SUBJECTIVE WELL-BEING AMONGST CHILDREN IN THE WESTERN CAPE:
MULTI-GROUP ANALYSIS ACROSS THREE AGE GROUPS.

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Abstract:

Globally the Subjective Well-Being (SWB) of children is recognized as having a significant effect on the child's psychological and social functioning. Furthermore, not only does children's SWB have effects on childhood well-being research, it has also increased the knowledge of how children view their life that has been determined through the measurement of specific domains that relates to children's lives. The overall aim of this study was to ascertain the SWB of children across three age groups in the Western Cape. Within this process, the study further aimed to fit the structural model depicting the nature of the relationship between global, domain specific and overall life satisfaction across three age groups. The Theory of Model Fit: Goodness of Fit and Fit Indexes was used as the theoretical position conceptualising the study. The sample included 3236 children aged 8, 10, and 12 years selected using stratified random sampling from 29 schools in the Western Cape. The study used Structural Equation Modelling and Multi-group Confirmatory Factor Analysis to address the stated aims and objectives. Ethics principles of informed consent, anonymity, the right to withdraw and privacy were adhered to within the study. Findings of this study indicate that the descriptive statistics depicted high levels of SWB for both measures with mean composite scores ranging between 81.20 to 86.15 for the SLSS; and 83.29 to 84.07 for the PWI-SC. Confirmatory factor analysis showed excellent fit for both the SLSS and the PWI-SC across age groups (multi-group model). The application of Multi-group Confirmatory Factor Analysis in the current study found the measures to be comparable across the three age groups (8, 10 & 12) for the SLSS and two age groups for the PWI-SC (10 & 12). A combined model with two latent constructs, representing different levels of abstraction was also tested. An excellent fit was obtained for this combined model. Appropriate fit statistics was obtained for the overall pooled sample. The standardised regression weights of 0.57 for the PWI-SC and 0.47 for the SLSS point to adequate loadings of the latent constructs onto the OLS. Markedly, it was found that a significant overall mean difference was found between the 10 and 12-year olds and not between the 8 and 10-year olds; while for the domain-specific PWI-SC a similar tendency was noted across the 10 and 12-year olds participants (8 year old group was not applicable in this analysis).

Declaration:

I declare that the current study **Subjective well-being amongst children in the Western Cape: Multi-group analysis across three age groups** is my own work. It has not been submitted before any degree or examination in any university, and that all the sources I have used have been indicated and acknowledged as complete references.

HWitten

Heidi Kim Witten

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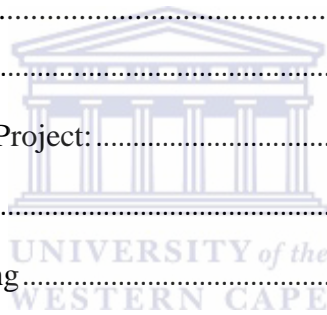
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1.   Background

The children of South Africa have a long history of exposure to political violence, oppression, abuse, and suffering. With the advent of democracy in 1994, the South African government enacted a series of legal commitments to redress childhood adversity and to improve children's well-being and overall quality of life. South Africa's ratification of the United Nations Convention on the Rights of the Child (UNCRC) in 1995 culminated in the advancement of further child specific legislation that entrenches the rights and needs of children in the development strategies of the government – guaranteeing children socio-economic rights and protection from abuse, exploitation, and neglect (Savahl et al., 2015).

Through the 20 years of democracy, South Africa has also made good progress in developing strategies to measure and monitor the state and well-being of children. The Ulwazi Ngabantwana initiative (the former Department of Women, Children, and People with Disabilities), for example, developed a user-friendly database which allows access to a range of data sources on children's well-being. These and other initiatives foregrounded the development and collection of objective indicators. Objective indicators also referred to as quality of life indicators, or more generally as key national indicators, refer to observable measures that have been developed to measure a range of pre-determined objective standards of well-being. However, over the past few decades, researchers have voiced discontent at the use of objective indicators as the exclusive measure of determining child well-being (Casas, Bello, González-Carrasco, & Aligué, 2013). This has resulted in the increasing interest in children's subjective well-being (SWB).

Children's SWB is an expansive concept that includes the cognitive and affective evaluations that children make about their lives, the circumstances affecting their lives, and the social context in which they live (Diener, 2006). The cognitive component refers to children's perceptions, understandings and evaluations of global and domain-specific life satisfaction, while the affective component refers to positive and negative affect (Diener, 2006; Diener, Lucas & Oishi, 2005; Diener, Suh, Lucas, & Smith, 1999; Strózik, Strózik, & Szwarc, 2016). Subjective well-being can also be understood in terms of Quality of Life (QOL) which may be defined as an individual's perception of their life, in the context of the culture and in relation to their goals, standards, and concerns (Camfield & Skevington, 2008). Studies in the SWB of children is premised on the notion that objective indicators only provide a partial

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explanation of children's QOL; and how children think, feel and evaluate different aspects of their lives are of critical importance (Savahl et al., 2015).

Some researchers have noted the importance of the delineation of two divergent approaches to conceptualising children's SWB (see Adams & Savahl, 2016; Fattore, Mason, & Watson, 2012; Manderson, 2005). These distinct approaches differ fundamentally in terms of their epistemological frameworks. The first and more prevailing of these approaches focuses on SWB as proposed by Diener (1984, 2000), and usually encompasses quantitative methods of data collection (Fattore et al., 2012). More so, the focus of this approach has been on the construction and subsequent cross-cultural adaptation of various scales and measures to assess SWB in children and adolescents (see for example Casas et al., 2012; 2013; Cummins & Lau, 2005; Huebner, 1991; Proctor, Linley & Maltby, 2009; Valois, Huebner & Suldo, 2003). Of these measures, the Personal Well-Being Index-School Children (PWI-SC) (Cummins & Lau, 2005), the Student Life Satisfaction Scale (SLSS) (Huebner, 1991), the Multidimensional Student Life Satisfaction Scale (MSLSS) (Huebner, 1994) and the Brief Multidimensional Student Life Satisfaction Scale (BMSLSS) (Seligson, Huebner & Valois, 2003) are the most widely used and have shown good cross cultural adaptation with children aged between 8-18 across a range of contexts (see e.g. Casas, Tiliouine & Figuer, 2014; Jones, 2011; Proctor, Linley & Maltby, 2009, for a review of life satisfaction measures developed for use with children and youth; Savahl, Casas, Adams, 2016). In this regard, the Children's Worlds: International Survey on Children's Well-Being (ISCWeB) project has made significant contributions in the cross-cultural adaptation and validation of instruments to measure children's SWB across diverse contexts (see www.isciweb.org). Using data from the first wave of the study, Casas and Rees (2015) assessed the extent to which four different multiple item measures of SWB can be meaningfully compared across 16 different nations. Their results show that it is possible to compare scores on the SWB instruments of the diverse samples by correlations and regressions, but that means comparisons were not viable. In a follow-up study using a larger sample of data from the second wave of the study, Casas (2016) found similar results; cross-country comparisons by correlations and regressions were viable, but comparisons by mean score were not. In the study, Casas (2016) also advises on the use of several multiple item scales, with items testing different levels of abstraction, when measuring children's SWB.

The second approach is founded on, and promotes the theoretical and methodological stance of the 'new sociology of childhood' (see Adams & Savahl, 2016; Fattore, Mason & Watson,

2012; Savahl et al., 2015). The emphasis in this approach is in locating the child centrally, (Fattore et al., 2012; Fattore, Fegter & Hunner-Kreisel, 2015), with a focus on an in-depth exploration of what children think and feel about various aspects of their life. This is encapsulated in a range of qualitative research initiatives (see Adams & Savahl, 2016; Fattore et al., 2007; 2012; Savahl et al., 2015; September & Savahl, 2009). The Multinational Qualitative Study on Children's Understandings of their Well-Being which encompasses a large scale qualitative exploration between 12 countries is further testament to the importance afforded to conduct qualitative research with children directly (Fattore, Fegter & Hunner-Kreisel, 2015). Notwithstanding this dichotomy, these two approaches advance a shared aim of including children in research as valid actors, possessing agency to reliably convey their subjective perceptions of their well-being. In this regard, Fattore et al. (2012) critically note the following:

> *"In viewing this dichotomy it is important not to confuse 'objectivist' and 'new sociology of childhood' approaches to research as different representations of method. It is important not to read each approach down as correspondingly 'quantitative' and 'qualitative'. The distinction that we present is not about the method employed or technique, but more fundamentally about the value position regarding knowledge acquisition."* (Fattore et al., 2012, p. 426).

Along with the considerable reflection and engagement concerning conceptual definitions of SWB, there has been an increasing investment in empirical studies on SWB (see www.isciweb.org). In understanding the SWB of children it is crucial to study various domains of children's SWB (Strózik, Strózik, & Szwarc, 2016). Researchers have identified domains of SWB that are largely aligned to those identified by Cummins (1995; 1996) in his research with adult populations (see Fattore, 2007; Pollard & Rosenberg, 2003; Savahl & September, 2009). The identified domains can be grouped as follows: economic and material well-being, health, safety, productive activity, place in community, intimacy, and emotional well-being (Pollard & Rosenberg, 2003). These domains of well-being have also been used in participation studies with children with children and adolescents in South Africa, which is evident in the work Savahl et al. (2015) who conducted a study with 56 children aged 13 and 15 years from rural and urban geographical locations and found three broad thematic domains of SWB namely: personal safety, infrastructure and environmental context, and socio-psychological well-being. In addition, September and Savahl (2009) observed that protection and safety, basic needs, community resources, and psychosocial issues all emerged as

domains of well-being. Beyond the investment in developing domains of SWB, another strand of research that has recently emerged is that of age variations in children's SWB.

1.1   Age Variations in Children's Subjective Well-Being

There is increasing evidence that overall satisfaction with life decreases with age during adolescence. The earliest reference that alludes to this is that of Petito and Cummins (2000) who conducted a study using a multi-item SWB scale, Comprehensive Quality of Life Scale-School Children (ComQol-S5) in Australia with a sample of (N=279) adolescents aged 12 to 17. They observed significantly higher scores for younger adolescents and lower scores for older adolescents. Petito and Cummins (2000) speculate that reasons for this decrease may be a demanding environment, independence from parenting control; and the engagement of secondary control strategies when primary controls fail, which in turn impedes goal achievement.

Similarly, Ullman and Tatar (2001) conducted a study with a sample of Israeli native and immigrant adolescents (N=254) aged 12 to 18. The study assessed adolescents' life satisfaction using a 4-point scale version of Huebner's (1991) Students Life Satisfaction Scale (SLSS). Their research examined central issues in the psychological adjustment of adolescents who immigrate, and its effect on their self-concept, self-esteem, and life satisfaction. Ullman and Tatar (2001) found that younger students reported greater satisfaction with their lives than their older peers. They also reported that there was an increase in the scores of younger students and a decrease in scores of older students on life satisfaction.

Other studies conducted in England by Bradford, Rutheford and John (2002) using a 5-point multi-item scale on a sample of 899 young people aged 12 to 16 in England, observed higher scores among participants aged 12 and 13 when compared to those aged 14 and 16. In Hong Kong, a study conducted by Chang, McBride-Chang, Stewart and Au (2003) revealed that SWB across the life-span may be affected by both age-specific and age-general factors within a cultural context. The study used a 6-point multi-item scale that explored life satisfaction among second-graders (n = 115) and eighth-graders aged 7-14 years old (n = 74). They observed that adolescents aged 13-14 years old had lower life satisfaction scores than children aged 7-8 years old. Moreover, the results showed that social self-concept was a

strong predictor of life satisfaction among adolescents (13-14 years), while academic test results predicted life satisfaction only among the children (7-8 years).

Park (2005) conducted a study using the Multi-dimensional Satisfaction with Life Satisfaction Scale (MSLSS) and the 6-point version of the SLSS (Huebner, 1991) with a sample of 736 adolescents from South Korea aged 10 to 17. The study revealed that global and domain-specific life satisfaction with family, school, living environment, self and friends also decreased with age. Park (2005) found that the 'family domain' was an important predictor of global life satisfaction of Korean students of all ages. The importance of the 'self-domain' in relation to global life satisfaction increased with age and emerged as a crucial contributor to global life satisfaction among adolescents. School satisfaction was also found to be significant for Korean students' global life satisfaction across all ages. Ultimately, the study revealed significantly higher SWB scores for younger adolescents and a decrease in life satisfaction with age.

Another study conducted by Goldbeck, Schmitz, Besier, Herschbach and Henrich (2007) used the multi-item 5-point scale on a sample of German adolescents (N=1274) aged 11-16 years. The results suggest that the decrease in general and health-related life satisfaction was found to be more prominent among girls. The study further found that the period in which most dissatisfaction occurred was between the ages 15-16 years (Goldbeck et al., 2007). Similar results were found in research conducted by Casas, Figuer, González and Malo (2007a) that combined two Spanish samples (from 1999 and 2003), both conducted on 12-16 year olds, using the Overall Life Satisfaction scale (OLS) and a 19-item scale measuring satisfaction with different life domains. The authors observed a decrease in life satisfaction with age from the two samples, with the effect more prominent among girls. However, the mean scores for all age groups coincided with the normative data from Western societies (see Cummins, 1998). The authors conclude that health-related life satisfaction decreases in the same way as general life satisfaction.

Uusitalo-Malmivaara (2014) indicated similar trends of decreasing well-being as children become older and explained that this decline is a result of increasing demands placed on children in school, difficulty with peers, stress at school, as well as school dissatisfaction. More recently, Casas, Tiliouine, and Figuer (2014) conducted a comparative analysis using the Personal Well-Being Index-School Children (PWI-SC) developed by Cummins and Lau

(2005) with a sample of adolescents aged 13-20 years in Algeria (N=1156) and Spain (N=2304). The study found a decreasing-with-age tendency in both countries, with a stronger tendency found in the Algerian sample.

Additionally, a study conducted by Goswami (2013) endeavoured to explain the variation in children's SWB by exploring socio-demographic and personality characteristics. The study used a sample of young people (N=2,400) aged 10-15 years in England. A two-stage multiple regression analysis revealed that the socio-demographic characteristics accounted for 15 % of the variation in SWB. A combined model of socio-demographic and personality characteristics explained 33.5% of the variation, of which personality explained an additional 18.5 % of the variation in SWB (Goswami, 2013). The results indicated that comparable to studies conducted by Currie et al. (2012) and Casas (2011), young people's SWB appeared to decrease as they got older and older children reported to be less satisfied with the degree of freedom and autonomy.

While the above studies used cross-sectional designs, seminal research by González-Carrasco, Casas, Malo, Vinas and Dinisman (2016) utilised a longitudinal design among a sample of 940 Spanish adolescents aged 10-15 years. Their research included participants younger than 12 years old which enabled them to identify at which age SWB decreases. These authors found a decrease in the levels of SWB from the years 11–12 onwards. Notably, a decline in the levels of SWB was observed for both boys and girls on four SWB scales (Student Life Satisfaction Scale, Brief Multi-dimensional Student Life Satisfaction Scale, Personal Well-being Index-School Children and the Overall Life Satisfaction Scale [OLS]). However, when compared by gender, the decline was greater among girls. González-Carrasco, Casas, Vinas, Malo, Gras and Bedin (2016) used the same sample assessing the changes that lead SWB to decrease with age, where participants were categorised according to the changes they have experienced in their SWB. Surprisingly, it only appeared as significant in the models for girls, both for the OLS and Happiness with Overall Life Scale (HOL). The results of the study suggest that this age transition may affect the SWB of girls more than boys. This observation reinforces the idea that girls' homeostatic mechanism may be more sensitive to external circumstances (Llosada-Gistau et al. 2015; Tomyn, Cummins & Norrish. 2015).

There were, however, some studies that did not find SWB to decrease with age. For example, a study conducted by Suldo and Huebner (2006) with a sample of adolescents (aged 11 to 19; N=1,201) from South Carolina, using the 6-point version of the SLSS (Huebner, 1991) did not identify a decrease in SWB with age. In line with this finding, Meulners and Lee (2005) conducted a study with a sample of Australian adolescents using the 5-point multi-item Quality of Life Profile-Adolescent Version (QOLPAV) with a sample of (N=363) children and adolescents (10-18 years) and observed that there was no significant decrease with age differences in SWB. Correspondingly, Dew and Huebner (1994) observed that differences in global life satisfaction among a sample of (N=222) students aged 8-12 years, were not associated with age, grade or gender.

Markedly, all the above citations point to studies conducted using different instruments with different scoring methods. It is apparent from these studies that most research conducted includes data on children above the age of 12 years. It is evident that few researchers have collected data on children under the age of 12 years or in developing contexts; with the notable exception of the study conducted in Algeria by Casas, Tiliouine and Figuer (2014). This study hopes to contribute in this regard by assessing children's SWB on three scales namely the SLSS, PWI-SC and the OLS, across three age groups comprising 8, 10 and 12-year olds from different socio-economic status groups. The results above, identify some critical questions and challenges concerning the actual age at which the decreasing-with-age tendency commences and what factors could likely influence this process? In attempting to address these questions, particular challenges are posed due to the fact that data on children's SWB under the age of 12 are very scarce (Casas, 2016).

1.2   Rationale

While there has been a dramatic increase in researching children's SWB, there is a dearth of comparable data and empirical research initiatives on children's subjective perceptions of their lives in general (focusing on their living conditions and life circumstances) (Casas, 2011; Strózik, Strózik, & Szwarc, 2016). Traditionally, there has been significant resistance from researchers and policy makers, to consider the opinions of children as reliable and valid (Ben-Arieh, 2008; Sandin, 2014); with adults often used as proxies to report on children's quality of life (UNICEF, 2013). The most important and often most valid information for studying children's SWB would be to hear from the children themselves; however, research

on children's SWB from their own perspective is limited (Strózik et al., 2016). Majority of the studies conducted on children's SWB have been conducted in developed, industrialized countries, as the data is readily available (Bandura & Conceicao, 2009). However, there is limited information about what children in developing countries report on their SWB (Casas, 2011). The Children's World Project has made significant advances in this regard and through two waves of the study, substantial data has been collected on children's SWB from both developed and developing countries (Casas, 2016; Casas & Rees, 2015; Rees & Main, 2016; Savahl et al., 2015).

Methodologically, the state of art within children's SWB research has advanced significantly in the last decade. Traditionally, well-being has been identified with a single objective dimension, delineated as Overall Life Satisfaction (OLS) (Casas et al., 2013). However, it is now widely accepted that the concept of well-being cannot be captured solely by one dimension. With recent evidence suggesting that the use of multiple-item measures are more stable than single items and increase the reliability and validity of the measure. In a range of cross-cultural studies, Casas et al., (2012; 2013) demonstrate the usefulness of using multiple-item measure for measuring children's SWB. Recently, Casas and Rees (2015) have motivated for further cross-cultural research on instruments measuring children's SWB. Complementing previous validation studies on SWB instruments (Savahl, Casas & Adams, 2016), the current study hopes to make further contributions to the international dialogue on the cross-cultural measurement of children's SWB. Its unique contribution is that it includes children from younger age groups (8, 10, 12), and considers a range of multiple items scales.

1.3   Aims and objectives of the current study

The overarching aim of the study was to ascertain the SWB of a representative sample of children in the Western Cape of South Africa. Within this process, the study further aimed to fit a structural model depicting the context-free, domain-specific, and overall life satisfaction. Finally, the study aimed to assess the variations of children's SWB across three age groups using the context-free and domain-specific scales. Inherent in this process is assessing the tenability of measurement invariance which will indicate the extent to which the scales can be meaningfully compared across the three age groups.

The following objectives have been developed to guide the study:

1. To ascertain children's SWB using the context-free Students' Life Satisfaction Scale
2. To ascertain children's SWB using the domain specific Personal Well-Being Index – School Children
3. To assess the tenability of measurement invariance (Configural, Metric and Scalar) across three age groups (8, 10, 12) using the context-free and domain-specific scales.
4. To test the convergent validity of the two subjective well-being measures by regressing them onto the single item scale Overall Life Satisfaction

2. Theories of Children's Subjective Well-Being

With very few universal theories of SWB in existence, there are several frameworks that address SWB. In this section the following theories will be explicated: Durayappah's (2010) 3P model, Brofenbrenner's (1979, 1986, 1995, 2005) bio-ecological systems theory, Minkkinen's (2013) structural model of child well-being, Brînduşa- Antonia's (2013) ecological theories of child development and the social capital theory, the well-being theory as well as Cummins' (2013) homeostatic.

Durayappah's (2010) 3P model is a theory of general SWB. The 3P Model comprises components of SWB under temporal states of the present, past, and the future. The 3P model indicates how each state is important to a global evaluation of SWB and how each state is distinct yet interconnected to the other states. This model according to Durayappah (2010) may be applied to all theories of SWB. The model also serves to explain the relationship of momentary experiences with a global evaluation and explain inconsistencies in moving from one evaluation to the next. The framework illustrates how the integration of happiness as a construct from each temporal state (past, present and future) results in a meaningful, robust form of SWB.

Many of our thoughts concern that of the present and future and our happiness in terms of our self in these temporal states. The 3P model postulates SWB in terms of our past, present and future states. Within each state, measures of happiness and well-being should be evaluated separately, bearing in mind that these three temporal states and its measurement are interconnected. Bryant, Chadwick and Kluwe (2003) recommended that happiness is concerned with the ability to feel happiness and pleasure but also with the ability to regulate pleasure and happiness and sustain it. This model builds on managing and maximizing

happiness as it changes across time. Durayappah (2010) posits that SWB is evaluated by the maximization of happiness in each temporal state. Meta-biases such as one's personality and persona are accountable for changes in an individual's global assessment of SWB in each temporal state. As mentioned in the former, the framework occupies a cyclical model in which evaluations of the present influence past evaluations that affect future evaluations.

Another theory is posited by Bronfenbrenner (1979, 1986, 1995, & 2005) which emphasises the role of biology and the environment can be analysed in a child's development. Bronfenbrenner proposes the ecological systems theory which sees an individual as possessing their own inherent biology and through this they interact with the environment in which they find themselves. The ecological systems theory proposes that there are four different systems which constitute different levels of interactions between the child and the environment. Bronfenbrenner (1979) identifies four levels of interaction which can be applied to the individual's behaviour. The microsystem is defined as any context in which a person finds him or herself and has immediate experience. For a child, this would constitute interaction with the family, friends, and peers and includes interpersonal experiences. The mesosystem is defined as a set of linkages between one's immediate experiences. Bronfenbrenner (1979) postulates that a child's development will be improved if the different settings in the child's life are linked, such as values and morals taught as school coincides with home teaching.

The exosystem is defined as interconnections between the microsystem and the mesosystem and the systems in which a child has no direct contact with but can affect their experience such as medical resources. The macrosystem is considered to be the wider system of ideology and organisation of social institutions. Bronfenbrenner (2005) proposed another system known as the chronosystem and this indicates a time system in which all the above systems develop over a time series. Bronfenbrenner (1979, 2005) recognises that the wider system influences the high order systems on human behaviour and hence child behaviour.

Minkkinen (2013) proposes the structural model of child well-being. This model is grounded on the child's role as a social actor and the interaction with the environment that emerges. The structural model of child well-being recognises childhood as an active state with continuous development that alternates the child's interaction with the external environment. The physical, mental, social and material encompasses well-being and the various levels of

interactions with the social-cultural environment and how this affects well-being (Minkkinen, 2013). The structural model of child well-being aims to serve as an instrument for researching child well-being to the areas that are in need of enquiry. The structural model of child well-being also presents to be a basis for quantitative research of the importance of research into the connections between the different elements in the model through structural equation modelling (Minkkinen, 2013).

This model views genetics and history of physical health as predetermining effects on physical well-being. Similar to that of Bronfenbrenner, this model depicts how physical well-being interacts with the other dimensions of well-being in a bi-directional relationship. This means that material well-being could affect a child's access to medical resources, which in turn affects the physical well-being of the child (Minkkinen, 2013). Factors such as healthy lifestyle, avoiding risky sexual behaviour, family and school could all impact on a child's physical well-being (Minkkinen, 2013).

Another theory of child well-being is that of ecological theories of child development and the social capital theory. Brîndușa-Antonia (2013) postulates the theoretical framework of ecological theories of child development within SWB. This theory takes into account the ecological system as a whole within the child that is developing and directs our understanding of how the multiplicity of factors the child interacts with actually impacts the child's well-being. Brîndușa-Antonia (2013) posits that the social capital theory may be used to explore children's well-being as way to expedite the understanding of the interactions and relationships between the child and their family and between the child and their community. The child's family and the community have a major influence on the development of the child.

Brîndușa-Antonia (2013) posits that the new 'sociology of childhood' affords a framework within which new elucidations could be found to the issues confronting children. This could be effected by shifting the parental views of the child as a passive recipient to solutions and not consulting children in the decision-making process. This, in turn, led to implementing decisions about children, however, not involving children in this process and not in accordance with children's needs. Brîndușa-Antonia (2013) propose that the 'new sociology of childhood' starts by accepting the role of children as socially active participants in the

society in which they live and interact, the recognition of identities, the sense of belonging, and ultimately allowing children's own potentialities to develop and be accounted for. Critical to note are multiple authors indicating a gap between theory and the application of such theories, mostly due to the fact that the notion those adults have about childhood differs from the view advocated by legislative frameworks. The desire-satisfaction theory of well-being postulates the good life for a person consisting of getting the most of what he or she ultimately wants over the course of their lifetime (Heathwood 2005).

The final theory to be considered was put forward by Cummins (2013) namely the Homeostasis theory of SWB. This theory considers SWB to be actively controlled and maintained to ensure a positive sense of well-being (Cummins, 2013). Homeostasis theory affirms that each individual has a set-point for their SWB which is genetically determined for each individual (Cummins, 2013). In the instance that there are no challenges present in an individual's experience, their SWB will average around the 'set-point' (Cummins, 2013). Based on extrapolation from empirical findings, Cummins (2013) proposes that the 'set-point' of individuals exist in the range of 60-90 points, with a mean of 75. Cummins (2013) proposes that as the strength of the challenges increases, so will the homeostatic defence increase in order to stabilise levels of SWB.

An important aspect of the theory is the concept of a 'threshold' which refers to SWB moving toward the margins of the homeostatic system, and in so doing opposes change (Cummins et al., 2003). In the instance of the threshold being surpassed, the system tries to return the SWB levels back to the normal range (Cummins, Eckersley, Lo, Okerstrom, Hunter & Davern, 2003). Within the homeostatic process, three defence levels exist to buffer the challenges present in an individual's experiences. Firstly, behaviour, in which individuals learn to surpass challenges set forth in their lives. Two other buffers remain namely relationship intimacy and money which aids in adapting to negative challenges (Cummins, 2014). When homeostasis fails to control SWB, individuals' responses to SWB items may be subjugated by affect which is produced by the challenging experience (Cummins, 2013). In this instance, since homeostasis no longer operates as an effective buffering agent, SWB will be vastly sensitive to the power of challenges (Cummins, 2013).

Another key element in this theory is Homeostatically Protected Mood (HPMood), which refers to a deep and stable positive mood (Cummins 2010). The quintessence of HPMood is

an amalgamation of pleasant and 'arousal values' (Cummins, 2014). In explaining HPMood, Cummins (2014) interprets its measurement by asking how people feel in relation to three affective states namely; 'contented', 'happy', and 'alert'. Cummins (2014) propose that an individual has an inherently generated level of HPMood which provides with a certain level of positivity.

Research encompassing Homeostatic Theory with children provides evidence for the affectively-driven model (Davern et al., 2007; Blore, Stokes, Mellor, Firth, & Cummins, 2011) of SWB which accounts for 80 % of the variance, with the personality-driven model showing a poor fit. This contests the large body of literature which maintains that SWB is determined by personality. Findings have instead shown that the greatest proportion of shared variance between personality and SWB was embedded in HPMood- resulting in the contention that HPMood is the central component of SWB in adolescents (Cummins, 2014). Cummins (2014) concludes that SWB manifests as reliable, sensitive and valid for children, evaluated by the Personal Well-Being Index- School Children, and falls within the normal range, similar to that of adults. He suggests that the appropriate age for children to provide self-report data on their life satisfaction would be 12-years old as they possess the cognitive maturity to do so. When considering data from children in this age cohort in relation to SWB homeostasis, this may reveal certain challenges and supports children may be experiencing (Cummins, 2014).

3. Theoretical Framework of the Current Study: Theory of Model Fit, Goodness of Fit and Fit Indexes

Given that the aim of the current study is to fit a structural model of SWB depicting global and domain- specific life satisfaction, the study is located in the Theory of Model Fit (Goodness of Fit). More specifically, Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) are used to address the stated aims and objectives. Structural Equation Modelling represents a set of data analysis techniques wherein a "series of hypotheses about how the variables in the analysis are generated and related" (Hu & Bentler, 1999, p. 2). The essence of SEM is that proposed models (indicating the relationships between variables) are theory driven. Therefore, designation of specified models needs to be based on theoretical relationships between observed and unobserved variables. The key question in SEM is determining the extent to which hypothesised models fit the

observed data. Assessment of model fit and the estimation of parameters are the key goals of SEM. Within SEM the two most popular techniques to assess model fit are Model Test Statistics and Approximate Fit Indexes (Hu & Bentler, 1999; Kline, 2010). A Model Test Statistic, of which the Chi-Square goodness-of-fit statistic is the most widely used, is a test of the degree to which the covariance matrix in the specified model significantly differs from the sample covariance matrix. If the difference is not significant, then it may be considered as being due to sampling error. It is for this reason that it is often referred to as a badness-of-fit test, as lower values indicate a higher degree of correspondence between the specified models and the data (Kline, 2010).

Approximate Fit Indexes are conceptualised as continuous measures of model-data correspondence and is not concerned with rejecting or accepting the null hypothesis (Kline, 2011). The two most common types of approximate fit indexes are absolute and incremental fit indexes. Absolute fit indexes determine how well a hypothesised model fits the sample data in comparison to no baseline model, while incremental fit indexes attempt to fit a hypothesised model to a baseline model wherein the null hypothesis is that the variables in the model are uncorrelated (Hooper, 2008; Hu & Bentler, 1999). Examples of absolute fit indexes include the standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). Examples of incremental fit indexes include the comparative fit index (CFI), the Tucker-Lewis Index (TLI) and the Normed Fit Index (NFI). It is widely recommended that more than one fit index be used to overcome the limitations of using a single index (Jaccard & Wan, 1995). If a good-fitting model exists the researcher is able to establish if causal paths are significant. Good-fitting models also allow the researcher to examine the discrepancies between variables. Following recommendations by Jackson, Gillaspy and Purc-Stephenson (2009) and Kline (2010) the CFI (comparative fit index), RMSEA and SRMR were used as fit indexes in the current study. These recommendations have been used in a number of studies on children's well-being by Casas (see e.g. Casas et al., 2012; 2013) using cut-scores of >.950 accepted for CFI and scores <.05 regarded as a good fit for RMSEA and SRMR.

<center>**4.   Method**</center>

4.1   Design

The study forms part of and uses secondary data from the Children's Worlds: International Survey of Children's Well-Being (ISCWeB) project- Wave Two. The ISCWeB project is an inter-country collaborative project which aimed to collect substantive data on children's SWB. It followed a cross-sectional survey design with a randomly selected sample of 56 000 children from 15 countries representing different world regions.

4.1.1. History of the ISCWeB Project:

The project began in 2009 when a group of researchers from the International Society for Child Indicators, held a meeting hosted by UNICEF Geneva to discuss the need for study that captured information on children's subjective perceptions of well-being. The group agreed that such a study would fill an important gap in knowledge internationally about children's lives. One of the outcomes of the meeting was an early version of a survey questionnaire designed to determine children's subjective perceptions of well-being across a range of life domains. This first draft questionnaire was tested and piloted in 2010 in the following countries: Brazil, England, Germany, Honduras, Israel, Palestine, and Spain. In December 2010, the research group met again to review the pilot, and this led to a second draft version of the questionnaire. This version was then piloted in the first half of 2011.

In October 2011, members of the research group reviewed the outcomes of the second pilot and developed a third set of the survey questionnaires (separate versions were developed for children aged 8, 10 and 12). At this time a group of researchers from the University of the Western Cape (South Africa) was invited to participate in the survey. The South African research team embarked on a process of adapting and translating the survey instruments and in 2012 participated in Phase One of the study which essentially consisted of a deep pilot. A total sample in excess of 34 000 children participated in the study. The South African pilot study included 1004 children. Wave Two consisted of a large-scale survey with a representative sample of children in the three age groups across 15 countries. The South African study included children from all three age groups (see www.isciweb.org) collected within the Western Cape Province. This study uses the South African data from Wave Two.

4.2   Research Context

The South African component of the Children's Worlds study was conducted in the Western Cape Province which is one of the nine provincial regions in South Africa. With area size of 129 370 km² it is situated on the south-western tip of the African continent and is comprised of urban, semi-urban and rural areas. The Province is divided into one metropolitan area (City of Cape Town) and 5 district municipalities (West Coast, Central Karoo, Overberg, Eden, and the Cape Winelands). In terms of educational districts, the province is further divided into eight Education Management District Councils (EMDC) - four urban districts located in the City Metropole: Metro North, Metro South, Metro East and Metro Central; and four rural districts: West Coast, Cape Winelands, Eden and Central Karoo, and Overberg. Participants were selected from both low and middle-income communities within the eight Western Cape Education Department (WCED) School Districts.

4.3   Participants and Sampling

The population for Wave Two of the South African ISCWeB study consisted of children in three age groups 8, 10 and 12 attending primary schools in the Western Cape Province. The sample was selected by means of a two-stage stratified random sampling protocol ensuring that children from various cultural, income and geographical groups (urban/rural) were selected. In the first stage, schools were stratified according to their location within one of the eight Education Management District Councils (EMDC). Thereafter, schools were stratified by socio-economic status (middle or low) and randomly selected from these strata. This process took into consideration the proportion of children per EMDC.

The final sample was weighted by geographical location (rural/urban) and socio-economic status (low/middle). The sampling protocol used a 95% confidence level and allowed for a 3% margin of error. Private schools and schools without road access were excluded from the sampling frame. The final sampling frame consisted of 643 schools with a total of 29 included in the study. Once schools had been randomly selected, all children aged 8, 10, and 12 years old within the school were selected to participate in the study. The randomisation was therefore at the level of the school and not the individual participant. The motivation for this approach was the expected attrition rate during the consent process. Aligned to the international project and following the above, a total of 1032 children in the 8-year old group, 1109 children in the 10-year old group and 1143 children in the 12-year old group from 29 randomly selected schools were obtained (N = 3284).

4.4   Instrumentation

The original survey instruments developed by the core research group were in English and Spanish. For the purposes of the South African study, the English version of the questionnaire was adapted to the South African context. This process involved the cognitive testing, translation (into Afrikaans and isiXhosa) and piloting of the questionnaires. The cognitive testing process included discussion groups with 10 children each. The participants of the discussion groups were conveniently selected from primary schools within the sampling frame. The responses of the participants of the focus groups assisted in the phrasing, refining and modification of items on the questionnaire.

Thereafter, the revised questionnaire was translated into Afrikaans and isiXhosa using the backward translation method by two independent translators. Following the translation, the questionnaires (English, Afrikaans and isiXhosa) were piloted with a sample of 100 children, randomly selected from low and middle-income schools located in the sampling frame. This process focused on gathering pertinent information relating to how the participants responded to the content, the ordering or sequencing of the items, and the length of the questionnaires. Information gathered during the pilot was used to revise and finalise the questionnaires. The final instrument consisted of a 16-page questionnaire on children's subjective perceptions of their well-being in terms of life satisfaction, personal well-being, hope, as well as report on their daily activities and level of participation in society. A number of internationally validated scales were included in the questionnaire. These include the Student Life Satisfaction Scale (SLSS) (Huebner, 1991), the Personal Well-Being Index-School Children (PWI-SC) (Cummins & Lau, 2005), and the single-item scale on Overall Life Satisfaction (OLS) (Cummins & Lau, 2005).

4.4.1   Students' Life Satisfaction Scale

The Students' Life Satisfaction Scale was used to assess children's (age 8-18 years) global life satisfaction (Huebner, 1991). The scale items are context-free and entail respondents to evaluate their satisfaction on a 5-point Likert scale ranging from "very much disagree" to "very much agree". The initial version of the scale comprised 10 items, and was later reduced to 7-items owing to further item analysis as well as data and reliability estimates (Huebner, Suldo & Valois, 2003). In the ISCWeB, a five -item version was used ('My life is going well', 'My life is just right', 'I have a good life', 'I have what I want in life', 'The things in my life are excellent'). The scale has been shown to display acceptable internal consistency,

with alpha coefficients of 0.82 (Huebner, 1991; Huebner et al. 2004), and 0.86 (Dew & Huebner, 1994). The SLSS has also evinced convergent validity by correlating well with other life satisfaction measures (Dew &Huebner 1994; Huebner 1991) and overall life satisfaction (Casas et al., 2013). The scale has also been shown to display good criterion (Huebner et al, 2003), discriminant (Huebner & Alderman 1993), and predictive validity (Suldo & Huebner, 2004). To date, empirical guidelines for "cut-points" that might classify children into optimal, adequate or low levels of life satisfaction have not been established. Furthermore, normative scores from South African populations have not been established. To assist with comparison between scales, the SLSS will be transformed into a 100 point scale.

4.4.2 Personal Well-Being Index- School Children and Adolescents

Based on the original adult version, the Personal Well-Being Index-School Children was designed to assess children's SWB. The scale evaluates a number of life satisfaction domains, namely standard of living, health, achieving in life, relationships, safety, community connectedness and future security. The scale consists of 7 items, representing the aforementioned domains, and is intended to display a "first level deconstruction of satisfaction with 'life as a whole' " (Tomyn & Cummins, 2011a). The 7-item scale was modified to a 9-item scale (PWI-SC 9), with items: 'All the things you have', 'Your health', 'The things you want to be good at', 'Your relationships with people in general', 'How safe you feel', 'Doing things away from your home', 'What may happen to you later in your life', 'How you use your time' and 'Your life as a student'. Response options for the PWI-SC use an end-labelled 0-10 point scale, with 10, indicating complete satisfaction and 0, complete dissatisfaction. The PWI-SC generates a composite variable which is determined by calculating the mean for the items. The PWI-SC has shown an acceptable alpha coefficient of 0.82 (Tomyn & Cummins, 2011b). To assist with comparison between scales, the PWI-SC will be transformed into a 100 point scale.

4.4.3 Single Item on Overall Life Satisfaction

A single item scale assessing Overall Life Satisfaction (OLS) was included for the 10 and 12-year old samples on an end labelled 0-10 scale using the following wording "how satisfied are you with your life as a whole?" It is argued that the OLS represents the least deconstructed measure of SWB and as such is often used as a means to ascertain convergent validity of SWB scales (Casas & Rees, 2015). In the current study the OLS was used in this manner to determine convergent validity.

4.5   Procedure and ethics

Once the schools were selected, the research team met with the principals and life skills teachers. An information session was arranged with the participating children in the school where the aim, the nature of their involvement and ethics of the study was discussed. They were advised on the ethics principles of informed consent, confidentiality, the right to withdraw and privacy. Children who agreed to participate were requested to provide signed consent as well as obtain signed consent from their parents. Only those who returned the consent forms were allowed to participate in this study. The questionnaires were administered following a researcher-administered protocol. This means that the items on the questionnaire were read to the participants by members of the research team while they are answering the questionnaire. This approach assisted participants who experienced difficulty in answering some items on the questionnaire and is generally used with young children and vulnerable groups. The average time of completion of the questionnaires was approximately 30 minutes. The project obtained ethics clearance from the University of the Western Cape Research Ethics Committee (Registration no: 13/4/26).

In order to conduct the analysis of the data, the databases had to be prepared and the procedure was carried out in various steps. The first step in preparing the databases allowed for the cleaning up of the dataset, this involved having to verify that all items of each scale were present in the datasets. The next step called for the all three datasets (8, 10 & 12) to be merged into one final dataset where rescaling of the three age groups took place. For the 8-year olds, each item was scored on a five-point scale ranging from 0-4. The 10 and 12-year olds were scored on an 11-point scale 0-10; this meant that the 10 and 12-year old groups had to be rescaled to a five-point scale to coincide with the 8-year old group in order to complete the analysis effectively. The following step involved having to separate the PWI-SC (Personal Well-Being Index- School Children) scale to only include the 10 and 12-year olds as some of the items within this scale was not suited to the 8-year olds. Once the datasets were cleaned, the analysis was conducted.

4.6   Data analysis

The Statistical Package for the Social Sciences (version 23) software was used to analyse the data. To test the fit structure of the measures across the age groups, confirmatory factor analysis (CFA) using Maximum Likelihood Estimation in AMOS version 23 was used.

Following recommendations by Casas et al. (2012), all cases on the relevant measures with more than two missing values was deleted, while those with two or less missing values were substituted by regression. As previously stated, recommendations by Jackson et al. (2009) and Kline (2011) the CFI, RMSEA and SRMR were used as fit indexes. Threshold values for acceptance of fit indicate that results higher than .950 were accepted for CFI and results below .05 as a good fit for RMSEA and SRMR. Improvement of model fit was achieved by excluding items with excessively low factor loadings (less than 0.2) and the addition of error covariance constraints (Savahl, Casas & Adams, 2016).

To compare the results between the age groups factor invariance, which refers to the extent that items in the measure have the same meaning between groups, was considered (Meredith, 1993). Factor invariance is generally conceptualised on a hierarchical structure assessed through the application of incrementally restrictive constraints. In the current study factor invariance of multi-group models was tested in three steps. In the first step, configural factor invariance, which assesses an unconstrained multi-group model wherein the parameters are free, was tested. Thereafter, metric factor invariance, which is a requisite for comparing covariance, correlations or regression coefficients, was tested by constraining the factor loadings of the baseline model. Finally, scalar factor invariance, which is a requisite for comparing means between groups, was tested by constraining the factor loadings and intercepts. When testing models of SWB, it is recommended by Casas (2015; 2016) to combine different items of different levels of abstraction. This implies testing models that have a combination of context-free and domain-specific items.

5.   Results

5.1   Descriptive Statistics

For the SLSS (ages 8. 10, 12), skewness of the item ranged from -2.191 to -1.252; with kurtosis from 0.299 to 4.075. For the PWI-SC (ages 10 and 12), skewness of the items ranged from -2.430 to -1.035; with kurtosis from -0.344 to 6.225. These departures from normality were attended to using the bootstrap method (500 samples) as specified in AMOS 23. A means analysis showed significant overall mean scores across age groups for both the SLSS and PWI-SC scales. The composite mean scores for the scales (SLSS, PWI-SC, OLS) are presented in Table 1 below. While the item means scores for the SLSS and PWI-SC are presented in Table 2 and Table 3 respectively, across the three age cohorts.

Table 1 Mean composite scores across age groups for the SLSS, PWI-SC and OLS on a 100-point scale

	8 years old			10years old			12years old			Composite		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
SLSS	1032	86.15	17.77	1061	84.94	21.57	1143	81.20	23.34	3236	84.00	21.21
PWI-SC				1061	84.07	14.03	1143	83.29	14.45	2204	83.67	14.25
OLS										2204	86.30	24.99

Table 2 SLSS item mean score by age (8, 10 & 12)

	8 years old			10years old			12years old			Total		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
My life is going well	1032	3.59	0.93	1061	3.59	0.93	1143	3.40	1.08	3236	3.52	0.99
My life is just right	1032	3.49	1.07	1061	3.48	1.05	1143	3.35	1.10	3236	3.44	1.08
I have a good life	1032	3.49	1.04	1061	3.48	1.10	1143	3.35	1.14	3236	3.44	1.10
I have what I want in life	1032	3.24	1.21	1061	3.07	1.36	1143	3.02	1.32	3236	3.11	1.30
The things in my life are excellent	1032	3.42	1.08	1061	3.38	1.16	1143	3.11	1.27	3236	3.30	1.19

*For the 8, 10 and 12-year olds each item was scored on a five-point scale ranging from 0-4.

Table 2 displays the item and composite mean scores of the SLSS for the three age groups. The analysis revealed that the highest item mean score for the SLSS was for item 1 across all age groups ("My life is going well": 8-year olds, $\bar{x} = 3.59$, sd = 0.298; 10-year olds, $\bar{x} = 3.59$, sd = 0.93; 12-year olds, $\bar{x} = 3.40$, sd =1.08). The lowest item mean score for the SLSS was for item 4 for across all age groups ("I have what I want in life": 8-year olds, $\bar{x} = 3.24$, sd = 1.21; 10-year olds, $\bar{x} = 3.07$, sd = 1.36; 12-year olds, $\bar{x} = 3.02$, sd =1.32).

Table 3 PWI-SC item mean score by age

| Satisfaction with:	10years old			12years old			Total		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
All the things you have	1061	8.71	2.32	1143	8.80	2.06	2204	8.76	2.19
Your health	1061	8.80	2.36	1143	8.84	2.11	2204	8.82	2.23
The things you want to be good at	1061	9.07	1.97	1143	8.81	2.07	2204	8.93	2.07
Your relationships with people in general	1061	8.05	2.90	1143	8.18	2.64	2204	8.12	2.76
How safe you feel	1061	8.64	2.63	1143	8.36	2.50	2204	8.49	2.56
Doing things away from your home	1061	7.12	3.64	1143	7.20	3.38	2204	7.16	3.51
What may happen to you later in your life	1061	7.85	3.14	1143	7.90	2.96	2204	7.87	3.05
How you use your time	1061	8.65	2.38	1143	8.10	2.52	2204	8.37	2.46
Your life as a student	1061	8.78	2.34	1143	8.78	2.14	2204	8.78	2.23

*The 10 and 12-year olds were scored on a 10-point scale with scores closer to 10 showing high agreement with the item.

Table 3 displays the item mean scores of the PWI-SC for the 10 and 12-year olds. The results indicate that the highest item means score for the 10-year olds was for item 3 ("The things you want to be good at": 10-year olds, $\bar{x} = 9.07$, sd = 1.97); and the highest item mean score for the 12-year olds was for item 2 ("Your health": $\bar{x} = 8.84$, sd = 2.11). The lowest item mean score for the 10 and 12-year olds was for item 6 ("Doing things away from your home": 10-year olds, $\bar{x} = 7.12$, sd = 3.64; 12-year olds, $\bar{x} = 7.2$, sd = 3.38).

## 5.2   Confirmatory Factor Analysis

Confirmatory Factor analysis, in Amos version 23(Maximum Likelihood Estimation), was used to test the structural validity of the SLSS and PWI-SC. As previously mentioned, this was conducted through the testing of various models using the goodness of fit statistic and the fit indices of CFI, RMSEA and SRMR. The initial model (Model 1 in Table 4; Figure 1)

for the SLSS showed adequate fit which improved substantially with the addition of one error covariance (item 1 to item 2) (Model 1 in Table 4; Figure 2). For the PWI-SC the initial model showed adequate fit (Model 2 in Table 4; Figure 3). However, item 6 (*Doing things away from home*) presented with a very low standardised regression weight 0.27 as well as showing high correlation with item 7. This suggests that the item was tapping into a similar construct as item 7. Removal of item 6 along with the addition of 2 error co-variances resulted in a substantially improved model (Model 2 in Table 4; Figure 4). Standardised factor loadings for the pooled data of the SLSS ranged from 0.593 (for item 4, *I have what I want in life*) to 0.709 (for item 3, *I have a good life*) (see table 5). For the PWI-SC standardised factor loadings ranged from 0.390 (for item 4 *Happy relationships general*) to 0.581 (for item 8 *Satisfied time use*).
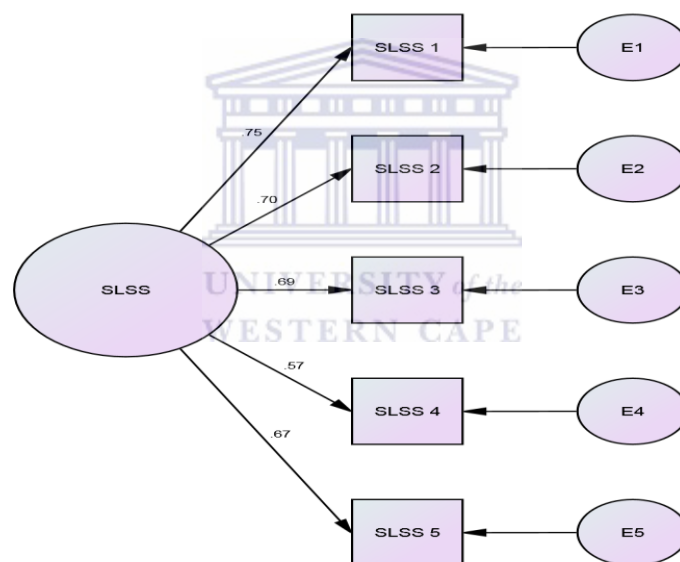
Figure 1: SLSS initial model using the pooled data
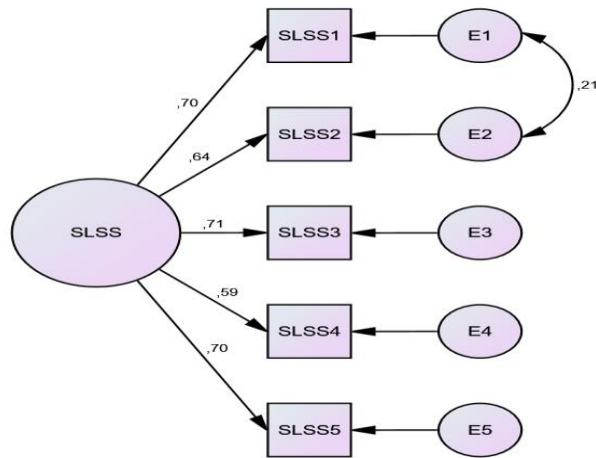
Figure 2: SLSS (Modified model with 1 error covariance) using the pooled data
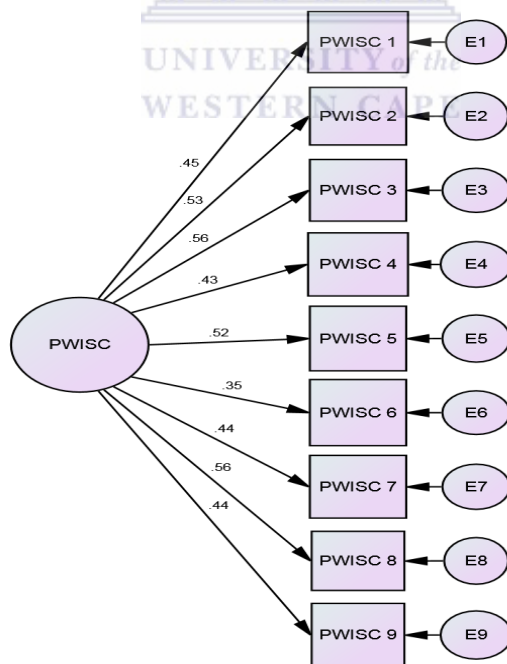
Figure 3: PWI-SC initial model using the pooled data

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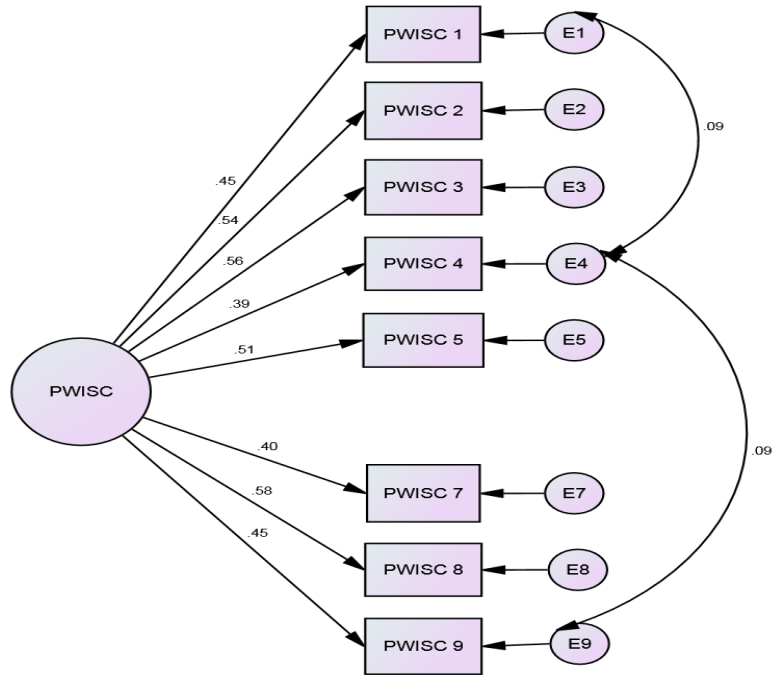
Figure 4: PWI-SC (Modified model with 2 error co-variances, excluding item 6) using the pooled data.
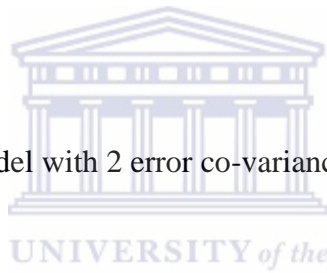
Following recommendations from Casas, a combined model of the context-free and domain-specific scales were also tested, using pooled data of the 10 and 12 year olds with correlated latent variables. This model presented with an adequate fit (Model 14 in Table 4 and Figure 5).

Table 4 Fit indexes for the overall pooled data (Model 1-13) and multi-group data (Model 14-18)

| Model	ECV	x^2	Df	p-value	CFI	RMSEA	SRMR
1 SLSS Initial Model		86.16	5	0.00	0.983	0.071 (0.058-0.084)	0.236
2 PWI SC Initial Model		302.24	27	0.00	0.894	0.068 (0.061-0.075)	0.0449
3 SLSS Modified Model	1	14.70	4	0.01	0.998	0.029 (0.014-0.045)	0.0102
4 SLSS Unconstrained Model	1	48.51	12	0.00	0.993	0.031 (0.022-0.040)	0.0157
5 SLSS constrained Factor Loadings	1	74.00	20	0.00	0.989	0.029 (0.022-0.036)	0.0296
6 SLSS Constrained Factor Loadings and Intercepts	1	101.96	28	0.00	0.985	0.029 (0.023-0.035)	0.0301
7 PWI-SC Modified Model	1	136.83	26	0.00	0.957	0.044 (0.037-0.051)	0.0293
8 PWI-SC Modified Model	4	98.63	23	0.00	0.971	0.039 (0.031-0.047)	0.0247
9 PWI-SC Modified Model	6	64.78	21	0.00	0.983	0.031 (0.022-0.039)	0.198
10 PWI-SC Modified Model (excluding item 6)	2	47.61	18	0.00	0.986	0.027 (0.018-0.037)	0.0182
11 PWI-SC Unconstrained Model	2	96.19	36	0.00	0.974	0.028 (0.021-0.034)	0.0255
12 PWI-SC Constrained Factor Loadings	2	117.41	43	0.00	0.967	0.028 (0.022-0.034)	0.0328
13 PWI-SC Constrained Loadings and Intercepts	2	161.15	50	0.00	0.951	0.032 (0.026-0.037)	0.0337
14 PWI-SC_SLSS Combined Model excl. item 6 & 7	3	183.00	50	0.00	0.982	0.035 (0.029-0.040)	0.0240
15 PWI-SC_SLSS Combined Unconstrained Model	3	286.90	100	0.00	0.975	0.029 (0.025-0.033)	0.0308
16 PWI-SC_SLSS Combined Model and Constrained Factor Loadings	3	324.42	110	0.00	0.971	0.030 (0.026-0.034)	0.0396
17 PWI-SC_SLSS Combined Model, Constrained Factor Loadings & Intercepts	3	381.41	120	0.00	0.964	0.031 (0.028-0.035)	0.0402
18 PWI-SC_SLSS Combined Model with second order factor	3	183.00	50	0.00	0.982	0.035 (0.029-0.040)	0.0240

5.3　Multi-group Confirmatory Factor Analysis

When testing factor invariance, the first step is to fit an unconstrained multi-group model (configural invariance). If this baseline model shows adequate fit, then metric invariance is tested by constraining the factor loadings (Casas et al., 2015). Metric factor variance is tenable if the constrained model does not show a significantly worse fit (CFI and SRMR worsen by more than 0.010, and RMSEA increases by 0.015) than the unconstrained model (Chen, 2005; Cheung & Rensvold 2002). Thereafter, *scalar* factor invariance is tested by constraining the factor loadings and intercepts and is tenable if the fit statistics of the model is not significantly worse (decreases by more than 0.010 on CFI and increases by more than 0.010 on the SRMR and by 0.015 on the RMSEA) than the succeeding model (Chen, 2005; Cheung & Rensvold 2002).

Findings from the present study show adequate fit statistics for the unconstrained multi-group model for the SLSS (Model 4 in Table 4) and for the PWI-SC (Model 11 in Table 4). Thereafter, models with constrained factor loadings were tested for the SLSS (Model 5 in Table 4) and for the PWI-SC (Model 12 in Table 4). The results show fit statistics that did not worsen by more than 0.010 for the CFI and SRMR and by 0.015 for the RMSEA. This means that metric factor invariance is tenable and that groups can be compared by regressions and correlations. In the final model for the SLSS (Model 6 in Table 4) and the PWI-SC (Model 13 in Table 4) scalar factor invariance was tested by constraining the factor loadings and intercepts. As the fit indexes did not worsen, scalar invariance was tenable. This means that the age groups are comparable on the SLSS and PWI-SC by regressions, correlations and means. For the SLSS scalar invariance was tested across the three age groups and found to be tenable (Model 6 in Table four). Table 6 shows the standardised regression weights for the measurement intercepts of the SLSS across the three age groups. An important point to note is the decreasing-with-age tendency observed in this model. In particular there is a significant decline in SWB (context-free) between the 10 and 12 year old; however no significant differences were observed between the 8 and 10 year old.

As previously mentioned combined model with correlated latent variables was also tested for the 10 and 12-year old groups. For this model, metric and scalar invariance was similarly found to be tenable; this means that the two age groups on the combined model are comparable across correlations, regressions and means (Model 15 to 17; Figure 5). Standardised regression weights for the multi-group model show adequate contributions to

the respective latent variables for both age groups (see Table 7). However, given the high correlation between the two latent variables (0.74), it is reasonable to speculate that they possibly contribute to a second-order factor or a SWB supra-construct (Casas et al., 2012; see also Diener et al., 1999). It was, however, not possible to test this assumption as a construction of a second-order factor model requires at least four first-order latent variables to be present in the overall model (Chen, Sousa & West, 2005).

Finally, convergent validity was tested by including the observed variable Overall Life Satisfaction (OLS) in the overall model. Standardised regression weights of 0.57 for PWI-SC and 0.47 for the SLSS suggest adequate regression of these latent variables onto OLS (Figure 6).
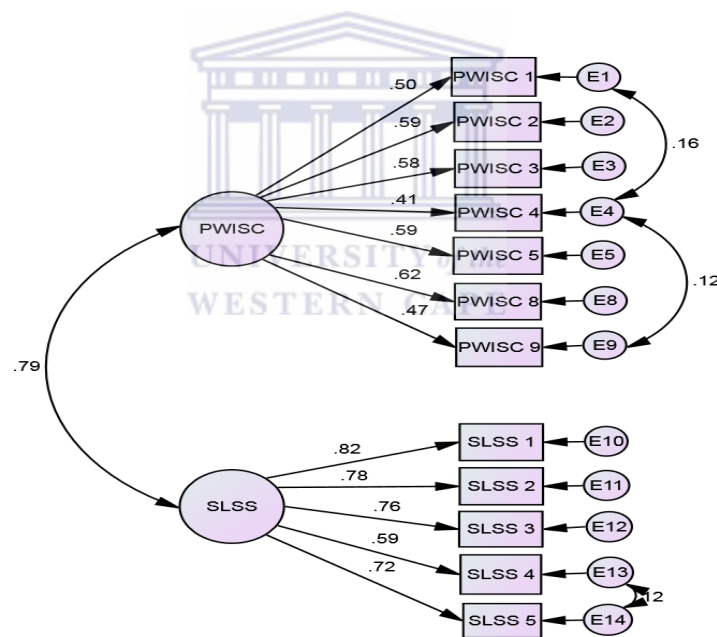
Figure 5: PWI-SC SLSS combined model; constrained factor loadings and intercepts
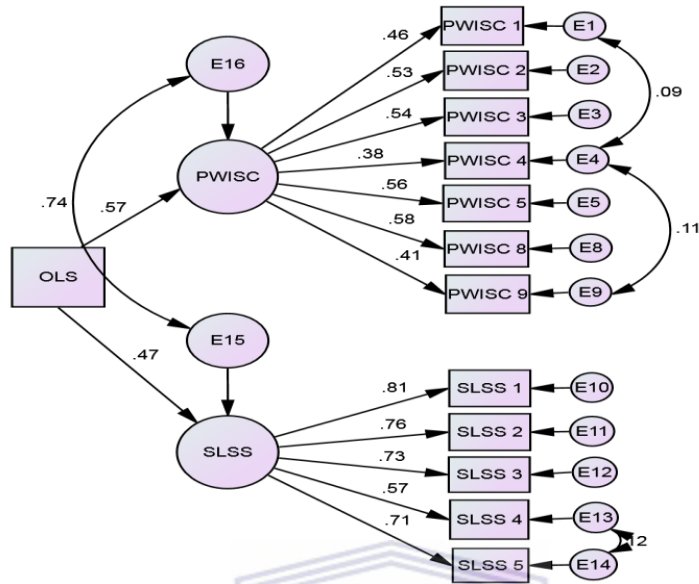
Figure 6: PWI-SC SLSS combined model regressed OLS
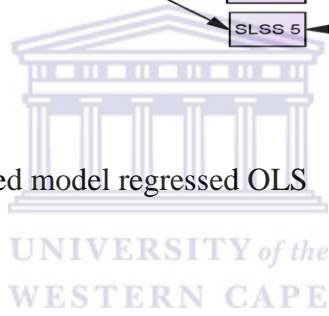
Table 5: Confirmatory factor analysis (standardised regression weights for items on the SLSS & PWI-SC) using the pooled data

Bootstrap ML, 95 % confidence intervals Resamples = 500			Estimate	Lower	Upper	Sig
SLSS						
LifeGoingWell	←	SLSS	0.701	0.662	0.742	0.004
LifeJustRight	←	SLSS	0.643	0.603	0.684	0.004
HaveGoodLife	←	SLSS	0.709	0.670	0.745	0.004
HaveWhatWantInLife	←	SLSS	0.593	0.560	0.628	0.004
ThingsInMyLifeAreExcellent	←	SLSS	0.698	0.658	0.732	0.004
PWI SC						
HappyThingsHave	←	PWI SC	0.449	0.390	0.515	0.004
HappyHealth	←	PWI SC	0.538	0.482	0.600	0.004
SatisfiedThingsGoodAt	←	PWI SC	0.565	0.503	0.629	0.004
HappyRelationshipsGeneral	←	PWI SC	0.390	0.340	0.452	0.004
HappySafety	←	PWI SC	0.511	0.449	0.569	0.004
SatisfiedLaterInLife	←	PWI SC	0.400	0.349	0.455	0.004
SatisfiedTimeUse	←	PWI SC	0.581	0.525	0.629	0.004
SatisfiedLifeAsStudent	←	PWI SC	0.445	0.388	0.506	0.004
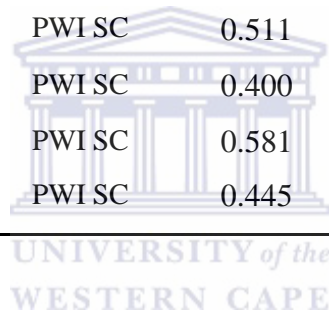
Table 6: Standardised regression weights of the SLSS: Constrained loadings and intercepts across three age groups (8, 10, 12 year olds)

| Bootstrap ML, 95% confidence intervals Resamples=500			8 year old			10 year old			12 year old		
			Estimate	Lower	Upper	Estimate	Lower	Upper	Estimate	Lower	Upper
LifeGoingWell	←	SLSS	0.564	0.504	0.618	0.757	0.705	0.804	0.765	0.715	0.810
LifeJustRight	←	SLSS	0.490	0.432	0.545	0.685	0.626	0.735	0.727	0.677	0.777
HaveGoodLife	←	SLSS	0.565	0.500	0.621	0.717	0.651	0.769	0.779	0.729	0.826
HaveWhatWant	←	SLSS	0.486	0.426	0.549	0.576	0.520	0.630	0.639	0.596	0.682
ThingsLifeExcellent	←	SLSS	0.576	0.521	0.634	0.735	0.684	0.783	0.742	0.701	0.788
SLSS Mean Differences 8 year old as point of reference			0	0	0	-0.034	-0.100	0.032	*-0.185	-0.120	-0.255
SLSS Mean Differences 10 year old as the point of reference			0.034	-0.032	0.100	0	0	0	*-0.151	-0.223	-0.079

* Denotes significant differences

Table 7: Standardised regression weights (combined model): Constrained loadings & intercepts (10 & 12-year olds)

Bootstrap ML, 95 % confidence intervals Resamples = 500			10 year Old				12 Year Old			
			Estimate	Lower	Upper	P	Estimate	Lower	Upper	P
HappyThingsHave	←	PWISC	0.400	0.329	0.477	0.004	0.504	0.434	0.560	0.004
HappyHealth	←	PWISC	0.456	0.391	0.528	0.004	0.591	0.522	0.655	0.004
SatisfiedThingsGoodAt	←	PWISC	0.502	0.448	0.559	0.004	0.576	0.497	0.641	0.004
HappyRelationshipsGen	←	PWISC	0.328	0.273	0.397	0.004	0.413	0.350	0.475	0.004
HappySafety	←	PWISC	0.502	0.434	0.575	0.004	0.592	0.527	0.645	0.004
SatisfiedTimeUse	←	PWISC	0.551	0.496	0.610	0.004	0.620	0.555	0.678	0.004
SatisfiedLifeAsStudent	←	PWISC	0.370	0.315	0.426	0.004	0.475	0.402	0.549	0.004
***PWISC Mean Differences**			0	0	0	0	**-0.144	-0.248	-0.046	0.009
LifeGoingWell	←	SLSS	0.796	0.750	0.839	0.004	0.823	0.785	0.860	0.004
LifeJustRight	←	SLSS	0.726	0.670	0.769	0.004	0.777	0.733	0.820	0.004
HaveGoodLife	←	SLSS	0.693	0.629	0.749	0.004	0.758	0.710	0.809	0.004
HaveWhatWant	←	SLSS	0.522	0.467	0.575	0.004	0.593	0.545	0.641	0.004
ThingsLifeExcellent	←	SLSS	0.708	0.654	0.756	0.004	0.716	0.672	0.759	0.004
***SLSS Mean Differences**			0	0	0	0	**-0.162	-0.239	-0.90	0.004

*The 10-year old group is used as the point of reference
**Denotes significant difference
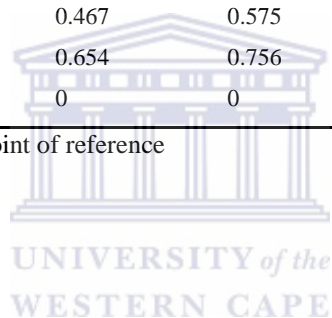
6.   Discussion

The study aimed to ascertain the SWB of a representative sample of children in the Western Cape Province of South Africa. Within this process the study further aimed to fit a structural model depicting the difference between global, domain specific and overall life satisfaction across three age groups (8, 10, and 12).

The results from the descriptive analysis align to previous studies which point to mean composite scores for SWB measures ranging between 60 to 80 for adult samples and between 70 to 80 for child samples (see Casas et al. 2008; Cummins, 1997; Cummins, 2014; Marriage & Cummins, 2004; Savahl et al., 2016; Tomyn & Cummins 2011a; b). These high scores (negative skew) is explained by Cummins (1995) who points to a number of studies which make reference to a 'life optimism bias', where individuals evaluate and put forward a 'generalised positive self-view' (Cummins et al., 2003). This positive evaluation of life experiences is sometimes portrayed regardless of unsatisfactory social contexts and living conditions, and is referred to as the 'satisfaction paradox' (Olsen & Schober, 1993). This notion of the 'satisfaction paradox' was forthcoming in the results of the current study as the participants presented with positive life views within the context of adverse social circumstances. From a homeostasis theory perspective, the results suggest that SWB is maintained at a high 'set-point' by a range of internal and external buffers (Cummins, 2014).

In the current study, similar mean composite scores were found for the context-free (SLSS) and domain specific (PWI-SC) measures. This is in contrast to a previous study conducted by Savahl et al. (2015) with a sample of children from Cape Town, where it was found that the context-free SLSS presented with a substantially lower mean composite score than the PWI-SC. Across age groups in the current study, it is poignant to note that the descriptive statistics depicted high levels of SWB for both measures with mean composite scores ranging between 81.20 to 86.15 for the SLSS; and 83.29 to 84.07 for the PWI-SC.

Confirmatory factor analysis showed excellent fit for both the SLSS and the PWI-SC across age groups (multi-group model). This finding aligns to previous studies conducted with a sample of children from one age group in Cape Town, South Africa (Savahl et al., 2016). The application of multi-group confirmatory factor analysis in the current study found the measures to be comparable across the three age groups (8, 10 & 12) for the SLSS and across two age groups for the PWI-SC (10 & 12). The tenability of scalar invariance is promising as

it allows for the meaningful comparison of the age groups by correlations, regressions and means. It further suggests that the questions are being understood in the same way across the age groups and are thus comparable.

Following recommendations from Casas et al. (2015) and Casas (2016), a combined model with two latent constructs, representing different levels of abstraction was also tested. An excellent fit was obtained for this combined model lending support to Casas et al's (2016) contention that context-free and domain-specific items can be combined in a single model. Similarly, it is important to note that scalar invariance was tenable for this combined model allowing for meaningful comparisons between the 10 and the 12-year old age group. However, given that a high correlation was found between the two latent constructs, it is speculated that they belong to a second-order or supra-construct of SWB. This speculation was confirmed as the results show high factor loadings onto the supra-construct which was identified in this study to be SWB. This result confirms previous hypotheses put forward by Casas et al. (2012) and Diener at al. (1999).

Finally, the single item OLS was included in the combined model to ascertain convergent validity (Casas & Rees, 2015). Appropriate fit statistics was obtained for the overall pooled sample. The standardised regression weights of 0.57 for the PWI-SC and 0.47 for the SLSS point to adequate loadings of the latent constructs onto the OLS.

Given the range of models tested in the current study, the following key contributions are forthcoming. Firstly, the SLSS and PWI-SC are valid measures that can be used across age groups in the Western Cape Province of South Africa. Secondly, considering that scalar invariance was found to be tenable, the age groups can be compared across correlations, regressions and means. Overall, this suggests that meaningful comparisons can be made across age groups and that children understand the question in the same way. Thirdly, this study lends support to suggestions from Casas (2016) that combined models including items of different levels of abstraction are useful in measuring children's SWB. Fourthly, the findings lend support to the contentions of Casas et al. (2012) and Diener et al. (1999) of an overall second-order or a SWB supra-construct. Finally, this study demonstrates that older children score significantly lower on SWB measures than younger children and aligns to the previously cited studies that found a decreasing-with-age tendency on scores of SWB

(see Bradford, Rutheford & John, 2002; Casas, Figuer, González-Carrasco & Malo, 2007; Casas, Tiliouine & Figuer, 2014; Chang, McBride-Chang, Stewart & Au, 2003; Cummins, 1998; Goldbeck, Schmitz, Besier, González-Carrasco & Casas, et al., 2016; González-Carrasco & Malo et al., 2016; Goswami , 2013; Herschbach & Henrich, 2007; Llosada-Gistau et al. 2015; Park, 2005; Petito & Cummins, 2000; Tomyn, Cummins & Norrish. 2015; Ullman & Tatar, 2001; Uusitalo-Malmivaara, 2014). Specifically, the study found a significant mean difference between age groups using the context-free and domain-specific multiple item scales, as well as the single item on Overall Life Satisfaction. For the context-free SLSS, the study found a decreasing-with-age tendency across the three age groups. Notably, it was found that a significant overall mean difference was found between the 10 and 12 year olds and not between the 8 and 10 year; while for the domain-specific PWI-SC a similar tendency was noted across the 10 and 12-year olds participants (8 year old group was not applicable in this analysis). This important finding aligns to those of González-Carrasco, Casas, et al. (2016) and González-Carrasco, Malo et al., (2016) who note the decreasing with age tendency starting at around 10-12 years.

7.   Conclusion and Recommendations

In South Africa, measuring and monitoring initiatives of objective indicators have developed substantially due to the advancement of legislation directed at improving the well-being of children (Savahl, Casas & Adams, 2016). While recent initiatives targeted at increasing our understanding of children's subjective perceptions of their own well-being, such efforts are still in its infancy. There is a dearth of comparable data on children's subjective perceptions and view of their lives in general, that places focus on their living conditions and life circumstances (Casas, 2011). The current study found high levels of SWB across the three age groups. Confirmatory factor analysis revealed an excellent fit for both the SLSS and the PWI-SC for the individual and combined models. Measurement invariance was tenable which suggests that the measures are comparable across the three age groups for the SLSS and two age groups for the PWI-SC. These findings suggest that meaningful comparisons can be made across the three age groups. A key finding of the study is that children's SWB shows a marked decline across the age groups – notably between the 10 and 12 year old age groups.

A key limitation of the current study is the limited applicability and generalizability across other age, language and geographical groups of children in South Africa. It is therefore recommended that further research be conducted across various age groups, using multi-item

scales with larger country-level samples, with particular attention to variations across socio-economic status groups (Savahl et al, 2016). Suggestions from Casas (2011) and Savahl et al. (2015a) recommend that a more in-depth understanding of children's subjective perceptions of well-being research initiatives are needed which point to the importance of including qualitative research. Noting suggestions from Casas (2016) further cross-cultural studies are recommended. Likewise, longitudinal studies are needed, especially to allow for a deeper level of analysis of the factors that may be contributing to the decreasing-with-age tendency (Casas & Rees, 2015).

References

Adams, S. & S. Savahl. (2016). Children's discourses of natural spaces: consideration for children's subjective well-being. *Child Indicators Research*, 1-24. DOI:10.1007/s12187-016-9374-2.

Bandura, R., & Conceicao, P. (2009). *Measuring subjective well-being: a summary review of the literature*. United Nations Development Programme.

Ben-Arieh, A. (2008). The child indicators movement: past, present and future. *Child Indicators Research, 1*, 3-16.

Blore, J.D., Stokes, M.A., Mellor, D., Firth, L. & Cummins, R.A. (2011). Comparing multiple discrepancies theory to affective models subjective well-being. *Social Indicators Research*, *100*(1), 1-16. DOI: 10.1007/s11205-010-9599-2.

Bradford, R., Rutheford, D. L., & John, A. (2002). Quality of life in young people: ratings and factor structure of the Quality of Life Profile-Adolescent Version. *Journal of Adolescence*, *25*(3), 261-274. DOI: 10.1006/jado.2002.0469

Brîndușa-Antonia, D. (2013). *The subjective well-being of children*. Phd Thesis Summary. The Faculty of Sociology and Social Work, University of Cluj-Napoca.

Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design.* Cambridge, MA, Harvard.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development. Research perspectives. *Developmental Psychology, 22*(6), 723-742.

Bronfenbrenner, U. (1995). In P. Moen, G.H. Elder, JR., & K. Luscher (Eds), *Examining lives in context: perspectives on the ecology of human development* (pp. 619-647). Washington, DC: American Psychological Association.

Bronfenbrenner, U. (2005). *Making human beings human: bioecological perspectives on human development*. Thousand Oaks, CA: Sage.

Camfield, & Skevington, L. C. (2008). On subjective well-being and quality of life. *Journal of Health Psychology*, 763-775.

Casas, F., Figuer, C., González, M., & Malo, S. (2007). The values adolescents aspire to, their well-being and the values parents aspire to for their children. *Social Indicators Research*, *84*, 271-290. DOI: 10.1007/s11205-007-9141-3.

Casas, F., Coenders, G., Cummins, R. A., Gonzalez, M., Figuer, C, & Malo, S. (2008). Does subjective well-being show a relationship between parents and their children? *Journal of Happiness Studies*, *9*, 197-205.

Casas, F. (2011). The well-being of young people and their parents amid tough times: views from Spain. *The American Journal of Orthopsychiatry*, *81*, 461–467.

Casas, F., Sarriera, J.C., Abs, D., Coenders, G., Saforcada, J.A.E & Tonon, G. (2012). Subjective indicators of personal well-being among adolescents. Performance and results for different scales in Latin-language speaking countries: a contribution to the international debate. *Child Indicators Research*, *5*(1), 1-28. DOI 10.1007/s12187-011-9119-1.

Casas, F., Bello, A., González-Carrasco, M. & Aligué, M. (2013). Children's subjective well-being measured using a composite Index: what impacts Spanish first-year secondary education students' subjective well-being? *Child Indicators Research*, *6*(3), 433-460. DOI 10.1007/s12187-013-9182-x.

Casas, F., Tiliouine, H. & Figuer, C. (2014) The subjective well-being of adolescents from two different cultures: applying three versions of the PWI in Algeria and Spain. *Social Indicators Research*, *115*(2), 637-651.

Casas, F. & Rees, G. (2015). Measures of children's subjective well-being: analysis of the potential for cross-national comparisons. *Child Indicators Research*, 8(1), 49-69. DOI 10.1007/s12187-014-9293-z.

Casas, F. (2016). Analysing the comparability of 3 multi-item subjective well-being psychometric scales among 15 countries using samples of 10 and 12-year-olds. *Child Indicators Research*. DOI:10.1007/s12187-015-9360-0.

Casas, F. (2016). *The decreasing-with-age subjective wellbeing trend: new data and new challenges for research and education*. Conference Paper for the Global Summit on Childhood. Costa Rica.

Chang, L., McBride-Chang, C., Stewart, S.M., & Au, E. (2003). Life satisfaction, self-concept, and family relations in Chinese adolescents and children. *International Journal of Behavioral Development*, *27*(2), 182-189. DOI: 10.1080/01650250244000182.

Chen, F.F., Sousa, K. & West, S.G. (2005). Testing measurement invariance of second-order factor models, *12*(3), 471-492.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing MI. *Structural Equation Modelling*, *9*, 235–255.

Cummins, R. A., Eckersley, R., Lo, S. K., Okerstrom, E., Hunter, B., & Davern, M. (2003). Australian unity wellbeing index: report 6.0 - "The Wellbeing of Australians - The Impact of the Iraq Situation". Retrieved January 16, 2012, Melbourne: Australian Centre on Quality of Life, School of Psychology, Deakin University. ISBN 0 7300 2583 7, from http://www.deakin. edu.au/research/acqol/index_wellbeing/index.htm

Cummins, R. A., & Lau, A. D. L. (2005). *Personal wellbeing index: school children (PWI-SC) (3rd ed).* Melbourne: Deakin University.

Cummins, R.A. (2013). *The theory of subjective well-being homeostasis*. New York: Oxford University Press.

Cummins, R.A. (2014). Understanding the well-being of children and adolescents through homeostatic theory. *Handbook of Child Well-being*, 635-661.

Currie, C., Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., Samdal, O., Smith,

O. R. F., & Barnekow, V. (2012). Social determinants of health and well-being among young people. Health behaviour in school-aged children (HBSC) study: International report from the 2009/2010 survey (health policy for children and adolescents, No. 6). Copenhagen: WHO Regional Office for Europe.

Davern, M.T.; Cummins, R.A.; Stokes, M.A. (2007). Subjective well-being as an affective-cognitive construct. *Journal of Happiness Studies*, *8*, 429 - 449. DOI:10.1007/s10902-007-9066-1.

Dew, T., & Huebner, E.S. (1994). Adolescents' perceived quality of life: an exploratory investigation. *Journal of School Psychology*, *33*(2), 185–199.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95,*542-575.

Diener, E., Suh, E. M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: three decades of progress. *Psychological Bulletin,*276-302.

Diener, E. (2000). Subjective well-being: the science of happiness and a proposal for a national index. *American Psychological Association*, 34-43.

Diener, E., Lucas, R. E., & Oishi, S. (2005). Subjective well-being: the science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), Handbook of positive psychology (2nd ed.), (pp. 63-73). New York, NY: Oxford University Press.Dolan, P., Layard, R., & Metcalfe, R. (2011). Measuring subjective well-being for public policy. Office for National Statistics: Office Public Sector.

Durayappah, A. (2010). The 3p model: a general theory of subjective well-being. *Journal of Happiness Studies.* DOI 10.1007/s10902-010-9223-9.

Fattore, T., Mason, J & Watson, E. (2007). Children's conceptualisation of their well-being. *Social Indicators Research 80*, 5-29. DOI 10.1007/s11205-006-9019-9.

Fattore, T., Mason, J., & Watson, E. (2012). Locating the child centrally as a subject in research: towards a child interpretation of well-being. *Child Indicators Research 5*,

423- 435. DOI 10.1007/s12187-012-9150-x.

Fattore, T., Fegter, S., & Hunner-Kriesel, C. (2015). *5th Conference of the international society for child indicators: from welfare to well-being. Child indicators in research, policy and practice.* Cape Town: HANSA.

Goldbeck, L., Schmitz, T. G., Nesier, T., Herschbach, P., & Henrich, G. (2007). Life satisfaction decreases during adolescence. *Quality of Life Research*, *16*, 969-979. DOI:10.1007/s11136-007-9205-5.

González-Carrasco, M., Casas, F., Malo, S., Vinas, F., & Dinisman, T. (2016). Changes in age with subjective well-being through the adolescent years: differences by gender. *Journal of Happiness Studies*, 1-26. DOI 10.1007/s10902-016-9717-1.

González-Carrasco, M., Casas, F., Viñas, F., Malo, S., Gras, M.E. & Bedin, L. (2016). What leads subjective well-being to change through adolescence? An exploration of potential factors. *Child Indicators Research*. Advance on-line publication. DOI: 10.1007/s12187-015-9359-6.

Goswami, H. (2013). Children's subjective well-being: socio-demographic characteristics and personality. *Child Indicator Research*, *7*(1): 119-140.

Heathwood, C. 2005. The problem of defective desires. A*ustralasian Journal of Philosophy 83*(4): 487–504.

Hooper, D., Coughlan, J., Mullen, M. (2008): Structural equation modelling: guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(*1*), 53-60.

Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

Huebner, E.S. (1991). Initial development of the student's life satisfaction scale. *School Psychology International*, *12*, 231-240.

Huebner E. S. & Alderman, G. L. (1993). Convergent and discriminant validation of a children's life satisfaction scale: Its relationship to self- and teacher-reported psychological problems and school functioning. *Social Indicators Research*, *30*, 71 – 82.

Huebner, E.S., Suldo, S.M. & Valois, R.F. (2003). *Psychometric Properties of Two Brief Measures of Children's Life Satisfaction: The Students' Life Satisfaction Scale (SLSS) and the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS)*. Paper prepared for the Indicators of Positive Development Conference, March 12-13, Washington, DC.

Huebner, E. S., Suldo, S. M., Smith, L. C., & McKnight, C. G. (2004). Life satisfaction in children and youth: Empirical foundation and implications for school psychologists. *Psychology in the Schools*, *41*, 81-93.

Jaccard, J. & Wan, C.K. (1995). Measurement error in the analysis of interaction effects between continuous predictors using multiple regression: multiple indicator and structural equation approaches, *Psychological Bulletin*, *117*(*2*), 348-357.

Jackson, D.L., Gillaspy, Jr., J.A. & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analyses: An overview and some recommendations. *Psychological Methods*, *14*(*1*), 6-23.

Kline, R.B. (2010). *Principles and practice of structural equation modelling (3rd ed.)*. New York: Guilford Press.

Llosada-Gistau, J., Montserrat, C., & Casas, F. (2015). The subjective well-being of adolescents in residential care compared to that of the general population. C*hildren and Youth Services Review*, *52*, 150–157. DOI:10.1016/j.childyouth.2014.11.007.

Marriage, K., & Cummins, R. A. (2004). Subjective quality of life and self-esteem in children: the role of primary and secondary control in coping with everyday stress. *Social Indicators Research*, *66*, 107-122.

Meuleners, L. B., & Lee, A. H. (2005). Quality of life profile-adolescent version: assessing the

relationship of covariates to scale scores using structural equation modeling. *Quality of Life Research, 14*, 1057-1063. DOI: 10.1007/s11136-004-2573-1.

Minkkinen, J. (2013). The structural model of well-being. *Child Indicators Research 6*(3), 547-558.

Olsen, G. I., & Schober, B. I. (1993). The satisfied poor: development of an intervention-oriented theoretical framework to explain satisfaction with a life in poverty. *Social Indicators Research*, *28*(2), 173–193.

Park, N. (2005). Life satisfaction among Korean children and youth. A developmental perspective. *School Psychology International*, *26*(2), 209-223. DOI: 10.1177/0143034305052914.

Petito, F., & Cummins, R. A. (2000). Quality of life in adolescence: the role of perceived control, parenting style, and social support. *Behaviour Change*, *17*(3), 193-207. DOI: 10.1375/bech.17.3.196.

Proctor, C., Linley, P.A., & Maltby, J. (2009). Youth life satisfaction measures: a review. *The Journal of Positive Psychology 4*(2), 128-144.

Pollard, E. L., & Rosenberg, M. L. (2003). *The strength-based approach to child well-being: Let's begin with the end in mind*. In M. H. Bornstein, L. Davidson, C. L. M. Keyes, & K. A. Moore (Eds.), *Well-being: positive development across the life course,* (pp. 13–21). New Jersey: Laurence Earlbaum.

Sandin, B. (2014). *History of children's well-being*. In A. Ben-Arieh, F. Casas, I. Frones, & J. E. Korbin (Eds.), Handbook of Child Well-Being: Theories, Methods and Policies in Global Perspective. (pp. 31-86). Dordrecht: Springer.

Savahl, S., Malcolm, C., Slembrouk, S., Adams, S., Willenberg, I., & September, R. (2015a). Discourses on well-being. *Child Indicators Research*, *8*(4), 747-766.

Savahl, S., Casas, F & Adams, S. (2016). Children's subjective well-being: multi-group analysis among a sample of children from two socio-economic status groups in the Western Cape, South Africa. *Child Indicators Research*, 1-16. DOI 10.1007/s12187-016-9392-0.

Savahl, S., Adams, S., Isaacs, S., Hendricks, G. and Noordien, Z (2015b). Subjective well-being amongst a sample of South African children: a descriptive study. *Child Indicators Research.* 8(1), 211-226.

Savahl, S., Tiliouine, H., Montsserat, C., Casas, F., Adams, S & Benninger, E. (2016). Children's experiences of bullying and the impact on their subjective well-being: a multinational comparison. *Journal of Child Development.* Under Review.

September, R., & Savahl, S. (2009). Children's perspectives on child well-being. *The social work practitioner-researcher*, 23-40.

Seligson,J.L., Huebner, E.S & Valois, R.F. (2003). Preliminary validation of the brief multidimensional students' life satisfaction scale (BMSLSS). *Social Indicators Research, 61*(2), 121-145.

Strózik, D., Strózik, T & Szwarc, K. (2016).The subjective well-being of school children. The first findings from the children's worlds study in Poland. *Child Indicators Research, 9*, 39–50. DOI 10.1007/s12187-015-9312-8.

Suldo, S. M. & Huebner, E. S. (2004). Does life satisfaction moderate the effects of stressful life events on psychopathological behaviour during adolescence? *School Psychology Quarterly*, *19*(2), 93-105.

Suldo, S. M., & Huebner, E. S. (2006). Is extremely high life satisfaction during adolescence advantageous? *Social Indicators Research*, 78, 179-203. DOI: 10.1007/s11205-005-8208-2.

Tomyn, A. J., & Cummins, R. A. (2011a). Subjective wellbeing and homeostatically
protected mood: theory validation with adolescents. *Journal of Happiness Studies, 12*(5),
897–914. DOI:10.1007/ s10902-010-9235-5.

Tomyn, A. J., & Cummins, R. A. (2011b). Subjective well-being of high-school students.
validating the personal well-being index-school children. *Social Indicators Research,
101,* 405-418*.* DOI:10.1007/s11205-010-9668-6.

Tomyn, A. J., Cummins, R., & Norrish, J. M. (2015). The subjective wellbeing of "at risk"
indigenous and non-indigenous Australian adolescents. *Journal of Happiness Studies*, *16*,
813–837. DOI:10.1007/s10902-014-9535-2.

Ullman, C., & Tatar, M. (2001). Psychological adjustment among Israeli adolescent
immigrants: a report on life satisfaction, self-concept and self-esteem. *Journal of Youth
and Adolescence*, *30*(4), 449-463. DOI: 10.1023/A:1010445200081.

Uusitalo-Malmivaara, L. (2014) Happiness decreases during early adolescence. A study on
120 and 15-year-old Finnish students. *Psychology*, *5*, 541-555.
http://dx.doi.org/10.4236/psych.2014.56064