie prominente verskynsel in sielkunde en verwante studierigtings. In teenstelling met tradisionele instrumente wat selfbeeld meet op 'n individuele vlak, het Luhtanen en Crocker (1992) 'n instrument ontwikkel om gesamentlike selfbeeld, met lidmaatskap selfbeeld, private gesamentlike selfbeeld, publieke gesamentlike selfbeeld en belangrikheid van identiteit te meet as sub-skale. Die doel van die studie was om te bepaal of die instrument 'n geldige instrument is om gesamentlike selfbeeld in 'n Suid-Afrikaanse konteks te meet. Die Gesamentlike selfbeeld vraelys is geëvalueer deur item- en faktor analise. Die bevindinge van die studie is dat alhoewel die instrument betroubaar is, faktor analise bepaal het dat dit nie faktoraal geldig is nie. Die passings indekse het aangedui dat die teoretiese vier faktor model nie 'n goeie passing vir die data in die Suid Afrikaanse konteks is nie, en behoort aanleiding te gee vir toekomstige navorsing oor die konstruktiviteit van die gesamentlike selfbeeld instrument.

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Psychometrics has an influence on the lives of thousands of South Africans (Sehlapelo and Terre Blanche, 1996) as psychological tests are used by a range of professions, for a variety of purposes including selection, placements, promotions, transfers, training and development etc. (Van der Merwe, 2002). The field of Psychometrics relates to the theory and practice of educational and psychological measurement, which includes the measurement of attitudes, knowledge, personality traits and abilities. It is mostly focused on the investigation of measurement instruments such as tests and questionnaires involving two key responsibilities namely: (i) the assembly of instruments and guidelines for measurement; and (ii) the development and enhancement of abstract approaches to measurement.

In the South African context, recent and continuous advances in labour legislation, and specifically the implications of the Employment Equity Act, stresses the importance of the validation of all instruments used for assessment and selection purposes (Van der Merwe, 2002). The Employment Equity Act 55 of 1998 states that psychometric testing and other similar assessments of an employee are forbidden unless the test or assessment instrument being used - has been scientifically proven to be valid and reliable; can be applied fairly to employees; and is not biased against any employee. Thus it's very important to ensure that tests being used are of high quality and standards are met.

The Collective Self Esteem Scale (Luthanen and Crocker, 1992) is just one on these many psychometric instruments. The development of this instrument has its origins in Social Identity theory as developed by Tajfel and Turner (1986), where personal identity and social identity is separated as distinct aspects of the self-concept (Tajfel and Turner, 1986). According to Cast and Burke (2002), self-esteem is commonly conceptualized as a very important component of the self-concept. So much thought was given to self-esteem at a certain stage, that it became synonymous with self concept in literature on the self (Rosenberg, 1976).

The self-esteem measures available in literature focus on an individual's evaluation of their personal identity, as opposed to social or collective identity (Luhtanen and Crocker, 1992). Therefore Luhtanen and Crocker (1992) developed a scale to assess individual differences in collective self-esteem (as opposed to individual self-esteem) which consist of the following subscales: Membership esteem, Public collective self-esteem, Private collective self-esteem, and Importance to identity. The developers provided evidence for the reliability and validity of the scale in three studies (Luhtanen and Crocker, 1992).

The aim of this study is to determine (by means of statistical analysis) if the CSE is a valid and reliable instrument to use in the South African environment. According to Huysamen (1996), one of the major obstacles regarding the use of psychometric tests in South Africa, stems from the complexity of creating tests which may be used across an assortment of linguistic and cultural backgrounds. Van der Merwe (2002) noted that many of the South African organizations who partook in a study on psychometric testing in 2002 are presently working towards the validation of tests in their own work environments because of the need for culture-fair tests.

The findings of this study will illustrate or validate its psychometric properties or lack thereof. More specifically, the purpose is to determine the construct validity (does it measure Collective self esteem as it claims to measure) by means of confirmatory factor analysis. Confirmatory factor analysis is a technique used to test specific hypothesis or theories concerning the configuration supporting a set of variables (Pallant, 2005). Data will be gathered through the distribution of the CSE to the relevant sample and the four factor model as theorized by Luhtanen and Crocker (1992) will be imposed on the data, to determine if the model fits, and thus can be used with confidence within the South African context.

The following chapters will discuss the central concepts of this study namely self-esteem, social identity theory and construct validity as they were reviewed in different literature sources. As soon as the main concepts were elaborated on the methodology used in this study will be discussed comprehensively. After the results were given, the significance of the results as well as the limitations to this study will be discussed. The latter mentioned would give way to appropriate recommendations for future research.

## CHAPTER 2

### SELF ESTEEM

#### 2.1. History of the concept of self-esteem

This chapter provides some history and background in terms of the concept of self-esteem. The use of the word "self-esteem" in English can be traced back as far as 1657 (according to the Oxford English Dictionary). The word originates from a Greek word that means "reverence for self." The "self" part of self-esteem relates to the values, beliefs and attitudes that people have about themselves, while the "esteem" part of self-esteem explains the value and worth that one gives oneself. Basically, accepting ourselves for who and what we are at any given time in our lives, is self esteem (Mruk, 1995).

The concept of self-esteem initially entered the field of the human sciences in the late nineteenth century, where after it featured in more prominent psychological use in the work of the American psychologist William James (1890). From its origins, self-esteem became retranslated in the general science of counseling, clinical and experimental psychology. The concept finally reached the general public through another retranslation of the concept in manuals about parenting and self-help literature. During this process, the concept continually expanded and changed, becoming one of the more significant and prolific concepts in psychological research, psychotherapy and popular discussions of the self, while making the network supporting it, more expansive.

Self-esteem is still one of the most frequent occurring research concepts in social psychology today (Baumeister et al 2003; Mruk 1995). As of 2003 over 25,000 books, articles and chapters referred to the topic of self-esteem – making it the third most commonly found theme in psychological literature. Self-esteem is so popular that it has been related to almost every other psychological concept or area, including personality (e.g., shyness), behavioral (e.g., task performance), cognitive (e.g., attributional bias), and clinical concepts (e.g., anxiety and depression) (Adler and Stewart, 2004).

## **2.2. Defining Self-esteem**

Self-esteem is frequently considered to be the evaluative part of the self-concept, which is a wider representation of the self that includes behavioral, cognitive, evaluative and affective aspects (Blascovich and Tomaka, 1991). Although self-esteem is generally used to refer to a global sense of self-worth (Rosenberg, 1965), narrower concepts such as self-confidence or body-esteem are also used to suggest a sense of self-esteem in more specific areas (Adler and Stewart, 2004). Another core element of self-esteem is the widely held assumption that self-esteem functions as a trait, (Coopersmith, 1976) referring to its stability across time within individuals.

Given the extended and wide-ranging history, the term has, unsurprisingly, a variety of types of definitions, each of which has brought about a separate stream of research, theories, and practical applications. Mruk (1995) outlined the six main contributors to the development of the concept of self-esteem as follows:

### **2.2.1. William James (1980)**

While self-esteem was not a major concern for the American, William James was one of the first psychologists to explore the notion thereof. He viewed "self-complacency" and "self-dissatisfaction" as "direct and elementary endowments of our nature" (James, 1950). He argued that self-esteem "is determined by the ratio of our actualities to our supposed potentialities." Self-appreciation is constructed when individuals experience success in acquiring this basic human need through a sense of self-satisfaction. Although James argued that self-esteem derives from a basic need for self-manifestation, he also felt that we have the authority to control self-feeling (James, 1950). This led him to the conclusion that a well-adjusted person was one who could successfully balance actuality with potentiality.

In summary, his studies of the concept were based on introspection and viewed self-esteem as an affective (feeling or emotional) phenomenon (Mruk, 2006). He saw a connection between self-esteem, values, success and competence and viewed self-esteem as a dynamic process, open to enhancement and affected by successes and failures (James, 1950).

### **2.2.2. Robert White (1963)**

In White's (1963) psychoanalytic/psychodynamic approach, the notion of competence is central. He also views self-esteem as a developmental occurrence (like James) but different in the sense that self-esteem develops systematically being affected by experience and behaviour and in turn effecting it (Mruk, 2006). In his opinion, the two sources of self-esteem is an internal source (own achievements) and an external source (recognition from others) (White, 1963).

### **2.2.3. Morris Rosenberg (1965)**

Rosenberg's theories (1965) follow a more socio-cultural approach and feelings/beliefs about personal worth or worthiness are central to this approach. Self-esteem is defined as a favorable or unfavorable attitude that we have about ourselves, which is a result of the influences of culture, society, family and interpersonal relationships.

This definition became the most frequently used for research (Mruk, 2006), but involves problems of boundary-definition, in the sense that it's impossible to distinguish self esteem from such things as narcissism or simple bragging (Baumeister, Smart, and Boden, 1996).

### **2.2.4. Stanley Coopersmith (1967)**

Similar to Rosenberg, Coopersmith (1967) defined self-esteem as an attitude and an expression of worthiness. He followed a behavioural standpoint and included success and self-worth as indicators of self-esteem. According to his theories, self-esteem is a construct or an acquired trait, meaning that an individual learns their worthiness originally from parents, which is then later reinforced by other people. The kids thus replicate the respect and worthiness of self that they observe in their parents (Coopersmith, 1967).

The downfalls of Coopersmith's theory, although his findings were drawn from observational techniques in controlled situations, case studies and interviews, is that it was based on research taken from middle-class white males in childhood and adolescence only. The constraints of the sample make it difficult to generalize to other populations (Mruk, 2006).



### 2.2.5. Nathaniel Branden (1991)

In Branden's (1991) humanistic view, he was the first person to define self-esteem in terms of worthiness and competence. The main concepts in his theory include competence, sense of personal worth, self confidence and self respect. He viewed self-esteem as a dynamic, basic human need and argued that lack thereof has severe negative consequences i.e. substance abuse, suicide, anxiety and depression (Mruk, 2006). According to Branden (1969) self-esteem is derived from our ability to live in such a way as to honor our perception of ourselves. He defined self-esteem as "...the experience of being competent to cope with the basic challenges of life and being worthy of happiness". Instead of limiting self esteem in primarily dealing with the concept in terms of competence of worth, this two-factor approach provides a balanced definition (Mruk, 2006)

The following major elements included in Branden's (1969) description of self-esteem:

1. Self-esteem as a basic human need, i.e., "...it makes an essential contribution to the life process", "...is indispensable to normal and healthy self-development, and has a value for survival."

Classical and contemporary social psychologists agree that people have a pervasive need for self-esteem (Greenberg et al, 1992). American psychologist Abraham Maslow (1987) supported this notion of self-esteem as a basic human need, by including self-esteem in his hierarchy of needs. He distinguished between two different forms of esteem: the need for respect from others (recognition, acceptance, status, and appreciation) and the need for self-respect, or inner self-esteem. Respect from others was believed to be more fragile and easily lost than inner self-esteem. According to Maslow (1987), individuals will be motivated to seek self esteem and be unable to grow and obtain self-actualization without the fulfillment thereof.

2. Self-esteem as an automatic and inevitable consequence of the sum of individuals' conscious choices, and
3. Something experienced as a part of, or background to, all of the individuals thoughts, feelings and actions, which is reflected in behaviours.

A problem with this approach (which is based on philosophy rather than empirical data) is inherent stability. The fact that self-esteem is contingent upon success implies that failure can occur at any moment. (Crocker and Park, 2004 in Mruk, 2006)

Branden believed that a "self esteem" that depends on external validation of the self (or other people's approval), equate to "pseudo self-esteem" as opposed to "true" self-esteem. True self-esteem such as self-responsibility, self-sufficiency and the knowledge of one's own competence and capability to deal with problems and adversity, regardless of what other people think, originates from within the individual (Branden, 1969).

#### **2.2.6. Seymour Epstein (1985)**

Epstein also viewed self-esteem as a basic human need - worthiness which motivates us consciously and unconsciously. In this cognitive-experiential view, self-esteem is viewed as a consequence of an individual's understanding of the world and others, and where he/she fits in in relation to them. There is therefore a drive to maintain equilibrium of the self (Epstein, 1985).

Epstein (1985) identified the following separate levels of self-esteem: global (general overall self-esteem); intermediate (related to certain areas like

competence, likability or personal power); and situational (everyday manifestation of self-esteem). The interaction between these three levels results therein that global and intermediate self-esteem influences situational self-esteem. A possible limitation of Epstein's theory is that it's more occupied with personality development than self-esteem (Mruk, 1995).

### **2.3. Levels of self-esteem**

#### **2.3.1 Developing and sustaining healthy self-esteem**

According to Garcia and Sanchez (2009) personal characteristics such as unique attributes, abilities, traits and values, and also group memberships such as gender, religious affiliations, sexual orientation, race and political affiliations, shape individuals' self-esteem. Among collectivistic cultures, the notion of self is viewed as part of a group rather than as an individual being, and self-concept (and consequently self-esteem) is understood to develop through relations with significant others and is a reflection of others' evaluation of oneself (Crocker et al., 1994).

When focusing on the development of self-esteem, work done by Branden (1996) titled "The Six Pillars of Self-esteem" is worth noting. These pillars are practices that he has found to be essential for the nurturing and sustaining of healthy self-esteem. These include the practice of:

1. **Living Consciously.** To live consciously means to be focused on what we are doing; to pay attention to information and feedback about needs and goals, (even if it is uncomfortable or threatening) and to be aware both of the worlds external to self and also to the inner self.

2. **Self-acceptance.** An individual who practices self acceptance, internalize and experience, whatever individuals honestly think, feel or do, even if they don't always like it without denial or rejection . Branden (1996) also mentions facing mistakes and learning from them, and refusing to be in an adversarial or rejecting relationship to ourselves.
3. **Self-responsibility:** Establishing a sense of control over life by accepting responsibilities for choices and actions at all levels - including the achievement of goals, happiness and values.
4. **Self-assertiveness:** The willingness to be who you are and allow others to see it by appropriately expressing thoughts, values and feelings and to stand up for it.
5. **Living Purposefully.** To live purposefully is to take accountability for setting goals; to work towards achieving them; to stay dedicated and strive toward their achievement.
6. **Personal integrity.** The alignment of your behavior with your principles, convictions, values and beliefs, and acting in correspondence with what you believe is right, in other words to “walk the talk”.

Branden (1999) stresses the importance of the cognitive relationship to reality, meaning to that which exists, which is a central theme in all these above mentioned practices or mental operations. According to Branden (1999) self-esteem is nurtured and supported when individuals seek to align themselves with reality. In contrast, when either out of fear or desire, individuals seeks to escape from reality, self-esteem is undermined.

### 2.3.2 High and low self-esteem

Common practice recognizes "high" self-esteem and "low" self-esteem. People are highly motivated to seek and acquire high levels of self-esteem (Allport, 1955; Baumeister, 1998), and protect and increase it through their thoughts and actions (Leary, 1999). In contrast, low self-esteem is often seen as a threat that

people are motivated to avoid, and is typically considered dysfunctional (Chamberlain and Haaga, 2001).

Individuals with high levels of self-esteem enjoy accurate descriptions of themselves and are more assured about their self-views (Campbell and Lavallee, 1993). These self views might be an inaccurate perception of their true selves, as Baumeister et al (2003) also determined that people high in self-esteem inflate the extent to which they possess a wide variety of sought-after traits, such as physical attractiveness (Harter, 1993) and popularity (Battistich, Solomon, and Delucchi, 1993). Baumgardner (1990) confirmed these findings and determined that individuals with high self esteem are more confident when evaluating themselves on a variety of dimensions. Subsequently high levels of self-esteem lead to a multitude of constructive attributes, such as good academic performance (Dukes and Lorch, 1989), well-adjusted children (Buri, Kirchner, and Walsh, 1987), happy marriages (Thornstam, 1992), a healthy sex life (Hally and Pollack, 1993). More specifically, high levels of collective self-esteem have been associated with psychological well-being in people of color (Duan et al., 2004 in Blue, Peoples and Shelton, 2008).

On the other hand, numerous studies indicate that people with low self-esteem are uncertain about themselves and what they are like (Campbell and Lavallee, 1993). German psychoanalyst Karen Horney (Britannica, 2009) asserted that low self-esteem influences the development of a personality that excessively craves approval and affection and demonstrates an intense desire for personal achievement. According to Alfred Adler's (Britannica, 2009) theory of personality, low self-esteem motivates people to strive towards overcoming their perceived inferiorities and to acquire strengths or talents in return.

These cognitive processes influence behaviour to the extent that low levels of self-esteem have been linked to an array of issues and problems such as teenage pregnancy (Crockenberg and Soby, 1989), drug and alcohol abuse (Miller, 1988), suicide (Choquet, Kovess, and Poutignat, 1993), fires starting (Stewart, 1993), homicide (Lowenstein, 1989) and anxiety and depression (Rosenberg, 1965 and Coopersmith, 1967).

#### **2.4. Summary**

Self-esteem is a very prominent theme in psychology and other related fields today. This chapter focused on the concept, history and definitions of self esteem and self esteem theory. Mruk (1995) outlined the six main contributors to the development of the concept of self-esteem as William James, Robert White, Morris Rosenberg, Stanley Coopersmith, Nataniel Branden and Seymour Epstein. Their variety of types of definitions, each of which has brought about a separate stream of research, theories, and practical applications, was highlighted. The chapter concludes with different levels of self esteem, and focuses on work done by Nataniel Branden (1996), who identified six pillars of self-esteem as living consciously, self acceptance, self responsibility, self assertiveness, living purposefully and integrity. Finally, the focus shifts to developing and sustaining self esteem and presents previous research findings on high and low levels of self esteem.

## CHAPTER 3

### MEASURING SELF ESTEEM

#### 3.1. Introduction

The literature distinguishes between two sub disciplines of self-esteem, namely explicit and implicit self-esteem. The explicit form of self-esteem is evaluated by what we say about ourselves (conscious), while implicit self-esteem is judged by automatic responses (often unconscious), such as how we associate words that have positive or negative connotations with ourselves (Tafarodi and Ho, 2006).

Although implicit and explicit self-esteem are separate phenomena (Bosson, Swann, and Pennebaker, 2000) the study on implicit self-esteem should contribute to a more detailed understanding of self-esteem beyond the study of explicit self-esteem alone. This study is focused on the measurement of explicit self-esteem through self report, but definitions of both types, as well as the instruments used to assess these, will be discussed in the following section.

#### 3.2 Implicit self-esteem and measures thereof

Over the past ten years, experimental social cognition has experienced the expansion of research on implicit or unconscious processes (Olson and Fazio, 2003). A specific focus in this movement has been an elaborate program of research on implicit self esteem and identity (Devos and Banaji, 2003), with significant focus on mainly implicit self-esteem. Greenwald and Banaji (1995) defined implicit self esteem as "the introspectively unidentified (or wrongly

identified) effect of the individual's attitude on evaluation of self-associated and self-dissociated objects". This value of this definition lies therein that self-esteem is reduced to an "effect" in a process that occurs outside awareness. In other words implicit self-esteem refers to an individual's ability to evaluate themselves and objects closely associated with themselves in a unstructured, automatic, or unconscious manner (Greenwald and Banaji, 1995).

According to Greer (2003) when focusing on implicit self-esteem, self-esteem is no longer the conscious expression of one's identity through verbal comprehension and consideration, but the causal relation of a theoretical "self-attitude" whose subjective character and origins are left vague. In reducing self-esteem this way, it has been desiccated and "demoralized". Greenwald et al. (2002) also made a similar conclusion: "Self-esteem is the association of the concept of self with a valence attribute".

Research suggests that implicit self-esteem is an important and significant element of personality, cognition, and behavior (Adler, 1930; Horney, 1937). This can be illustrated in the fact that implicit self-esteem influences how individuals handle negative feedback (Dijksterhuis, 2004; Greenwald and Farnham, 2000), interpersonal stressors (Hetts and Pelham, 2001; Spalding and Hardin, 1999), and unpleasant thoughts or emotions (Jordan, Spencer, Zanna, Hoshino-Browne, and Correll, 2003; McGregor and Marigold, 2003), such as thoughts about death (Gailliot, Schmeichel, and Baumeister, 2005). Conner and Barrett (in press) also found that implicit self-esteem predict the emotions individuals experience in their daily lives.

Indirect measures of cognitive processing are used to assess implicit self-esteem. Popular measures include the Name Letter Task (initial letter



preferences) and the Implicit Association Test (Greenwald, McGhee, and Schwartz, 1998). Such indirect measures are designed to reduce awareness of, or control of, the assessment process. Preferences for the letters in one's initials over other letters has been proven to be one of the most valid and reliable measures of implicit self-esteem (Bosson et al., 2000; Greenwald and Banaji, 1995; Kitayama and Karasawa, 1997; Koole et al., 2001; Nuttin, 1987). What it entails is that participants rate the attractiveness of each of the 26 letters in the English alphabet, on a scale from 1 (not at all beautiful) to 7 (extremely beautiful) (Gailliot and Schmeichel, 2006). The degree to which participants rated the letters in their own initials as being attractive, while controlling for baseline ratings of those letters (i.e., ratings made by participants whose initials did not contain those letters) were used to derive implicit self-esteem levels (Kitayama and Karasawa, 1997; Koole, Dijksterhuis, and van Knippenberg, 2001). According to this theory higher scores on this measure indicate having higher implicit self-esteem.

### **3.3 Explicit self-esteem and measurement thereof**

Explicit self-esteem can be described as the extent to which a person consciously and explicitly considers themselves as valuable and worthy. According to Tafarodi et al (2006) the explicit measurement of self-esteem is aimed at understanding the individual's personal self-valuation as a person or moral being. This valuation is temporary and illustrates the understanding of oneself as an identity through time, a character in an array of experiences and engagement, who is both an agent and a subject of change.

The general approach to measuring self-esteem since the first publication of a self-esteem instrument 61 years ago, is direct or explicit questioning (Raimy, 1948). For the purposes of empirical research, psychologists usually assess self-esteem by a self-report survey or questionnaire, with or without the help of a

mental health professional, resulting in a quantitative result. The virtue of direct questioning is its immediacy. According to Tafarodi and Ho (2006) psychologists get an understanding of a person's self-esteem by asking the individual to reflect upon herself/himself. When such "questioning" is accomplished using statements in the present indefinite tense (I feel/think/believe...), the participant tends to rely on memory for previous experiences of moral self-reflection, more specifically, the self-defining beliefs that resulted from those experiences (Tafarodi and Ho, 2006).

### **3.4. Instruments**

The following section will entail a brief description of The Rosenberg Self-Esteem Scale (1965) and the Coopersmith Self-Esteem Inventory (1967/1981) which features among the most commonly used instruments for measuring explicit self-esteem (as discussed above). Thereafter the focus will turn to the Collective Self Esteem Scale (Luhtanen and Crocker, 1992) which is the instrument under review.

#### **3.4.1. The Rosenberg Self-Esteem Scale (1965):**

An instrument widely used to measure explicit self-esteem is the Rosenberg self-esteem scale (Rosenberg, 1965). The Rosenberg scale normally consists of a ten-question instrument scored on a four-point response-system that requires participants to indicate their level of agreement with a range of statements about themselves. Rosenberg's scale was originally developed to measure adolescents' global feelings of self-worth or self-acceptance, and according to Adler and Stewart (2004); it is widely considered as the standard against which other self-esteem measuring instruments are evaluated. Widespread acceptable reliability (internal consistency and test-retest) and validity (convergent and

discriminant) information is available for the Rosenberg Self-Esteem Scale (Blascovich and Tomaka, 1991). The Rosenberg Self-esteem scale translates into 28 languages, across 53 nations (Schmitt, 2005).

### **3.4.2 Coopersmith Self-Esteem Inventory (1967)**

The Coopersmith Self-Esteem Inventory was created to evaluate attitude toward oneself in general, and in specific domains: peers, parents, school, and personal interests. It was initially developed for use with children, based on items from scales that were previously used by Carl Rogers. Participants indicate whether a set of 50 generally positive or negative aspects of a person are "like me" or "not like me." Even though acceptable reliability (internal consistency and test-retest) and validity (convergent and discriminant) information exists for the Self-Esteem Inventory; Blascovich and Tomaka (1991) criticized it for lack of a stable factor structure.

### **3.4.3 Collective Self esteem scale (Luthanen and Crocker, 1992)**

The majority of self-esteem measures available in the literature, all focus on individuals' evaluation of their personal identity, in private or interpersonal domains. There weren't any scale that assessed the positivity of one's social, or collective, identity. This led to the development of the Collective Self Esteem (CSE) scale by Luthanen and Crocker, (1992) to assess individual differences in collective, rather than personal, self-esteem. Collective self esteem refers to the manner in which individuals evaluate their self worth in relation to their cultural or social group (Luhtanen and Crocker, 1992).

The Collective Self Esteem Scale (Luthanen and Crocker, 1992) is a 16-item measure, rated on a 7 point Likert scale, that asks respondents to evaluate their thoughts and feelings related to social group memberships that they possess, based on attributed characteristics such as sex, race, religion, and ethnicity. Luthanen and Crocker (1992) provided evidence that the scale can be a useful research tool through acceptable reliability and validity findings in three studies.

### **Applications of the CSE**

The CSE measure assesses general self esteem tied to groups, but can also be modified to address specific groups. Luhtanen and Crocker (1992) claimed that their instrument measures the following four constructs: Membership self-esteem, Private collective self-esteem, and Public collective self-esteem and Importance to identity.

The CSE and adaptations thereof has been widely used in psychological studies. Researchers have used this scale to measure a broad variety of group variables, including gender and religious denominations (Rieks, 2005), race (Luhtanen and Crocker, 1992) and mental health status (Constantine, 2006). More specifically, this scale has been used to create an overall collective self-esteem score, examinations of the subscales, and correlates between the overall score and the subscales (Luhtanen and Crocker 1992).

Blake and Rust (2002) performed a study on college students with physical and learning disabilities to determine the relationship between self-esteem and self-efficacy. The four constructs claimed to be measured with the CSE were positively and significantly correlated with General and Social Self-efficacy.

Another study by Sato and Cameron (1999) investigated the relationship between a mixture of facets of collective self-esteem (Luhtanen and Crocker, 1992) and independent and interdependent self-construals among Japanese and Canadian students. The results indicated that individuals with highly

interdependent self-construals viewed social group memberships as self-defining, irrespective of culture. Individuals with independent self-construals evaluated their groups positively, felt they were worthy members of their groups and perceived that others judged their groups positively.

Carpenter and Johnson (2001), Knox (1998), and Smith (1999) performed interesting research in terms of gender differences and self-esteem. They used the collective self-esteem scale, instead of a global self-esteem scale, and determined that there is a stronger identification with a collection notion of self in girls than in boys. Self-esteem is multidimensional for girls: they provide more ambiguous or opposing self-attributes (Knox, 1998) and women's self-esteem is more strongly associated with social acceptance and inclusion than to achievements (Carpenter and Johnson, 2001). Their findings indicate that female self-esteem is more reliant on a collective than individual orientation.

### **3.5 Limitations when measuring self-esteem**

Possibly the biggest drawback of all self-esteem measures is their receptiveness to socially desirable responding and misrepresentation by the respondent. These two occurrences will be discussed shortly.

#### **3.5.1 Mismeasurement**

There can be little doubt that implicit or indirect measurement of self-esteem avoids the problem of misrepresentation (which is less likely to take place in direct self-report). According to Tafarodi and Ho (2006) it does so by reflecting behaviour that is not subject to conscious control, occurs outside of awareness, or, at least, is not obviously indicative of self-esteem.

Tafarodi and Ho (2006) identified the two ways whereby psychometric dependence on the direct communication of self-esteem through questionnaires or interviews can lead to mismeasurement. The first is plain insincerity, where the respondent purposefully dissimulates with the definite objective of concealing a personal experience of self-esteem. A person wants to avoid being perceived as unattractive, weak, insecure, troubled, or self-critical, and therefore knowingly responds untruthfully to self-evaluative statements (Tafarodi and Ho, 2006). Although the person is entirely aware of private self-doubt, ambivalence, or perhaps even loathing, he/she does not wish to respond in a way that would reveal this subjective reality. Another response which is more rare, is when the respondent misrepresents downwards, reporting more negativity than is actually experienced. Tafarodi and Ho (2006) propose that this might be related to a deep concern with public modesty which is more prominent in non-Western cultural contexts.

The second possibility of mismeasurement is skillful insincerity, which is no longer experienced as such by the respondent (Tafarodi and Ho, 2006). In stead, test questions are answered in a blindly automatic manner that is not consistent with the individual's personal experience of self-esteem. This tendency can become so over learned that the private experience is not even thought of in the act of responding. Therefore, there is no subjective awareness of dishonesty.

According to Tafarodi and Ho (2006) neither of these two forms of mismeasurement or invalidity assumes more than a distinct, clearly conscious self-esteem. In both occurrences, this self-esteem is not the core of the response; however, neither is it uninformed in any dynamic sense. Even a respondent who is well rehearsed and motivated to focus on her/his own private self-esteem, avoid it through the force of mindless habit (Tafarodi and Ho, 2006).

### 3.5.2 Social Desirability

Phillips and Clancy (1972) view social desirability as a personality characteristic and define it as “a tendency to say good rather bad things about oneself”. Given Western cultures’ increasingly focus on self-satisfaction and feeling good about oneself (Giddens, 1991; Hewitt, 1998; Kaminer, 1993), it is not unexpected that direct self-reports of self-esteem converge to a certain degree with the inclination toward socially desirable responding (Paulhus, 2002).

Most measures on self-esteem are self-report, and it is difficult to obtain non-self-report measures of such a personal and subjective construct (Stewart and Adler, 2004). When investigating self report results, Blascovich and Tomaka’s (1991) findings illustrated that scores tend to be skewed toward high self-esteem, with even the lowest scorers on most tests scoring above the mean and indicating reasonably high levels of self-esteem. They note, however, that “an individual who fails to endorse Self-Esteem Scale items at least moderately is possibly clinically depressed,” indicating that even the restricted range of self-esteem scores is valuable among - and representative of - non-depressed individuals (Blascovich and Tomaka, 1991).

More specifically, a lot of interpretive problems are experienced with implicit measures (Bosson, Swann, and Pennebaker, 2000; De Houwer, 2001, Gregg, 2003; Karpinski, 2004; Mierke and Klauer, 2003). One general concern is the conceptual ambiguity of the constructs these questionnaires are implicitly indirectly measure. Confusion exists with regard to whether implicit self-esteem as measured by these tests is to be taken as a theoretical relation only, a measurement process, or more?

### **3.6. Bases of self esteem: Contingencies of self-worth**

People differ in their bases of self-esteem according to the "Contingencies of Self-Worth model" (Crocker and Wolfe, 2001). These foundations are shaped by their beliefs — beliefs about what they think they need to do, or who they need to "be" in order to be accepted as a worthy person. Crocker and her colleagues (2001) identified the following seven "domains" in which individuals regularly derive their self-worth and where successes and failures result in bigger increases and decreases in self-esteem when they take place in these domains. (Crocker, 2002)

- virtue
- God's love
- support of family
- academic competence
- physical attractiveness
- gaining others' approval, and
- Outdoing others in competition.

Crocker claims that individuals do not seek "self-esteem", but fundamental human needs, such as learning, mutually supportive relationships, autonomy, and safety (Crocker and Nuer, 2004; Crocker and Park, 2004; Deci and Ryan, 2000), and that the contingencies on which they base their self-esteem has more significance than the level of self-esteem itself. Branden (1997) identified the root of our need for self-esteem as the need for an individual's consciousness to learn to trust itself.

### **3.7. Criticism and modern theories**

The concept of self-esteem has been criticized from different angles but especially by figures like Seligman (1995) who said that focusing on self-esteem



“parents and teachers are making this generation of children more vulnerable to depression”, and Damon (1995) who criticized self-esteem work in the educational environment by calling it a “mirage”.

Perhaps the most significant and influential scientific work of this type was led by Roy Baumeister, one of the major authorities in self esteem work today. Although earlier a strong advocate supporting the importance of self esteem for understanding human behaviour (Baumeister, 1993), a turning point seemed to occur in 1996. It was during this period that Baumeister and colleagues (1996) suggested that high self esteem appears to be associated with certain undesirable forms of behaviour, most notably egotism, narcissism, and even violence. They termed these negative findings as the “dark-side” of self esteem. Crocker and Nuer (2004) even questioned the merit of pursuing any kind of self esteem.

American psychologist Albert Ellis (2001) is another one of the prominent theoretical and operational critiques of the concept of self-esteem. He has criticized the philosophy as “unrealistic, illogical and self- and socially destructive” – often doing more harm than good. Questioning the fundamentals and value of global ego strength, he has claimed that self-esteem is based on irrational definitional premises, over-generalized, perfectionistic and grandiose thinking (Ellis, 2001). His improved substitute to self-esteem is unconditional self-acceptance and unconditional other-acceptance, both concepts included in his therapeutic system called “Rational Emotive Behavior Therapy” (Ellis, 1958). In 1998 J.P Hewitt released a book with a detailed analysis of the concept of self-esteem titled “The Myth of Self-esteem”.

### **3.8 Summary and future theories**

At the turn of the 21<sup>st</sup> century - some new research focused on the likelihood that various types of self-esteem can be linked with negative outcomes, such as anxiety, depression, narcissism or aggression (Mruk, 2006). But other works indicate that another type of self esteem is associated with desirable characteristics, something that is referred to as “healthy”, “genuine”, or “authentic” self esteem (Deci, Ryan and Kernis, 1995). Also recent developmental work seems to be making substantial progress in understanding the antecedents of self-esteem (Harter, 1999 in Mruk 2006) something that Stanley Coopersmith (1967) called for decades ago. Perhaps even more important, the continuous critical look at self-esteem that has come to characterize much of the field today has not only led to re-evaluating old theories, but has also stimulated the construction of some powerful and exciting new ones, such as self-determination theory (Deci and Ryan, 2002) which is concerned with supporting individual’s natural or intrinsic tendencies to behave in effective and healthy ways; terror management theory (Solomon, Pyszczynski and Greenberg, 1991) which suggests that people derive their sense of self-esteem from an adherence to cultural worldviews and beliefs in order to suppress anxiety about life and death, and Sociometer theory (Leary, 1999), which advocate that self-esteem evolved to monitor one’s social acceptance, and is used as a gauge for avoiding social devaluation and rejection.

In conclusion, a variety of definitions, theories, criticism, support, trains of thought and instruments have been dedicated to the study of self esteem and it continues to be a very actual theme in psychology and other related fields even today. The next chapter will focus on Social Identity theory which is the basis on which self esteem can be explained and illustrated.

## CHAPTER 4

### SOCIAL IDENTITY THEORY

#### 4.1 Introduction

Cast and Burke (2002) illustrated that although self-esteem has been conceptualized as an outcome, motive and buffer, there is no comprehensive theory of self-esteem. They proposed that Social Identity Theory (SIT) can present a theoretical structure for the integration of the variety of conceptualizations of self-esteem and argued that self-esteem is an outcome of, and essential ingredient in, the self-verification process that occurs within groups, maintaining the individual as well as the group. In addition, Stryker and Burke (2000) proposed linking identity theory and social identity theory to develop a more fully incorporated view of the self. This chapter deals with the history, elements, core assumptions and statements of SIT and concludes with contributions, problems and future challenges of the theory.

#### 4.2 History of the concept

The origin of SIT is found in early studies by Henri Tajfel on social factors in perception (Tajfel 1959) and on cognitive and social belief aspects of prejudice, racism and discrimination (Tajfel 1963). It was created and entirely conceptualised in conjunction with John Turner in the mid to late 1970's (Tajfel 1974). During the 1980's considerable theoretical and empirical progress were made, as an increasing number of researchers, starting working in this field (Hogg, Terry and White, 1995). Research on SIT emerged into Self Categorization Theory (Turner et al. 1987), which is a theory of the self, group processes and social cognition. Although distinct from SIT in some areas, it is similar enough to be considered as part of the same theoretical and metatheoretical enterprise as SIT (Hogg and McGarty, 1990).

### **4.3 Social Identity defined**

At the beginning, a working definition of the concept of social identity needs to be defined before proceeding to the theory. Robert Lane (1962) set forth the following definition: “Social identity... refers to the use of attributes derived from a man’s identification with social groups to describe and define himself.” It is the contribution made to the response to “Who am I?”, by a sense of being part of a certain part of human society or social groups for example a community, a professional society, a church, a nationality group, a neighborhood or organization memberships, religious affiliation and gender or age cohort (Tajfel and Turner, 1986). In short, an individual’s social identity is constructed through his associations with social groups (Hooper, 2001), or the individual’s self-concept derived from perceived membership of social categories (Hogg and Vaughan, 2002), together with the emotional significance attached to this (Tajfel, 1982).

In initial research, social identity incorporated the emotional, evaluative and psychological correlates of in-group organization (Turner et al 1987). Later a distinction was made between the self-categorization element of the self esteem (evaluative) and commitment (psychological) element in order to scientifically examine any relationships between them (Ellemers and Van Knippenberg, 1997)

### **4.4 Social Identity Theory**

Social identity theory (SIT) can be defined as an interrelated group of social psychological theories which revolves around when and why individuals identify with, and behave as members of social groups, and the acceptance of mutual attitudes to outsiders. This theory of intergroup relations attempts to define a level of self-definition (social identity), that corresponded with the level of analysis of intergroup behaviour in intergroup contexts (Ellemers, Spears and Doosje, 2002). The theory argues that positive collective identity develops when an individual perceives his or her social group as valuable in comparison to other groups (Utsey and Constantine, 2006).

#### **4.5. Elements of Social Identity Theory**

To a large extent SIT revolves around psychological and sociological aspects of group behavior - how individuals are led to view themselves as members of one group/category (the in-group) in comparison with another (the out-group). More specifically, SIT is composed of four elements namely categorization, identification, social comparison and psychological distinctiveness, which will be discussed in the following section.

##### **4.5.1 Categorization**

Individuals often allocate people (and themselves) into different categories. Although people develop their identities largely based on the social categories to which they belong, over the course of their lives each person has a distinctive combination of social categories, therefore the set making up that person's self-concept is unique (Hogg and Abraham, 1998).

According to Hogg et al (1995) categorization more clearly defines intergroup restrictions by producing group specific stereotypical and normative perceptions and behaviours. Categorization is a basic cognitive process that equally relies on social and nonsocial stimuli to emphasize those aspects of experience which are subjectively significant in a particular situation. SIT propose that group membership leads to in-group/self-categorization and enhancement in manners that favor the in-group at the expense of the out-group (Wilder and Allen, 1974). The illustrations (minimal group studies) of Turner and Tajfel (1986) confirmed that the simple act of individuals categorizing themselves as group members was adequate to lead them to demonstrate in-group favoritism.

The consequence of self-categorization as Hogg and Abraham (1988) identified it, is an emphasis of the perceived similarities between the self and other in-group members, which may lead to ethnocentrism (Turner et al, 1987). According to Stryker and Burke (2000) this emphasis occurs for all the attitudes, beliefs and values, affective reactions, behavioral norms, styles of speech and other factors that are thought to be associated with the relevant intergroup categorization.

#### **4.5.2 Identification**

Individuals relate or identify with certain groups (in-groups), which serves to reinforce their self-esteem. This yearning for self-esteem stabilizes the group because it motivates individuals to develop and sustain relationships that confirm identities (Caste and Burke, 2002).

According to Tajfel (1982) social behavior exists on a continuum that ranges from the entirely interpersonal to the entirely intergroup. In situations where personal identity is prominent, the individual will identify with others in an interpersonal manner, reliant on any personal relationships existing between individuals and their personality traits. However, under certain conditions, social identity is more prominent in self-conception, and this is when behaviour is different in the sense that the identification is based on group behaviour.

#### **4.5.3 Social Comparison**

After the categorization and identification processes, individuals are driven to achieve positive self-esteem by positively differentiating their in-group from a comparison out-group on some treasured dimension (Tajfel and Turner, 1979). Individuals compare their groups with other groups, experiencing a constructive prejudice toward the group to which they belong. Tajfel and Turner (1979)

identified three variables that made a significant contribution to the appearance of in-group favoritism:

- a) The degree to which individuals relate with an in-group to internalize that group membership as a trait of their self-concept.
- b) The degree to which the established framework provides a basis for comparison between groups.
- c) The perceived significance of the comparison group (similar or proximal), which itself will be produced by the relative and absolute position of the in-group.

Thus, individuals tend to display favoritism when an in-group is essential to their self-definition and a particular comparison is significant or the result is contestable. According to Brown (2000) in-group favoritism prevails even in situations where there are only some or no apparent extrinsic causes for it.

The consequence of the social comparison process is the discriminatory application of the accentuation effect (Hogg and Abrahm, 1988), or a maximizing difference motive (Tajfel et al (1971) principally to those dimensions that will result in self-enhancing outcomes for the self even at the cost of absolute in-group gain. Specifically, an individual's self-esteem is improved by evaluating the in-group and the out-group on dimensions that results in the in-group to be evaluated positively and the out-group to be evaluated negatively (Stryker and Burke, 2000). Additional support for the hypothesis that social identity processes underlie in-group bias was the finding that group members seem to feel better about themselves after engaging in such discrimination (Lemyre and Smith, 1985, Oakes and Turner, 1980).

#### **4.5.4 Psychological Distinctiveness**

Social Identity Theory as formed by Tajfel and Turner (1979) was initially developed to comprehend the psychological foundation of intergroup discrimination. Tajfel et al (1971) set out to determine the minimal circumstances that would lead members of one group to differentiate in favor of the in-group to which they belonged and against another out-group. Individuals want their identity to be both different from and positively compared with other groups. A general finding is that out-group members are seen as more alike to each other than are in-group members (Linville, Fischer and Salovey 1986, Ostrom and Sedikides (1992).

This search for positive distinctiveness means that individual's logic of who they are is defined in terms of 'we' rather than 'I'. According to Brown (2000), in the event of an inadequate identity, people may strive to leave their group or find ways of achieving more positive distinctiveness for it.

#### **4.6 Core Assumptions and Statements**

##### **4.6.1 Level of self and social identities**

In Social Identity Theory, a person has not one "personal self", but rather numerous selves that align to wider circles of group membership. Diverse social contexts may prompt a person to base his thoughts, feelings and actions on his personal, family or national "level of self" (Turner et al, 1987).

In addition to the "level of self", an individual also has several "social identities" conformed into hierarchies of salience and importance. According to Turner (1982) an identity higher up in the hierarchy, will be more influential to an individual's appearance of the self. Each identity advise the individual of who he/she is and what this identity entails, and which ever of these many identities is most salient for a person at any time will differ according to the social



circumstance. A salient social identity is "one which is functioning psychologically to increase the influence of one's membership in that group on perception and behavior" (Oakes 1987). Identity theory articulates that individual salience hierarchies exist based on commitment to particular identities (Flynn, 2003).

#### **4.6.2 Aspects of the Self-concept**

The argument made by Tajfel and Turner (1979) is that there are two separate aspects of the self-concept. The first is *personal identity*, described as fundamentals of self-identity derived from individual personality traits and interpersonal relationships which includes specific attributes such as competence, talent and sociability (Tajfel and Turner, 1979). The second facet is *social identity* (or in American terminology, collective identity), which refers to elements derived from belonging to a specific group. Tajfel and Turner (1986) argued that this distinction between personal and social identity underlie the difference between interpersonal situations (where personal variables primarily control behaviour) and group situations (determined mainly by category based processes). Cheek and his colleagues (Cheek and Briggs, 1982) made this distinction precise by distinguishing among *three* rather than two aspects of identity namely personal-, social- and collective identity.

#### **4.6.3 Social Belief structures**

Hogg et al (1995) emphasized the fact that SIT properly articulates the basic sociocognitive processes of categorization and self-enhancement with subjective belief structures (individual's belief regarding the nature of associations between their own group and relevant out groups). These beliefs relate to the stability and legitimacy of intergroup status relations and the likelihood of social mobility (psychological passing from one group to another) or social change (psychologically changing the self evaluative consequences of existing in-group membership) (Hogg et al, 1995). Subjective belief structures influence the particular behaviours that group members assume in the quest for self enhancement through evaluative positive social identity (Hogg et al, 1995).

## 4.7 Contributions, Problems and Future Challenges of Social Identity Theory

Brown (2000) identified the following four areas where SIT has made its most significant contributions:

- Explaining in-group bias
- Understanding responses to status inequality
- Stereotyping and perceptions of group homogeneity
- Changing intergroup attitudes through contact

He also identified the following problems for Social Identity Theory namely:

- the relationship between group identification and in-group bias
- the self-esteem hypothesis
- the occurrence of positive-negative asymmetry in inter-group discrimination
- the effects of intergroup similarity and the choice of identity
- Preservation strategies by low-status groups.

Since the focus of the current study is on self-esteem the self-esteem hypothesis problem will be discussed in further detail.

### 4.7.1. The Self-esteem Hypothesis

As discussed, one of the key assumptions of SIT is that in-group bias is driven by a need to see one's group, (and hence oneself) in a positive light. Brown (2000) illustrated that there is thus accepted to be a causal relation between intergroup differentiation and self-esteem. Abrams and Hogg (1988) focused on this proposal in identifying two corollaries. Firstly, positive intergroup differentiation leads to superior self-esteem (individuals feel better about themselves having treated or judged the in-group more favorably than the out-group) and secondly, individuals with originally depressed self-esteem should illustrate more

differentiation in order to recover to “normal levels”. According to Brown (2000), two decades of research have not indisputably supported either corollary, although the first has fared somewhat better than the second (Rubin and Hewstone, 1998).

Turner (1999) argued that the implications of these findings on SIT is minimal, due to the fact that tests of the corollaries have utilised measures which inappropriately focus on personal (as opposed to collective) and trait (as opposed to state) feelings of self-esteem. Brown (2000) pointed out the irony that two of the most supportive experiments for the self-esteem hypothesis in fact applied personal indices of self-esteem (Lemyre and Smith 1985, Oakes and Turner (1980).

Farnham, Greenwald and Banaji (1999) offered another solution to make sense of these confusing literature findings by suggesting social desirability factors may explain the generally weak and inconsistent correlations between self-esteem and bias. Individuals participating in research may feel hesitant about expressing excessive high (or low) self-esteem or illustrating too much intergroup discrimination. These concerns could possibly reduce the variability on both indices and consequently depress any correlation between them. Farnham et al (1999) proposed that the use of instruments with less obvious or convenient response formats may prevent this difficulty and illustrated that their implicit measure of self-esteem had a reliable correlation with an implicit measure of in-group bias, but less well with conventional (i.e. explicit) measures of self-esteem.

Lastly, Brown (2000) identified five areas with great potential for development:

- Expanding the concept of social identity
- Predicting comparison choice,
- Adding an affective component
- Managing identities in multicultural contexts, and

- Social identity processes at an implicit level

#### **4.8 Conclusion**

This chapter focused on the concept of social identity (and collective identity) and gave a broad overview of Social identity Theory as developed by Tajfel and Turner (1986), which form a foundation from which self-esteem can be understood. Categorization, Identification, Social comparison and psychological distinctiveness were all discussed as elements of social identity theory. Core assumptions and statements regarding levels of social self, aspects of the self-concept and belief structures further clarified the theory. Finally contributions, problems and future challenges of SIT and especially the self-esteem hypothesis as related to the study.

Now that a thorough understanding of self-esteem and the theory on social identity has been established the focus will shift to literature findings on construct validity and confirmatory factor analysis in order to apply to the Collective self-esteem scale as developed by Luhtanen and Crocker (1992).

## CHAPTER 5

### CONSTRUCT VALIDITY

#### 5.1 Introduction

According to Dawis (1992) the invention and development of psychometric tests in psychology is similar in impact as the invention of the microscope in biology. The quality and validity of all new measures that were being developed became an increasing concern for the American Psychological Association during the 1950's. Therefore they decided to assemble an effort to set standards for psychological measures (Trochim, 2006). These standards are used to determine if an instrument is a high-quality psychometric tool, and essential evaluation criteria include reliability, validity and standardization. Before utilizing an instrument in any form of research, the reliability and validity of the instrument must be determined.

This chapter will focus on reliability and validity of self-esteem measures, including different types thereof, and more specifically on construct validity. The aim of this study is to determine the construct validity of the CSE as developed by Luhtanen and Crocker (1992) through a process of confirmatory factor analysis, which will also be introduced.

#### 5.2 Validity of Self-esteem measures

A valid measuring instrument, according to Bostwick and Kyte (1981), can be described as doing what it is intended to do, measuring what is supposed to measure (Pallant, 2005), and as yielding scores whose differences reflect the actual differences of the variable being measured, as opposed to random or continuous errors. A brief overview of the different types of validity will be given, before moving the focus to previous findings of the CSE's psychometric properties (Luhtanen and Crocker, 1992).

As mentioned there are different types of validity including content-, face-, criterion- and construct validity (Trochim, 2006). The focus of the current study is on construct validity, which refers to the degree to which an instrument measures the theoretical construct or feature propose to measure (Foxcroft and Roodt, 2005). It is necessary because the researcher needs to evaluate the extent to which the traits (constructs) identified, supposed to be reflected in the test, is in fact present in the test (Owen and Taljaart, 1996). Wells and Marwell (1976) described how self-esteem measures can be evaluated against three traditional indicators of test validity to be discussed in the following section.

### **5.2.1 Criterion validity**

The uppermost type of validity such an instrument can have occurs when test items or tasks predicts a specific outcome precisely. According to Wells and Marwell (1976), unfortunately such *criterion validity* is unlikely to occur with self-esteem tests, partly due to the fact that it is such a complex phenomena.

### **5.2.2 Content validity**

*Content validity* is another approach and is based on whether the test questions of the instrument under investigation are related to self-esteem in some logical way (Wells and Marwell, 1976). For instance, is it possible to define what kinds of behaviours or attitudes are most likely to be associated with high and low self-esteem (in this case), and then design questions that revolve around that. This type of validity increases with the thoroughness of the questions. The more the test covers the whole range of factors thought to reflect self-esteem, the greater the validity of the instrument (Wells and Marwell, 1976).

### **5.2.3 Construct validity**

The third way to achieve a significant degree of validity in self esteem testing is *construct validity*. The first formal expression of the idea of construct validity was contained in the rather grandiose idea of the nomological network (Cronbach and Meehl, 1955). This network specify the theoretical framework of what

researchers are trying to measure, an empirical framework of how they propose measuring it, and specification of the correlations among and between these two frameworks. According to Trochim (2006) the nomological network provided researcher with a theoretical foundation for the concept of construct validity, but it didn't offer a methodology to effectively determine whether their measures had construct validity.

Wells and Marwell (1976) defined construct validity as “the degree to which certain explanatory concepts or constructs accounts for performance in the test” or as defined by Welman and Kruger (2001) as: “the degree to which procedures intended to produce the independent variable of interest indeed succeed in generating this variable rather than something else”. This type of validity is based on the connections between a particular self-esteem instrument and the theory or definition of self-esteem that a researcher is using in his or her work. If the theory is well developed and the test measures represent the major components of self-esteem (as they are expressed by the theory), the measure has a definite logical integrity or theoretical validity (Wells and Marwell, 1976).

### **5.3 Types of construct validity**

In 1959, Campbell and Fiske develop a multitrait-multimethod matrix (or MTMM) as a method for assessing construct validity. Together with the MTMM they introduced convergent and discriminant validity as two new subcategories of construct validity. To illustrate construct validity under the MTMM approach, researchers had to demonstrate that both convergent and discriminant validity were present in their measures (Trochim, 2006). The following section will discuss the differences between these two types and also provides an overview of previous literature findings on the validity of the Collective self esteem scale (Luhtanen and Crocker, 1992).

### 5.3.1 Convergent validity

Convergent validity is the principle that measures of theoretically similar constructs should be highly intercorrelated. This type of validity indicates the extent of agreement between measurements of the same characteristic obtained by different approaches believed to measure the same characteristic (Trochim, 2006).

Luthanen and Crocker (1992) used the convergent validation method and performed correlation studies with a variety of other instruments including: the Rosenberg (1965) Self-esteem Scale; Hui's (1988) Individualism-Collectivism scale (INDCOL); the Cheek et al. (1985) Aspect of Identity Questionnaire III (AIQ-III); Wagner and Mochs (1986) measure assessing individualism-collectivism in the workplace (ICW); Sampson's (1978) Internal Orientation Scale (IO); Maslach, Stapp and Santee's (1985) Individuation Scale; and a revised version of the CSES (CSES-R).

Convergent validity of the CSE was demonstrated by predictable correlations with other measures (Luhtanen and Crocker, 1992). Consistent with the notion that personal and collective self-esteem are distinct yet share a common core, in each of the studies the CSE and its subscales correlated positively with the existing measure of personal self-esteem. In two of the three studies, the Membership subscale, which assesses the most individualistic part of social identity (one's personal worthiness as a social group member) had the highest correlation with personal self-esteem as measured by Rosenberg (1965) scale. Validity for the public subscale was also demonstrated showing, that certain racial minorities (Blacks and Asians) reported lower levels of public collective self-esteem than Whites and that the subscale showed a significant negative correlations with belief in discrimination based on race and, to a smaller extent,



on sex. Collective self-esteem was also shown to correlate moderately with group-oriented measures such as Hui's (1988) Individualism-Collectivism scale.

### **5.3.2 Discriminant validity**

The principle of discriminant validity is that correlations between measures of theoretically different constructs should not be high, meaning different instruments used to measure different constructs, should not correlate too strongly with instruments of a comparable but distinct characteristic (Trochim, 2006).

### **5.4 Reliability findings of the CSE**

For reliability determination, internal consistency is calculated, which is a measure of reliability of different survey items intended to measure the same characteristic (Statistics.com, 2009). The indicator used to measure internal consistency is Cronbach's alpha, a statistic calculated from the pairwise correlations between items which range between zero and one. A general guideline is that an alpha of 0.6-0.7, or above 0.7 (Pallant, 2005) indicates acceptable reliability, and 0.8 or higher indicates good reliability. High reliabilities (0.95 or higher) are not necessarily advantageous; as this can illustrate that the items may be completely unnecessary.

The aim in developing a reliable instrument is for scores on comparable items to be correlated (internally consistent), but for each item to make a unique contribution as well.

Luhtanen and Crocker (1992) reported sub-scale alphas in the range of 0.7 to 0.8 and Cronbach's Alpha coefficients were found to be substantial ranging from 0.83 to 0.88 for all scales. In reliability studies on a race specific version of the CSE (Crocker et al, 1994) the internal consistencies for the combined sample were 0.63, 0.79 and 0.86, for the Membership, Private, Public and Identity subscales

respectively. On the race specific sub-scales, coefficient alphas were 0.75, 0.72, 0.88 and 0.84 (for the Membership, Private, Public and Identity subscales respectively.) Luhtanen and Crocker (1992) also been reported that the Collective Self-Esteem Scale has satisfactory test-retest reliability. Their 6-week test-retest correlations were as follows: total scale (16 items)  $r = 0.68$ . Membership subscale  $r = 0.58$ ; Private subscale  $r = 0.62$ ; Public subscale  $r = 0.66$ ; and Identity subscale  $r = 0.68$ .

### 5.5 Confirmatory factor analysis

Confirmatory factor analysis (CFA) is a multivariate statistical procedure that is applied to test how well the measured variables represent the number of constructs (Statisticssolutions.com, 2009). It is thus a tool that is used to confirm or reject the measurement theory. Constructs are attributes which exist in the theoretical sense, not literal or physical. Cronbach and Meehl (1955) defined a construct as “some postulated attribute of people, assumed to be reflected in test performance.” Based on Luhtanen and Crocker’s theory (1992) the four constructs to be assessed in the proposed study include Membership esteem, Private collective self-esteem, Public collective self-esteem and Importance to Identity (Luhtanen and Crocker, 1992). A short description of each of these constructs is the following:

- *Membership esteem* - Measures a person’s judgement of their worthiness as members of their social group.
- *Private collective self-esteem* - Assesses personal evaluation of how good one’s social groups are.
- *Public collective self-esteem* – Measures an individual’s perception of how positively other people evaluate his/her social groups.
- *Importance to Identity* – Measures the importance of a person’s social group memberships to his/her self concept.

In the development stages of the CSES Luhtanen and Crocker (1992) performed factor analyses on the proposed measure. They found that the four factors accounted for 60.7% of the variance. Factor loadings ranged from 0.54 to 0.83. Each item clearly loaded on its appropriate factor (four items into each factor), and only five of the minor loadings exceeded 0.30 (the highest being 0.44).

Because exploratory factor analyses do not allow testing the adequacy of fit of different factor models, such as higher-order, hierarchical models, they also examined four models of the CSES factor structure using confirmatory factor analyses. Luhtanen and Crocker (1992) used the maximum likelihood method of estimation in EQS (Bentler, 1989). The fit on the four models was investigated using multiple criteria: the chi-square/degrees of freedom ratio, the Bentler and Bonett (1980) normed fit and nonnormed fit indexes, and the Bentler (1990) comparative fit index.

Their findings were that none of the models show a good fit, especially with regard to the chi-square statistic and the chi-square/degrees of freedom ratio. However, the four factors correlated and the hierarchical models clearly described the data better than the one-factor and the four-factor uncorrelated models (Luhtanen and Crocker, 1992). These two models yielded acceptable values for the normed fit, nonnormed fit, and comparative fit indexes, and neither appeared to be superior with regard to representing the data.

## **5.6 Summary**

The importance of determining validity and reliability when using psychometric assessments has been discussed in this chapter. Criterion -, content, and construct validity has been investigated as different types, and subtypes of construct validity namely convergent and discriminant validity was explored. The focus then shifted to the Collective Self esteem scale (Luhtanen and Crocker, 1992) and previous findings on the psychometric properties of the CSE. This forms the background to the following chapters which will describe the

methodology of the study and eventually results and findings on the confirmatory factor analysis as compared to findings and the theoretical model proposed by Luhtanen and Crocker (1992).

## CHAPTER 6

### METHODOLOGY

#### 6.1 Introduction

As discussed earlier the aim of the study is to perform confirmatory factor analysis of the Collective Self Esteem (CSE) questionnaire (Luhtanen and Crocker, 1992). In order to perform the necessary statistical analysis needed for this, the questionnaire was distributed to participants for completion and the results thereof formed the database for all analysis. This chapter focuses on the research approach, design and description of the CSE measurement instrument. Thereafter the implications of the chosen research design on validity and reliability is discussed, and the sampling and data collection methods are described. The final part of this chapter revolves around the techniques and procedures used to analyze the data.

#### 6.2 Research approach

The study employs an exploratory, quantitative research method, with data being gathered through the distribution of the CSE questionnaire (Luhtanen and Crocker, 1992). The accumulated data was analyzed and confirmatory factor analysis performed on the data to determine the construct validity.

#### 6.3 Research Design - Survey

A non-experimental, cross-sectional survey research design was used for the purposes of this study (Kerlinger, 1986). Cross-sectional studies are a type of observational study that is employed when data are collected at a single point in time from a sample selected to represent a larger population (De Vos, 1998). According to Van Wagner (2009) this type of study utilizes a sample of individuals who differ in the variable under investigation, (in this case Collective self esteem), but share other qualities such as socioeconomic status, educational background, ethnicity, race or language. In performing a cross-sectional study,

respondents answer a series of questions on a questionnaire (that addresses self esteem in this case) without any attempt to follow up or retest.

This is the most suitable research design for the study, due to the fact that the aim is look at a variable at a particular point in time, and there is no need to take multiple measures over an extended time period (as in longitudinal studies). The following section is an overview of the CSE scale used (Luhtanen and Crocker, 1992).

#### **6.4. Instrument: Collective Self-esteem Scale**

##### **6.4.1 Purpose**

The purpose of the CSE as developed by Luhtanen and Crocker (1992) is to measure an individual's positive social or collective identity.

##### **6.4.2 Description**

The original Collective Self-esteem Scale (CSE) Luhtanen and Crocker (1992) was used in this study (see Annexure B). The self-esteem scale includes 16 items measuring the following four subscales, defined as follows:

- *Membership esteem* - Measures a person's judgement of how worthy they are as members of their social group.
- *Private collective self-esteem* - Assesses personal judgement of how good the social groups an individual belong to are.
- *Public collective self-esteem* - Measures an individual's perception of the extent to how other people evaluate his/her social groups positively/negatively.
- *Importance to Identity* – Measures the importance of an individual's social group memberships to his/her self concept.

### **6.4.3 Scale**

The Collective Self Esteem (Luhtanen and Crocker, 1992) instrument is designed as a seven-point Likert-type scale, with participants having to respond according to the extent that they agree or disagree with the statement made in each item. The numerical seven point scale is as follows:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Disagree somewhat
- 4 = Neutral
- 5 = Agree somewhat
- 6 = Agree
- 7 = Strongly agree

The rating scale provides for a standardized response set, which can be applied in analysis and comparisons between groups of participants.

## **6.5 Implications of the Research Design for Validity and Reliability**

The following section discusses the validity and reliability of survey methodology. Therefore, threats to internal and construct validity will be discussed as related to the proposed study.

### **6.5.1 Threats to Internal Validity**

Threats to internal validity (estimate of the extent to which conclusions about causes of relations are expected to be true) (Ohlund and Yu, 2009) of the survey research design was considered in the study and could include the following:

#### **History**

The idea of history relates to events which take place simultaneously with an intervention that may influence the dependant variable (Welman and Kruger, 2001). These will result in changes in the dependent variables that can not be

credited to the independent variable. The possibility therefore exist that respondents might have been influenced by external factors, for example: data collection took place during the election year in South Africa, and participants might have wanted to present themselves (or their ethnic group) in a favorable light due to all the focus in the media on political parties and all psychological processes associated with that.

### **Selection bias**

The convenience sampling method could have resulted in a group of participants that is not representative of the population as a whole. The participant may share similar characteristics in their groups that may not necessarily be evident across all categories of participants. According to Ohlund and Yu (2009), one way to try and avoid selection bias was to increase the sample size. Therefore the Researcher aimed to obtain as many completed CSE's as possible within the time and resource constraints.

### **Subject Effect**

The Researcher aimed to ensure that any potential threats to construct validity were mitigated by taking the “subject effect” into consideration throughout the research process. Due to the fact that participants was aware that their perceptions and experiences related to Collective Self-esteem for their specific ethnic group was assessed, they might have answered questions differently than they would in more familiar situations. Due to the convenient sampling method, a lot of the questionnaires will be distributed to acquaintances of the Researcher, and it is possible that some may want to jeopardize or enhance the results of the proposed study. Luckily the focus is on the statistical properties of the instrument and not necessarily on a set of expected results – therefore subject effect should be insignificant.



### 6.5.2 Social threats to construct validity

Additional to the above mentioned factors, Trochim (2006) identified the following social threats to construct validity: hypothesis guessing, evaluation apprehension and researcher expectancies. These will be discussed shortly as related to the study.

- *Hypothesis guessing*

Often people don't just passively take part in a research project, instead they are likely to try to figure out or "guess" what the study is really about (Trochim, 2006). The timing of the distribution of the questionnaire (during the election year) might influence individuals into thinking the study might be related to the election and/or race differences, especially within the South African context and history of racism, prejudice, discrimination etc.

- *Evaluation apprehension*

Many individuals feel anxious about measurement instruments and evaluations (Trochim, 2006). Also, they might not feel comfortable in answering questions related to self-esteem truthful, since they might suffer from low self-esteem (for example). According to Trochim (2006) participants have a natural tendency to want to want to be seen in a favorable light, and this can threaten construct validity.

- *Researcher expectancies*

Researcher expectancies relates to conditions where the researcher is consciously or unconsciously communicating messages regarding the ideal findings or responses of the survey (Trochim, 2006). Fortunately, this is not likely to be applicable to the specific study due to the fact that the researcher is more interested in the correlation between constructs, i.e. determining construct validity than the actual results of the instrument.

## **6.6 Face Validity**

Although some methodologists argue that face validity (an instrument rationally appears to be measuring what is supposed to measure) is not theoretically a form of validation, it is still a desirable characteristic of a measurement instrument (De Vos et al. 1998). Without it resistance might have encountered on the part of respondents, which could have affected the results. Since the CSE is a popular measure, which has been utilized in a variety of studies for over a decade (Luthanen and Crocker, 1992), the researcher assumed that face validity is sufficient for research purposes.

## **6.7. Rating errors**

Rating errors will always be a concern in surveys where rating scales are used, which can have an influence on the validity of the instrument (Saal, 1980). A wide selection of rating errors have been described in the research literature (Saal, Downey, and Lahey, 1980), and the following most prominent ones will shortly be discussed: halo effects, leniency effects, and central tendency effects.

### **6.7.1 Halo errors**

Halo errors are considered to be the result of participants generalizing from their overall impressions when evaluating specific characteristics (Murphy, Jako, and Anhalt, 1993).

### **6.7.2 Leniency errors**

Leniency errors come about when participants rate items unrealistically high; rating inflation is often thought to result from raters' unwillingness to accept the consequences of giving low ratings, even when they are evidently deserved (Murphy and Cleveland, 1995).

### **6.7.3 Central tendency**

Although some rating errors may be the result of deliberate distortions on the part of the participant central tendency errors occur when participants do not

distinguish between items or specific aspects (Murphy, 2009), and give a middle or average rating on all items.

## **6.8 Sample**

Sampling, according to Kerlinger (1986) means taking any portion of a population as representative of that population. In any research project, the ideal would be to include a complete population of interest when conducting a study because it will enable generalizations to be made about that population as a whole. Unfortunately this approach is not practically feasible because of cost, inaccessibility and time constraints associated with it (De Vos et al, 2002).

The solution then, lies in sampling, where a portion of the population are drawn to participate in the test, and statistics are computed so the results can be generalized to the larger population. It is key to understand the fact that findings of a study can only be generalized if it can be assumed that what was observed in the sample would also be observed in other groups of subjects from the same population (De Vos et al, 2002).

The Researcher will use the non-probability sampling method of convenience sampling when determining the unit of analysis (Trochim, 2006). With convenience sampling, subjects are selected because of their convenient accessibility to the researcher, i.e. they are easiest to obtain for the study (Gravetter and Forzano, 2006). Questionnaires were distributed to the Researchers' friends, family, colleagues, and acquaintances, while the Study leader assisted by distributing the CSE to students from the University of Pretoria.

Benefits of utilizing this technique of non-probability sampling include the fact that it is relatively easy, fast and usually the least expensive and troublesome, convenience and economy (Welman and Kruger, 2001). The problem with this technique is that bias is introduced into the sample, and there is no evidence that

the samples are representative of the larger population that you're generalizing to (Trochim, 2006).

## **6.9 Data collection**

The CSE and a detailed information-consent form (see Annexure B) were distributed via email, hard copies and some participants completed the questionnaire on a web based system.

Participation was purely on a voluntary basis in the sense that any individual who did not wish to participate were not coerced, and no follow ups were done to enquire on the status of the CSE. To ensure anonymity and minimise anxiety the participants didn't have to provide any identifying details about themselves (names or contact details). Biographical data is included at the end of the CSE and was collected by means of a categorical response format, with respondents being provided with a forced choice of variables pertaining to gender and first language.

Barribeau et al, (2005) discussed the following advantages and disadvantages of survey administration:

- the data collection period is relatively fast,
- generally least expensive,
- less people are required to perform the administration (no field staff needed),
- A lot of questions can be asked about a specified topic giving substantial flexibility to the analysis.
- access to otherwise difficult to locate, active populations are granted, and
- participants can clarify detail or misunderstanding and consult with others.
- By enforcing standardized questions with consistent definitions upon the respondents, measurement is more precise.

Disadvantages include:

- the fact that it can be difficult to obtain cooperation and that there is no interviewer involved in the data collection process.
- A large respondent group needs to participate to ensure that a sufficient number of completed questionnaires will be received.

### **6.10 Techniques and procedures used to analyze data**

The responses of the participants on the CSE (Luhtanen and Crocker, 1992) were captured to populate a database which was analyzed by statistical means. The statistical programme SPSS, was used to conduct the required analysis.

Prior to performing all the analysis reverse scoring was utilized for the following items due to the fact that they're stated in a negative sense.

- **Item 2** - I often regret that I belong to some of the social groups I do.
- **Item 4** - Overall, my group memberships have very little to do with how I feel about myself.
- **Item 5** - I feel I don't have much to offer to the social groups I belong to.
- **Item 10** - Overall, I often feel that the social groups of which I am a member are not worthwhile.
- **Item 12** - The social groups I belong to are unimportant to my sense of what kind of a person I am.
- **Item 13** - I often feel I'm a useless member of my social groups.
- **Item 15** - In general, others think that the social groups I am a member of are unworthy.

To determine the construct validity of the CSE, the correlation of the CSE scale with variables that are known to be related to the constructs supposedly measured by the instrument were examined, or for which there are theoretical

grounds for expecting it to be related (Luhtanen and Crocker, 1992). Correlations that fit the expected pattern will provide evidence of construct validity (Hulya, 2005). The following section will identify and describe in detail the data analysis performed by the SPSS statistical program.

### **6.10.1 Item analysis**

Initial analyses involved the generation of item statistics to determine the quality of the items that are included in the constructs of the CSE Scale. To determine the quality of an item, means, standard deviations, skewness, kurtosis, item-total correlations, and coefficient alphas (if the item was deleted) were calculated. Items with higher item-total correlations, less skewness and a higher contribution to the overall reliability of subscales and the total score were considered to be more favorable. In addition, these statistics gave a preliminary indication of the suitability of proposed analysis procedures. Cronbach's alpha was calculated for the full scale and the four subscales.

### **Reliability coefficient**

De Vos et al (1998) identified dependability, stability, consistency (Foxcroft and Roodt, 2001), predictability, accuracy, reproducibility, repeatability and generalisability as synonyms for reliability. The purpose of establishing reliability is thus more concerned with *how well* something is being measured instead of *what* is being measured. Botswick and Kyte (1981) also noted that high reliability does not guarantee validity, but there can't be valid results without reliability.

Reliability can be estimated in a number of ways, of which the two most common are internal consistency and stability (Heppner, Kivlighan, and Wampold, 1992). Only internal consistency will be discussed as the same test was not administered on two occasions. Internal consistency is a measure of the homogeneity of the items and can be estimated from giving one form of the measure once. It can be obtained by calculating Cronbach's alpha, which

assumes equivalence of all items and is used for items that not score right or wrong (McMillan and Schumacher, 2001). The reliability coefficient varies from 0.00 to 1.00. When the reliability coefficient is found to 0.7 and higher, it is considered to be high and the scores have little error and are highly reliable. Cronbach's alpha were used to illustrate the CSE's reliability and the findings were compared with previous studies such as Luhtanen and Crocker's (1992) where they have determined the reliability of the instrument in three studies.

### **6.10.2 Confirmatory Factor Analysis**

Factor analysis is an analytical/statistical technique based on a correlation that takes a large number of items on a scale and reduces them to a smaller number of underlying or hidden dimensions, referred to as factors (Pallant, 2005). More specifically, confirmatory factor analysis will help the researcher broaden the study of construct validity by allowing investigation of the underlying factors that the test is measuring, and validating previous findings through this process by comparing to previous research (Luhtanen and Crocker, 1992).

Before performing confirmatory factor analysis, the number of factors in the model is hypothesized and often the researcher will also make predictions about which variables will load onto which factors (Kim and Mueller, 1978). The researcher seeks to determine, for instance, if items created in the CSE scale to represent a hidden variable really belong together, and if the findings substantiate previous research. Confirmatory factor analysis, a technique subsumed under the general term Structural Equation Modeling, was used to determine if the items of the CSE measured the following four theorized subscales.

#### **Membership self-esteem:** Items 1, 5, 9 and 13

- I am a worthy member of the social groups I belong to.
- I feel I don't have much to offer to the social groups I belong to.
- I am a cooperative participant in the social groups I belong to.

- I often feel I'm a useless member of my social groups.

**Private collective self-esteem:** Items 2, 6, 10 and 14

- I often regret that I belong to some of the social groups I do.
- In general, I'm glad to be a member of the social groups I belong to.
- Overall, I often feel that the social groups of which I am a member are not worthwhile.
- I feel good about the social groups I belong to.

**Public collective self-esteem:** Items 3, 7, 11, and 15

- Overall, my social groups are considered good by others.
- Most people consider my social groups, on the average, to be more ineffective than other social groups.
- In general, others respect the social groups that I am a member of.
- In general, others think that the social groups I am a member of are unworthy.

**Importance to Identity:** Items 4, 8, 12, and 16

- Overall, my group memberships have very little to do with how I feel about myself.
- The social groups I belong to are an important reflection of who I am.
- The social groups I belong to are unimportant to my sense of what kind of a person I am.
- In general, belonging to social groups is an important part of my self image.

The variables used as indicators are selected on the basis of established theory and factor analysis is applied to determine if they load as expected on the predicted number of factors.



### **6.10.3 Structural Equation Modeling (SEM)**

Structural Equation Modeling (SEM) has become one of the preferred techniques for researchers across disciplines and according to Coughlan et al, (2008) it increasingly is a 'must' for researchers in the social sciences. According to Sudhahar et al (2006) while SEM is characteristically used to model causal relationships among underlying variables (factors), it is also possible to use SEM to explore CFA measurement models. Confirmatory factor analysis involves the analysis of alternative measurement (factor) models using a structural equation modeling package. Using SEM, CFA models can be explored with or without the hypothesis of certain correlations among the error terms of the indicator variables (Sudhahar et al, 2006).

The purpose of the SEM is twofold; first, it aims to determine estimates of the model's parameters, i.e. the factor loadings, the variance and the covariance of the factor, and the residual error variances of the observable variables. Secondly, the aim is to measure the fit of the model i.e. to assess whether the model itself provides a reliable fit to the data. Typically, some of the factor loadings was constrained or fixed to be a zero. For each factor, one loading was also fixed to one, and the factor variances estimated (this was needed to give the latent factor an interpretable scale.)

SEM is often visualized by a graphical path diagram. This has been done by eliminating all straight arrows connecting latent variables from the model, adding curved arrows that represent covariance between each pair of latent variables, and leaving in the straight arrows from each latent variable to its indicator variables and the straight arrows from error and disturbance terms to their respective variables (Sudhahar et al, 2006). The model is ran and evaluated like any other model, where the SEM package is used to generate goodness of fit measures.

Thereafter factor loading on (co)variances was estimated. There are a variety of methods to extract factors from a dataset. The method chosen will depend on the size of the sample, the amount of variables, and/or the extent to which communality estimates of the variables differ (Hisham, 2008). The critical ratio was investigated to determine if factor loadings were significant. In SEM it is usual to analyze the covariance matrix and not the correlations matrix for sound statistical reasons (Hatcher, 1994).

#### **6.10.4 Estimation and Model fit**

Although there are several aspects to modeling, including parameter estimation, model testing, and investigating the size and worth of particular parameters (Bentler, 1999), in general the most vital step in model evaluation is represented a goodness of fit test statistic.

As emphasized by Jöreskog (1969), the classical likelihood ratio statistic based on normal theory maximum likelihood (ML) estimation is the most popular test statistic applied in this field. Bentler (1999) mentions an advantage of ML as the fact that it can be utilized even when sample size is fairly small, perhaps only somewhat bigger than the amount of variables in the analysis, but (Hoyle, 1995) recommend a sample size of between 100 and 200 to have confidence in the goodness of fit statistic. In general a model should contain 10 to 20 times as many observations as variables (Mitchell 1993). The CSE consists of 16 items; therefore a sample size of 160 - 320 should be sufficient to perform the required analysis.

An imperative disadvantage is that it can produce somewhat distorted conclusions about the adequacy of the model under violation of the essential assumption of multivariate normality (Bentler, 1999).

## **6.11 Statistical tests for Model Fit**

### **6.11.1 Chi-square goodness of fit statistic and Chi-square/degrees of freedom ratio**

A statistical chi-square test was determined to assess how well the hypothesized model fits the data (where a nonsignificant chi-square indicates excellent model fit). Guidelines for an acceptable model provide by Carmines and Mclver (1981) is that the relative chi-square should be in the 2:1 to 3:1 range. In addition, ratios between two and five have also been accepted. The chi-square test in SEM shares with all other statistical tests the problems of the need for assumptions, and the dependence of its power on sample size.

### **6.11.2 FIT Indices**

A problem with statistical tests for model fit is that their power varies with the sample size. Due to the fact that the chi-square statistic is very sensitive for sample size, a selection of different fit indices is used to assess model fit (Hox, 2002). All goodness of fit measures is some function of the chi-square and the degrees of freedom. If the model fits perfectly, the fit indices should have the value 1. According to Hox (2002) a value of at least 0.90 is required to judge the model fit as good.

The Bentler-Bonnett (1980) non-normed fit index (NNFI), the Bentler (1990) Comparative Fit Index (CFI), the Bollen Non-normed Fit index (IFI) was included in the analysis as these indices are less sensitive to the effect of sample size.

A relative recent approach to model fit is to acknowledge that models are only approximations, and the problem is to assess how accurate a given model approximates the true model. This view led to the development of RMSEA (Root Mean Square error of approximation). Hair et al. (1998) provide guidelines for interpreting the RMSEA as follows: RMSEA should be below 0.05 for a good model fit; between 0.05 and 0.10 for a reasonable model fit, and a RMSEA that

exceeds 0.10 is poor model fit. Browne and Cudeck's (1992) RMSEA criteria differ somewhat and their guidelines are as follows: below 0.05 indicates close fit, between 0.05 and 0.08 indicates reasonable fit, between 0.08 and 0.10 indicates mediocre fit, and RMSEA exceeding 0.10 indicates unacceptable fit. A perfectly fitting model would yield a RMSEA of 0.00.

## **6.12. Conclusion**

The nature of the study dictated a survey methodology, where the CSE was distributed and completed questionnaires formed a database. Threats to internal validity and reliability were also discussed and the researcher aimed to minimize the possible detrimental effects of these on the data. This database was analyzed by means of the statistical programme SPSS and construct validity was investigated through item analysis, confirmatory factory analysis and structural equation modeling.

The next chapter will discuss the findings of these analyses.

## CHAPTER 7

### FINDINGS AND RESULTS

#### 7.1 Introduction

The 16-item Collective Self esteem scale (Luhtanen and Crocker, 1992) was completed by a sample of 165 students at a University and employees from different companies in Gauteng. Data from the completed questionnaires were analyzed using the SPSS (SPSS Inc, 1996) and EQS (Bentler, 1989) programme. This chapter describes the participants in terms of biographical data and then the relevant findings on item statistics, Cronbach's alpha and confirmatory factor analysis as applied to determine whether items supported the theorized subscales (Luhtanen and Crocker, 1992) are explained.

#### 7.2 Biographical information

The biographical information of the respondents is set out in Table 1. The sample consisted on 30.3% (n=50) females, and 69.7% (n=115) males. Approximately 72% of the respondents indicated that Afrikaans was their home language, 12% English, 15% of the respondent's home language was an African language, 1% German and the remaining 12% spoke other languages than the options listed.

**Table 1: Biographical Information of the Respondents**

Gender	Frequency	Percent	Valid percent	Cumulative percent
Female	50	30.3	30.3	30.3
Male	115	69.7	69.7	100
Total	165	100	100	
Home Language				
1 Afrikaans	119	72.1	72.1	72.1

2 African	15	9.1	9.1	81.2
3 English	19	11.5	11.5	92.7
4 German	1	.6	.6	93.3
5 Other	11	6.7	6.7	100
Total	165	100	100	

### 7.3 Descriptive statistics

The descriptive statistics for the CSE scales are set out in Table 2. The means, variance and standard deviation is a reflection on how the participants responded on the different scales.

**Table 2: Descriptive statistics of the CSE Scale**

	<b>N</b> Statistic	<b>Mean</b> Statistic	<b>Variance</b>	<b>Std.</b> Deviation Statistic
Membership self esteem	165	23.39	14.02	3.74
Private collective self esteem	163	23.98	12.09	3.48
Public collective self esteem	164	19.77	15.06	3.88
Importance to identity	165	18.62	29.46	5.43

The findings indicate that the received data that were evaluated have small but evident deviations from the normal distribution.

## 7.4 Skewness and kurtosis

**Table 3: Skewness and Kurtosis**

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
1	165	1.00	7.00	6.0242	1.29705	-2.082	.189	5.066	.376
2	165	1.00	7.00	5.6182	1.53207	-1.045	.189	-.022	.376
3	165	1.00	7.00	5.2242	1.65039	-.941	.189	-.192	.376
4	165	1.00	7.00	3.8606	1.99663	.046	.189	-1.398	.376
5	165	1.00	7.00	5.8424	1.32955	-1.519	.189	2.033	.376
6	165	1.00	7.00	6.2606	.98709	-2.123	.189	6.578	.376
7	164	1.00	7.00	3.8537	1.84771	.371	.190	-.978	.377
8	165	1.00	7.00	5.2182	1.65306	-1.018	.189	.263	.376
9	165	2.00	7.00	5.6606	1.21724	-1.007	.189	.760	.376
10	165	2.00	7.00	5.9515	1.20874	-1.332	.189	1.337	.376
11	165	1.00	7.00	5.2545	1.58366	-1.005	.189	.210	.376
12	165	1.00	7.00	4.4606	2.04372	-.329	.189	-1.331	.376
13	165	1.00	7.00	5.8606	1.38325	-1.468	.189	1.653	.376
14	163	1.00	7.00	6.1595	.99335	-2.009	.190	5.816	.378
15	165	1.00	7.00	5.4121	1.47329	-.937	.189	-.010	.376
16	165	1.00	7.00	5.0848	1.76485	-.959	.189	-.052	.376
<b>Valid N (listwise)</b>	162								

Skewness and kurtosis was investigated to determine the distribution of scores on the continuous variables. If the distribution is perfectly normal you would obtain a skewness and kurtosis value of 0 (rather uncommon occurrence in the social sciences). Positive skewness values indicate positive skew (scores clustered to the left at the low values). Negative skewness values indicate a clustering of the scores at the high end (right-hand side of the graph). Positive kurtosis values indicate that the distribution is rather peaked (clustered in the centre), with long thin tails. Kurtosis values below 0 indicate a distribution that is

relatively flat (too many cases in the extremes). With reasonably large samples, skewness will not 'make a substantial difference in the analysis' (Tabachnick and Fidell, 2001). Kurtosis can result in an underestimate of the variance, but the risk is also reduced with a large sample (200+ cases), unfortunately the sample is not large, and includes less than 200 cases.

The skewness value provides an indication of the symmetry of the distribution. From Table 3 it can be seen that the coefficient of skewness ranged from -2.123 to .371. Field (2000) proposed that a skewness statistic between -1.0 and +1.0 would be regarded as acceptable. All items except 3,4,7,12,15 and 16 fall outside this range. Kurtosis, on the other hand, provides information about the 'peakedness' of the distribution. According to Field (2000), the kurtosis statistic should be between -2, 0 and + 2, 0. The analysis indicates that items 1, 5, 6 and 14 might be problematic.

### **7.5. Initial item analysis**

Item means and standard deviations were generated for the between 163 and 165 complete cases. The mean item score ranged from 3.85 to 6.26 and Standard deviation from .97 to 2.04. Preferred items according to Watson et al (2001) are items with means close to the centre of the range of possible scores and items that highly correlate with each other (Watson et al, 2001). Meir and Gati (1981) suggest that the standard deviation of an item should indicate adequate distribution and as a rule of thumb, should be greater than 0, 15 for multiscale questionnaires. The details are presented in table 3.



**Table 4: Initial item analysis**

<b>Item Statistics</b>			
	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
VAR00001	6.0242	1.29705	165
VAR00005	5.8424	1.32955	165
VAR00009	5.6606	1.21724	165
VAR00013	5.8606	1.38325	165
VAR00002	5.6074	1.53734	163
VAR00006	6.2638	.98650	163
VAR00010	5.9448	1.21336	163
VAR00014	6.1595	.99335	163
VAR00003	5.2378	1.64620	164
VAR00007	3.8537	1.84771	164
VAR00011	5.2683	1.57861	164
VAR00015	5.4146	1.47745	164
VAR00004	3.8606	1.99663	165
VAR00008	5.2182	1.65306	165
VAR00012	4.4606	2.04372	165
VAR00016	5.0848	1.76485	165

The purpose of performing item analysis is to determine which items are most successful to measure the construct or content domain that the instrument aims to assess. High-quality items consistently assess the same aspect that the total instrument is measuring (Foxcroft and Roodt, 2005). The statistical findings on

the four factors namely Membership self esteem, Private collective self-esteem, Public collective self esteem and Importance to identity will now be presented.

### 7.5.1 Membership self-esteem

Membership esteem measures a person's judgments of how worthy they are as members of their social groups (Crocker et al, 1994). Cronbach's alpha of the membership self-esteem scale was determined at 0.682. The reliability of the scale can therefore be seen as relatively good. According to Nunnally (1978) a reliability coefficient of 0.7 is acceptable, but Santos (1999) and Morgan and Griego (1998) indicated that lower thresholds are sometimes used in the literature, especially if the number of items in a scale is small.

**Table 5: Item statistics – Membership self-esteem**

	Item Total Correlation	Alpha if item deleted
<b>Membership self esteem</b>		
Item 1	.303	.715
Item 5	.583	.535
Item 9	.468	.616
Item 13	.522	.578
<i>Scale reliability <math>\alpha</math></i>	<b>.682</b>	

Regarding the interpretation of item-total correlations, Kline (1986) noted that items should if possible correlate beyond 0.2 with the total score. Item total correlation of less than 0.3, indicates that the item is measuring something different from what the scale is measuring as a whole (Pallant, 2005). The above mentioned items all correlate above 0.3 which is satisfactory.

“Alpha if item deleted” in the above table, indicates the impact of removing each item from the scale. By excluding items with values higher than the membership self-esteem alpha of 0.682, the reliability of the factor can be increased. The only

applicable item from this scale is item 1, where the reliability will increase to 0.715 if the item is deleted.

### 7.5.2 Private collective self-esteem

Reliability of the items theorized to measures personal judgments of how good one's social groups are (Crocker et al, 1994) are presented in Table 5 below. Cronbach's alpha was calculated at 0.695.

**Table 6: Item statistics – Private collective self-esteem**

	Item Total Correlation	Alpha if item deleted
<b>Private collective self esteem</b>		
Item 2	.364	.744
Item 6	.542	.604
Item 10	.519	.604
Item 14	.586	.580
<i>Scale reliability <math>\alpha</math></i>	<b>.695</b>	

The item total correlation values are all above the 0.3 threshold and the only item that will increase the reliability is item 2.

### 7.5.3 Public collective self-esteem

The reliability of the third factor identified by Luhtanen and Crocker (1992) that assesses one's perceptions of how positively other people evaluate one's social groups, resulted in a higher alpha coefficient of 0.706.

**Table 7: Item statistics – Public collective self-esteem**

	Item Total Correlation	Alpha if item deleted
<b>Public collective self esteem</b>		
Item 3	.585	.058

Item 7	.269	.790
Item 11	.653	.543
Item 15	.520	.630
<i>Scale reliability <math>\alpha</math></i>	<b>.706</b>	

Item 7 may be potentially problematic due to the fact that the item total correlation is below 0.3 and the reliability can be significantly increased (to 0.790) should the item be deleted as can be seen in Table 6 above.

#### 7.5.4 Importance to Identity

Of the four factors identified by Luhtanen and Crocker (1992) the Importance to Identity's reliability was the highest, with a Cronbach's' alpha value of 0.699. The items stipulated in the table below are theorized to assess the importance of one's social group memberships to one's self-concept (Crocker et al, 1994). This value (as discussed earlier) can be interpreted as relatively good.

Item total correlations were all above 0.3 and the alpha will not increase by removing any of the four items, indicating they are all good items.

**Table 8: Item statistics – Importance to Identity**

	Item Total Correlation	Alpha if item deleted
<b>Importance to Identity</b>		
Item 4	.447	.661
Item 8	.431	.667
Item 12	.445	.664
Item 16	.636	.542
<i>Scale reliability <math>\alpha</math></i>	<b>.699</b>	

The reliability of the four subscales of the CSE as identified by Luhtanen and Crocker (1992) showed good reliability with values ranging between 0.682 and 0.706. Now that the reliability of the scale has been proven the validity of the scale can be assessed.

## **7.6 Confirmatory Factor Analysis**

Confirmatory factor analysis (CFA) was performed using 164 valid cases. The goal of CFA was to assess the assumption that there were four correlated factors (Luthanen and Crocker, 1992) and that the observed variables (items) loaded on such factors (Watson et al, 2001). This was done through Structural equation modeling and a calculation of the relevant fit indices in EQS 6.2 for Windows. Findings thereof will be described in the following section.

## **7.7 Structural equation modeling**

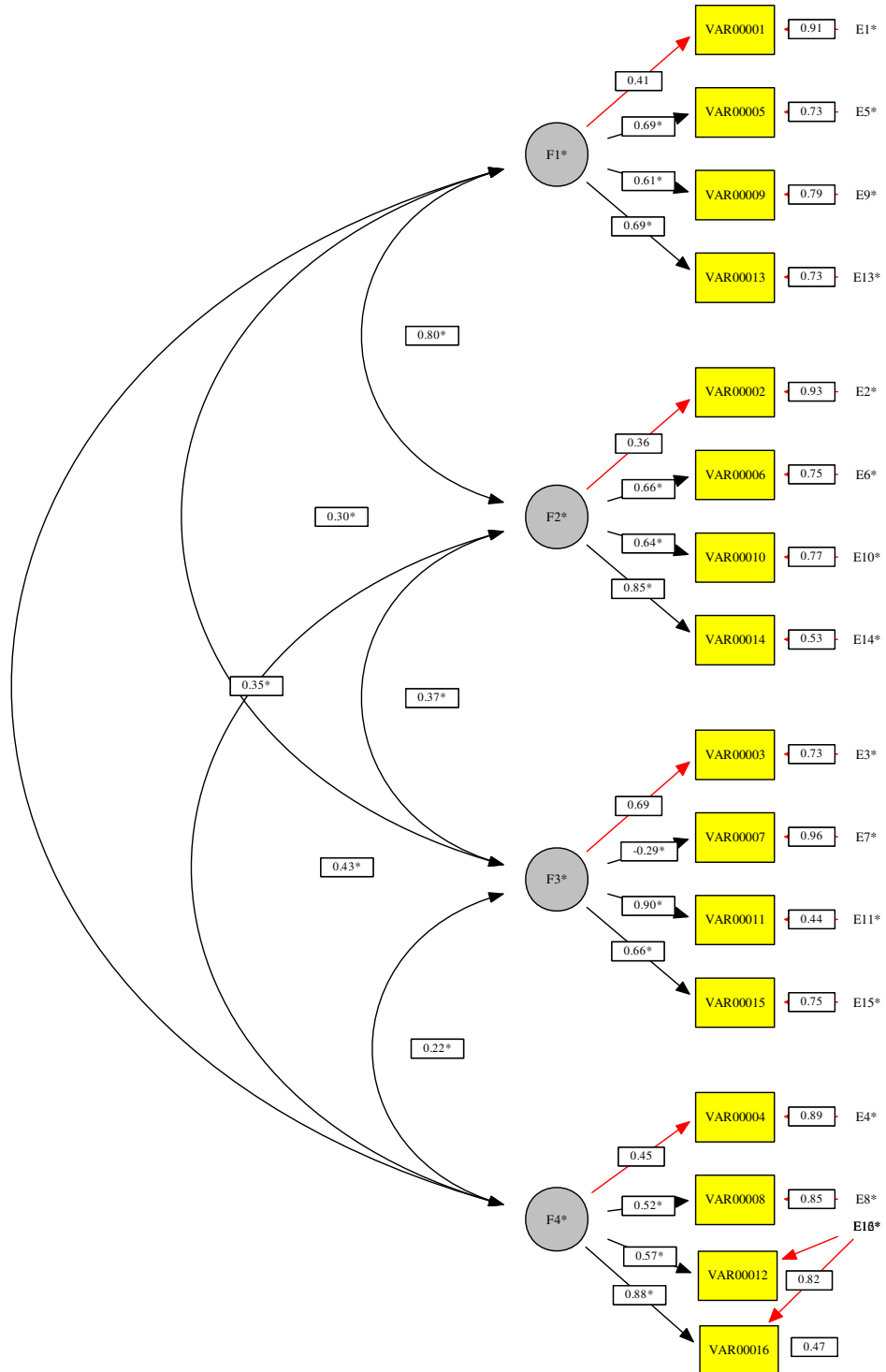
According to Garson (2007) by utilizing a confirmatory approach, a model is tested using Structural Equation Modeling (SEM) goodness of fit tests to establish if the pattern of variances and covariances in the set of data corresponds with the structural model illustrated by Luhtanen and Crocker, (1992).

The first of each set of regression paths linked to the factors was fixed at 1, 0. The structural equation model for the four domains underlying the CSE Scale for the group was generated using EQS (Bentler, 1995) and is set out in Figure 1.

The correlations between the four factors were investigated. The correlation between factor 1 and 2 (Membership self esteem and Private collective self esteem) was 0.8, between factor 2 and 3 (Private collective self esteem and Public collective self esteem) was 0.37, and between factor 3 and 4 (Public collective self esteem and Importance to Identity) was 0.22. The high correlation of 0.8 between factor 1 and 2 indicate that factor analysis didn't succeed in

providing a clear distinction between these two factors and Membership – and Private collective self esteem might actually measure the same latent variable.

**Figure 1 – Estimated parameters as per original theory**



### 7.7.1 Model Fit: Goodness of fit indices

The model adequacy was evaluated by means of goodness of fit measures. The SEM procedures with maximum likelihood (ML) estimation were calculated utilizing the EQS programme. The following indices of model fit were investigated:

- The comparative fit index (CFI) (Bentler, 1989,1990)
- The non-normed fit index (NNFI) (Bentler and Bonnet, 1980)
- The incremental fit index (IFI) (Bollen, 1989)
- The root mean square error of approximation (RMSEA)

As indicated in Table 8 below, the CFI, NNFI and IFI values were 0.826, 0.787 and 0.831 respectively. A value of 0.90 is considered to be a good fit for all the above fit indices (Bentler, 1990; Bentler and Bonnett, 1980; Steiger, 1995). In this analysis, none of these values were found above 0.9 which indicates that the model is not a good fit.

RMSEA is a frequently utilized measure of fit and works with a better venue of independence (Garson, 2005). In this study, the RMSEA had a value of 0.089 (90% confidence interval 0,073-0,104). Hu and Bentler (1998) recommend that the RMSEA should be smaller than or equal to 0.06 as a threshold for an acceptable model fit, resulting in the fact that the RMSEA also indicates that the model is not a good fit.

**Table 9:** Fit indices for the sample

Bentler-Bonett Normed Fit Index	.734
Bentler-Bonett Non-Normed Fit Index	.787
Comparative Fit Index (CFI)	.826

Bollen's (IFI) Fit Index	.831
Mcdonald's (MFI) Fit Index	.680
Root Mean-Square Error of Approximation (RMSEA)	.089
90% Confidence Interval of RMSEA	(.073, .104)

### 7.7.2 Chi square

For the chi-square to be significant, the value should be 0.05 or less. In this specific study, a good model fit will be indicated if the chi-square is not significant; a significant chi-square will be indicates a lack of reasonable model fit (Garson, 2008; Pallant, 2005).

The chi-square was significant at 222.903 based on 98 degrees of freedom ( $p = 0.000$ ) for the total group. The chi-square/degrees of freedom ratio were calculated as 2,275. Based on Carmines and McIver's (1981) guidelines that the relative chi-square should be in the 2:1 to 3:1 range for an acceptable model, the chi-square ratio of 2,275 can be interpreted as indicating a good fit (Kelloway, 1998). Generally, values of between 2 or 3 as viewed as acceptable (Luthanen and Crocker, 1992)

### 7.8 Conclusion

Statistical analysis was performed on data obtained from completed CSE's as developed by Luthanen and Crocker (1992) and the results of the statistical analysis were presented in table and figure format. Biographical information and item statistics was presented before item analysis per factor on alpha's Cronbach was calculated. Reliability for all four factors was in the 0.7 region which indicates that the instrument's reliability is good. It's important to note that any threat to the reliability of a measurement poses a threat to its construct validity (Brown, 2000).

Additional statistics were performed following a confirmatory factor approach, where the model was tested using Structural Equation Modeling (SEM) goodness of fit tests. Fit indices were examined to determine if the CSE measurement



model fit the data to an acceptable degree. CFI, NNFI and IFI and RMSEA values were all less than 0.9, indicating that the proposed model lacks a reasonable fit (Pallant, 2005). This was confirmed by investigating the chi-square, found to be significant.

The final chapter will provide an overview of the entire study, and the implications and significance of the findings (as compared to previous findings) will be discussed and summarized.

## CHAPTER 8

### CONCLUSION

#### 8.1 Introduction

Self-esteem is one of the most popular in topics in psychology today, with a vast amount of research revolving around this topic. Luhtanen and Crocker shifted the focus from personal self esteem to Collective self esteem when developing the CSE scale in 1992. The purpose of this study was to determine the construct validity of the instrument to determine if it's a valid and reliable measurement tool to utilize in South Africa. Although previous research (Luhtanen and Crocker, 1992) determined the validity and reliability of the instrument, the aim of the study was to perform confirmatory factor analysis to determine whether the use of the CSE subscales are justified on a South African sample.

#### 8.2 Literature and Research

The study kicked off with a discussion on the relevance and importance of psychometrics in the South African context. The importance of utilizing valid and reliable instruments was emphasized. Thereafter the history of the concept of self-esteem and definitions was discussed from a variety of perspectives including the likes of William James (1980), Robert White (1963), Morris Rosenberg (1965), Stanley Coopersmith (1967), Nathaniel Branden (1991) and Seymour Epstein (1985).

The next Chapter revolved around implicit – and explicit self-esteem and the different measurement instruments used to quantify these. A short overview of the very popular Rosenberg Self-esteem scale (1965) and then The Coopersmith Self-esteem Inventory (1967) was given before moving to the instrument under investigation: Luthanen and Crocker's (1992) Collective Self esteem scale, and applications thereof. Mismeasurement and Social desirability was discussed as two potential limitations when measuring self-esteem. Levels of self-esteem

including Branden's (1999) Pillars of self-esteem was investigated and the bases of self-esteem was explained from a contingencies of self worth (Crocker and Wolfe, 2001) perspective. The chapter concluded with criticism of the concept of self-esteem and modern theories.

Cast and Burke (2002) suggested that Social Identity Theory (SIT) can provide a theoretical framework for the integration of the various conceptualizations of self-esteem. Categorization, Identification, Social Comparison and Psychological distinctiveness was discussed as core elements of Social Identity Theory. Thereafter the core assumptions and statements of the theory were described and the chapter concluded with Contributions, Problems and Future Challenges of Social Identity Theory.

In the next chapter the focus shifted from theory and concepts of self-esteem to reliability and validity of self-esteem measures, including different types of validity, and more specifically on construct validity. The aim of this study is to determine the construct validity of the CSE as developed by Luhtanen and Crocker (1992) through a process of confirmatory factor analysis. Convergent and discriminant validity was overviewed as types of construct validity. The chapter concluded with previous research findings on the reliability and results obtained from confirmatory factor analysis performed on the CSE.

In terms of methodology, a survey research design was applied and the chapter described the CSE instrument (Luhtanen and Crocker, 1992) in more detail in terms of the purpose, description and subscales (Membership-, Private collective-, Public collective self esteem, and Importance to Identity). The chapter continued to explore the Implications of the Research Design for Validity and Reliability, a description of the sampling method and advantages and disadvantages of the chosen data collection procedures was discussed. Techniques and procedures used to analyze data included item analysis and an investigation of the reliability coefficient. The researchers used Structural

Equation Modeling to explore the confirmatory factor analysis model as theorized by Luhtanen and Crocker, (1992). Estimation and model fit was investigated by means of by chi-square goodness of fit statistic and the following fit indices: The Bentler-Bonnett (1980) non-normed fit index (NNFI), the Bentler (1990) Comparative Fit Index (CFI), the Bollen Non-normed Fit index (IFI).

### **8.3 Findings and significance**

The CSE was completed by 165 individuals, and results were analyzed by means of statistical analysis on item statistics, reliability of the instrument and confirmatory factor analysis. Before performing any statistical analysis item 2, 4, 5,10,12,13 and 15 had to be reversed scored. The biographical information was tabled and it turned out that the majority of the sample was Afrikaans speaking males.

According to the results of the reliability analysis, the reliability of the instrument is acceptable (Byrne, 2001). Reliability of each subscale was determined using Cronbach's alpha which yielded the following results: Membership self-esteem,  $\alpha$  0.682, Private collective self-esteem,  $\alpha$  0.695, Public collective self-esteem  $\alpha$  0.706 and Importance to Identity  $\alpha$  0.699. Luhtanen and Crocker (1992) reported sub-scale alphas in the range of 0.7 to 0.8 and Cronbach's Alpha coefficients were found to be substantial ranging from 0.83 to 0.88 for all scales. The reliability results moderately agree with previous research conducted with this instrument (Luhtanen and Crocker, 1992) thus confirming that the measure of the instrument is reasonably reliable. These results are important to construct validation, as an instrument cannot be deemed valid if it is not reliable.

The correlation between the four factors was investigated through confirmatory factor analysis. The highest correlation ( $r=.8$ ,  $p<.001$ ) was found between Membership self esteem and Private collective self esteem indicating that factor analysis didn't succeed in providing a clear distinction between these two factors and that they might actually measure the same latent variable. In Luhtanen and

Crocker's (1992) study, the highest correlation was also found between the Membership and Private subscales ( $r=.59$ ,  $p<.001$ ), and the lowest between the Public and Identity subscales ( $r=.23$ ,  $p<.001$ ). These correlate with the current study.

To determine the model fit, goodness of fit indices (where a value of 0.9 is considered a good fit) were calculated in SPSS. CFI, NNFI and IFI values were 0.826, 0.787 and 0.831 respectively, indicated that the model is not a good fit. The RMSEA had a value of 0.089 which also doesn't relate to a good model fit (Hu and Bentler, 1998). The chi-square was also investigated and was found to be significant, indicating a lack of good model fit.

These findings don't correlate with previous research done Luhtanen and Crocker (1992). Luhtanen and Crocker (1992) used the maximum likelihood of estimation in EQS (Bentler, 1989) to test four models: (a) a one factor model, (b) a four factor model where the factors are uncorrelated, (c), a four-factor model where the factors are correlated, and (d) a hierarchical where four first order factors are subsumed by a second order, general collective self-esteem factor and where the first order factor are restricted to load equally on the second order factor. None of their models showed a good fit, especially with regard to chi square statistic and the chi square/degrees of freedom ratio (Luhtanen and Crocker, 1992). However the four factor correlated model and the hierarchical models described the data better and yield acceptable values for the normed fit, nonnormed fit, and comparative fit indexes.

In conclusion, although the reliability of the CSE (based on Cronbach's alpha) is acceptable the model doesn't indicate a good fit when investigating the different fit indices, and therefore the instrument might not be a valid measurement of Collective Self esteem in the South African context. Despite of these preliminary findings the results should be interpreted in context with the limitations of the study to be discussed in the following section.

#### 8.4 Limitations of the study

The following limitations and recommendations must be considered when investigating the findings of the study:

- From a survey research perspective, it should be mentioned that the researcher was not in attendance when the participants completed the questionnaires. Consequently participants would not have been able to ask for clarification of the questions from the researcher and this could have had an impact on the results.
- The length of the survey may also have an influence on the findings. The CSE scale is a relatively short survey, with only 16 items for four underlying constructs. According to Idaszak et al. (1987) four to six items per factor would reflect the true underlying structure more clearly.
- The reliability of the subscales is generally good, with alpha coefficients for the sub-scales ranged between 0.68 and 0.71, which is generally good. According to Byrne (2001), indicators should have a Cronbach alpha of 0.7 for the set to be judged reliable. The low reliability may be explained by a lack of homogeneity of variances among the items; and can be lower when there are fewer items in the factor.
- To investigate validity – researchers should determine correlations between the Collective Self esteem scale (Luhtanen and Crocker, 1992) and Rosenberg self esteem scale (1965) and compare findings to previous research.
- Finally, the sensitivity of the chi-square fit index to sample size should be kept in mind. If the sample size is larger, the likelihood of a Type II error (rejecting something true) occurring is bigger. Given the small sample size ( $n=165$ ), a poor fit can be concluded based on the significance of the chi-square indices (Kelloway, 1998).

### **8.5 Suggestions and recommendations for future research**

Exploratory factor analysis should be performed to determine if all items should be included when utilizing the questionnaire in a South African context. Removing Item 1 (I am a worthy member of the social groups I belong to), Item 2 (I often regret that I belong to some of the social groups I do) and Item 7 (Most people consider my social groups, on the average, to be more ineffective than other social groups) will positively influence the reliability of the subscales and should be considered during exploratory factor analysis. These items should be possible by revised depending of the results of further research.

There are several possible directions that future research of the Collective self esteem scale can take. One path is a multitrait-multimethod approach which would allow for an examination of the construct validity of the present subscales given the potential utility of the construct that this measure taps, and the generally favorable reliability coefficients generated for the total measure as well as the four subscales.

A second possibility given the psychometrically equivocal findings on the CSE scale to date is to consider recent calls for the indigenous development of instruments in South Africa (Stead and Watson, 1999). Specifically, the meaning of collective self esteem in South Africa needs to be determined and, thereafter, the psychometric development of instruments could precede using South African samples. Given both the present findings and the potential usefulness of the collective self esteem scale for South Africa's multicultural population, these suggestions for future psychometric research need to be considered.

### **8.6 Conclusion**

Luhtanen and Crocker (1992) developed the Collective self esteem scale to measure four subscales namely Membership -, Public collective, Private collective self esteem, and importance to identity. The researcher concluded by means of various statistical analyses that the instrument can be deemed reliable

when utilized in a South African context, but confirmatory factor analysis revealed that the model is not an acceptable fit. Suggestions and recommendations for future research have been discussed, to ensure that that the instrument is only utilized in a South African context when reliability and validity has been confirmed.



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## Appendix A: CSE

**INSTRUCTIONS:** We are all members of different social groups or social categories. Some of such social groups or categories pertain to gender, race, religion, nationality, ethnicity, and socioeconomic class. We would like you to consider your memberships in those particular groups or categories, and respond to the following statements on the basis of how you feel about those groups and your memberships in them. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale from 1 to 7:

		Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
1.	I am a worthy member of the social groups I belong to.	1	2	3	4	5	6	7
2.	I often regret that I belong to some of the social groups I do.	1	2	3	4	5	6	7
3.	Overall, my social groups are considered good by others.	1	2	3	4	5	6	7
4.	Overall, my group memberships have very little to do with how I feel about myself.	1	2	3	4	5	6	7
5.	I feel I don't have much to offer to the social groups I belong to.	1	2	3	4	5	6	7
6.	In general, I'm glad to be a member of the social groups I belong to.	1	2	3	4	5	6	7
7.	Most people consider my social groups, on the average, to be more ineffective than other social groups.	1	2	3	4	5	6	7
8.	The social groups I belong to are an important reflection of who I am.	1	2	3	4	5	6	7
9.	I am a cooperative participant in the social groups I belong to.	1	2	3	4	5	6	7
10.	Overall, I often feel that the social groups of which I am a member are not worthwhile.	1	2	3	4	5	6	7
11.	In general, others respect the social groups that I am a member of.	1	2	3	4	5	6	7
12.	The social groups I belong to are unimportant to my sense of what kind of a person I am.	1	2	3	4	5	6	7
13.	I often feel I'm a useless member of my social groups.	1	2	3	4	5	6	7
14.	I feel good about the social groups I belong to.	1	2	3	4	5	6	7
15.	In general, others think that the social groups I am a member of are unworthy.	1	2	3	4	5	6 111	7
16.	In general, belonging to social groups is an important part of my self image.	1	2	3	4	5	6	7



## Appendix B: Information Consent Letter

Title of Study:           Confirmatory factor analysis of the CSE (Collective Self Esteem) Questionnaire

Supervisor:             Mr. M.A Buys  
                                  Department of Human Resources, University of Pretoria

Student:                 Annelle Rossouw  
                                  In partial completion of M.COM Industrial Psychology

To Whom It May Concern:

You are invited to participate in a study that aims to determine the construct validity (determining if a questionnaire measures what it purports to measure) of an instrument.

As a participant in this study, you will be asked to complete a questionnaire about Collective Self Esteem, consisting of four subscales namely: (a) worthiness as a group member, (b) perceptions of the public evaluation of the group, (c) personal evaluation of the group, and (d) perceived importance of the group identity to your self-concept.

The following are some examples of the types of statements you will be asked to rate on a scale ranging from strongly agree to strongly disagree.

- I'm a valid member of the ethnic group I belong to.
- I feel good about the ethnic group I belong to.

In addition, you will be asked to provide some background information about yourself in terms of gender and first language.

Participation in this study is voluntary, and will take approximately ten minutes of your time. Should you wish to, you can request a detailed feedback report about the findings of the study. You may decline to answer any questions presented in the questionnaire and/or decide to withdraw from this study at any time by informing the researcher.

All information you provide is considered completely confidential; indeed, your name will not be included or in any other way associated, with the data collected in the study and you will not be identified individually in any way in any written reports of this research. There are no known or anticipated risks associated to participation in this study and the entire process will be performed in an ethical matter.

If you have any comments or concerns resulting from your participation in this study, please contact Annelle Rossouw on 082 5028 509 or via email: [annelle.rossouw@compensation.co.za](mailto:annelle.rossouw@compensation.co.za).

Thank you for your interest in our research and for your assistance with this project.

### **CONSENT FORM**

I agree to participate in a study being conducted by Annelle Rossouw at the Department of Human Resources, University of Pretoria. I have made this decision based on the information I have read in the Information-Consent Letter and have had the opportunity to receive any additional details I wanted about the study. I understand that I may withdraw this consent at any time by informing the researcher.



I also understand that this project is under the supervision of the University of Pretoria, and that I may contact Annelie Rossouw if I have any concerns or comments resulting from my involvement in the study.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Witness Signature: \_\_\_\_\_