Franklin's Thrive Survive Survey: Examining Factor Structure and Convergence with Subjective Well-being

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Abstract

Despite overlap in the concepts presented within established needs-based theories of well-being, a lack of consensus exists regarding the most appropriate formulation of the needs, or the basis upon which they should be derived. This dissertation assesses a survey that addresses Thrive and Survive Theory (TST; Franklin, 2013, 2018), which is an evolutionary needs-based theory of achievement and well-being which aims to unify the plurality of existing approaches to well-being. The Thrive Survive Survey is a quantitative measure of TST's six discrete needs domains. Altogether, 882 primarily Western adults completed the Survey. Factor Analysis utilising Principal Axis Factoring revealed several problematic items, and suggested that the survey failed to discriminate between Growth and Achievement needs, which is consistent with a prior investigation. However, a five-factor solution combining Growth and Achievement resulted in a good fit to the data. Hence, Franklin's proposed factor structure was largely supported. Multiple regression models demonstrated the resulting five needs domains significantly predicted Positive and negative affect, and life satisfaction, which further supported the survey's construct validity. These findings suggest that TST shows promise as a unifying framework of human psychological needs, and may yield valuable contributions towards the development of novel intervention and treatment strategies.

Statement of Candidature

I certify that the research described in this thesis has not been previously submitted for a higher degree. I certify that all sources and the extent to which they were used have been appropriately referenced. I certify that the research described in this thesis has been approved by the Macquarie University Ethics Subcommittee: approval number 5201200437.

Ben Stiel:

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Introduction

The State of Well-being: Beginnings of Positive Psychology and Current Challenges

In the fourth century B.C. Aristotle began his seminal work, *Nicomachean Ethics*, by posing the question 'what is the good for human beings?' (translated by Irwin, 1989). However, we have been slower to apply this question to scientific scrutiny (McMahon, 2006). Even within psychology, this question has been historically overlooked in favour of investigations into the negative aspects of human functioning (Joseph & Wood, 2010). For example, though there is extensive research on the detrimental impact of loneliness (Heinrich & Gullone, 2006), much less is understood about the fulfillment gained from positive interpersonal relationships (Levin, 2000). Similarly, negative cognition related to depression has been well studied (Wisco, 2009), but there has been much less attention given to the benefits of positive cognitive acts such as gratitude (Wood, Maltby, Stewart, & Joseph, 2008). While the importance of this focus upon investigating poor mental health is far reaching, there is growing acknowledgement that a balanced understanding of well-being requires consideration to what promotes positive functioning (Wood & Tarrier, 2010). Furthermore, identifying the antecedents of well-being has profound implications not only for the promotion of happy and fulfilling lives, but also for the treatment, prediction and prevention of clinical disorder (Wood & Joseph, 2010).

Numerous investigations into different aspects of positive psychological functioning are scattered throughout the psychological literature of the early 20th century (see Alex Linley, Joseph, Harrington, & Wood, 2006; Waterman, 1993 for a review of notable examples). Psychology's study of happiness and well-being began in earnest in the 1950's with the emergence of humanistic psychology (Brey, 2012).

Humanistic psychology's emphasis on positive emotional states and personal growth presented an inspiring alternative to clinical psychology's traditional focus on mental illness. For example, in his 1954 book *Motivation and Personality*, Maslow wrote "The science of psychology … has revealed to us much about man's shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his full psychological height. It is as if psychology had voluntarily restricted itself to only half its rightful jurisdiction" (p. 354). To address this, Maslow (1943) investigated the drivers of human motivation and formulated a hierarchical model of universal psychological needs, fulfillment of which he theorised was central to human flourishing. In the same tradition, Carl Rogers (1963) proposed a concept of the fully functioning person as somebody who is continually working towards actualising their talents and potentials. Simultaneously, investigations into the positive side of human functioning were taking shape outside of humanistic psychology. A landmark study by Bradburn challenged existing assumptions about the dimensions of well-being by demonstrating that positive and negative emotions form independent factors (Bradburn, 1969). The 1970s and 1980s saw interest in well-being research gain further momentum, with an increasing number of journal articles dedicated to the subjects of happiness and quality of life. Diener's galvanising review of the emerging subjective well-being literature (1984) invigorated the field by proposing a standardised method by which 'happiness' could be empirically measured. In the decade or so that followed, Ryff's initial writings on psychological well-being (1989), Csikszentmihalyi's (1990) seminal work, *Flow: The psychology of optimal experience*, and Deci and Ryan's efforts in the development of self-determination theory (2000) stand out as a few significant contributions of many.

As the end of the millennium approached, well-being research was generating growing interest. Despite this, Maslow's observation from nearly 50 years earlier

about the bias in psychology's preoccupation with the negative remained relevant (Seligman & Csikszentmihalyi, 2000). Martin Seligman, in his inaugural address as President of the American Psychological Society in 1998, lamented that too little was known about what makes life worthwhile and how to promote personal strengths and virtues. He advocated that psychology redress its unbalanced focus on illness by committing more effort towards the investigation of those conditions that cause people to thrive and flourish (Seligman, 1999).

Seligman's address is often heralded as the beginning of the Positive Psychology movement, though the study of positive psychology preceded this moment (Alex Linley et al., 2006; McCullough & Snyder, 2000). The term 'positive psychology' can be found in the writings of Maslow (1954). However, the pronouncement of a new field provided an umbrella under which the efforts of researchers could be unified in service of developing an empirical science of well-being. In the near-two decades since its inception, the benefits of Seligman's initiative are manifest. There has been an enormous and growing increase in the number of research articles, books, conferences, and opinion papers on the topic of positive psychology published. Additionally, journals have produced special issues dedicated entirely to positive psychology, a surge of media interest in the topic of happiness has occurred around the world, and a several positive psychology journals have been established (Alex Linley et al., 2006; Schrank, Brownell, Tylee, & Slade, 2014). Positive psychology's interest has also branched into fields other than psychology, including education, economics, medicine, politics, and social work among many others (Warren, Donaldson, & Donaldson, 2017).

Regardless, there are numerous challenges that confront the field of positive psychology. Divergent schools of thought, inconsistency in terminology and constructs from incompatible theoretical bases have created a confusing and

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sometimes contradictory body of literature (Dodge, Daly, Huyton, & Sanders, 2012; Thomas, 2009). Even after three decades of burgeoning interest in well-being research, a definition of the term "well-being" is contested, as is its relationship to related terms such as 'happiness', 'fulfillment', 'joy', 'flourishing', 'life satisfaction', 'self-actualisation', and 'positive affect', to name just a few overlapping concepts. This is perhaps an inevitable consequence of psychology's attempt to apply the principles of empiricism to an inherently philosophical question: what is well-being? Much effort has centered around identifying, describing, and analysing dimensions relating to well-being that can be observed and measured, rather than providing a definite meaning for the term (Dodge et al., 2012). Further complicating matters, researchers from different theoretical traditions define these dimensions in different and often incompatible ways (Thomas, 2009). It is perhaps unsurprising then that the positive psychology literature has been criticised as having "blurred and overly broad definitions of well-being" (Forgeard, Jayawickreme, Kern, & Seligman, 2011, p. 87).

The field currently lacks a framework through which the diverse concepts and theoretical approaches that define Positive Psychology can be unified. As discussed in a Chapter 2, evolutionary psychology may provide such a framework. The aim of this thesis is to empirical investigate Thrive and Survive Theory (TST): a needs-based meta-theory of human well-being informed by the principles of evolutionary psychology. The thesis is divided into six parts. Chapter 1 provides an overview of the important concepts and theories that have informed well-being research to date. Chapter 2 outlines the principles of evolutionary psychology and discusses its potential as a unifying framework for psychology in general. Chapter 3 introduces TST and explores its theoretical underpinnings. Chapters 4 and 5 detail an empirical study investigating the construct validity of the Thrive Survive Survey, a questionnaire formulated to operationalise TST. Chapter 6 discusses the results and

implications of this study.

Chapter 1

This Chapter describes established theories of well-being and the concepts that have defined positive psychology. Different traditions that have formed the basis of current conceptions of well-being are explored, including the contributions these have made to our knowledge of the conditions that promote well-being. A critical discussion follows with attention to influential theories within the well-being literature, concluding with discussion of some prominent needs-based theories of well-being.

Approaches to Well-being

Most approaches to well-being can be traced back to one of two philosophical traditions: hedonism and eudaimonia (Lambert, Passmore & Holder, 2015). Hedonism equates well-being with the subjective experience of pleasure and positive mood (Kahneman, Diener, & Schwarz, 1999; Ryan & Deci, 2001). In contrast, eudaimonia conceptualises well-being not as an *outcome,* but as a *process* of realising the true self – or inner daemon – by fulfilling the virtuous potential one's inherent nature intended (Ryan, Huta, & Deci, 2013). For Aristotle, widely considered the father of the eudaimonic approach, the notion that experience of happiness and pleasure should be the guiding principles of life was repugnant. He conceptualises well-being as a meaningful engagement in life, nurturance of personal strengths and potential, and living in accordance with one's beliefs and values (Waterman, 1993). A further distinction between hedonic and eudaimonic approaches can be drawn according to the degree to which they depend upon subjective or objective standards in determining well-being. The hedonic perspective is focused on subjectively determined mental states, whereas the eudaimonic approach concerns itself with meeting objective needs that are considered fundamental to human nature and personal growth (Kagan, 1992; Ryff, 1989).

Hedonism (and Life Satisfaction)

Greek philosopher Aristippus (fourth century BC) is the earliest known proponent of the hedonistic tradition. He taught that the greatest worth in life could be found in an easy and carefree existence abundant with the experience of physical pleasure. Central to his philosophy is the idea, known as ethical hedonism, that all people have a right to maximise the amount of pleasure, and minimise the amount of pain they experience in life (Urstad, 2009). Following in this tradition, 16th Century English philosopher Thomas Hobbes claimed that the purpose of life was to continually obtain what he termed *Felicity*: those things that we desire (Boonin-Vail, 1994). De Sade also famously advocated the pursuit of physical pleasure as a way of life, particularly as experienced through the senses (Airaksinen, 2002). Philosophers such as Mills and Bentham framed their philosophy of utilitarianism on the concept that the utility of actions could be determined according to the extent to which they promoted pleasure and reduced pain (Nussbaum, 2004). More recently, well-being researchers in the hedonic tradition have applied the concept of hedonism broadly to relate to a focus not only on physical pleasures but on all experiences that are subjectively positive (see Ryan & Deci, 2001). In this way, hedonic well-being can also be serviced through a diversity of valued outcomes, such as realisation of goals, insofar as they promote subjectively positive experiences. This is often expressed in terms of 'affect' which refers to "pleasant and unpleasant moods and emotions" (Diener & Suh, 1997, p. 200).

A related view holds that a person's well-being is influenced by the extent to which one is satisfied with their life. As with the experience of affect, life satisfaction is a subjective concept: a person must judge for himself or herself how satisfied they are with their life (Diener, Inglehart, & Tay, 2013). However, life satisfaction differs in that it is a cognitive evaluation requiring a reasoned appraisal of one's life as a

whole, as distinct from a simple account of their affective state (Keyes, 2014). Although life satisfaction is not strictly speaking a hedonic concept, researchers in this tradition generally agree that a person's appraisal of how successfully they are able to obtain things they desire, can contribute to their happiness and well-being in meaningful ways (Diener & Suh, 1997).

Diener (1984) reviewed an emerging body of research on subjective indicators of well-being and proposed a model he termed "subjective well-being" (SWB). Diener argued that SWB consisted of two components: 1) an evaluation of one's affective experiences, reflecting both positive and negative reactions, and 2) a cognitive appraisal of one's general level of life satisfaction. In this model, a person is considered high in SWB if they report an abundance of positive affect, low but appropriate levels of negative affect, and a general sense of satisfaction with their life as a whole. Together, the constructs that make up SWB are often substituted for the more approachable – if somewhat "scientifically unwieldy" (Lee Duckworth, Steen, & Seligman, 2005, p. 635) – term 'happiness' Diener (1984).

Eudaimonia

Despite the traction of the hedonic viewpoint, one of the enduring debates in well-being research queries the significance of 'happiness' *per se* as a component of general well-being. Proponents of the eudaimonic tradition argue that a person's subjective judgement of their affective state and life satisfaction is not necessarily an indicator of psychological health (Diener, 1984; Heintzelman & Tay, 2017; Lyubomirsky & Dickerhoof, 2005). To illustrate this point, consider how a person suffering from bipolar 1 disorder might report their SWB when in the midst of a manic episode. Undoubtedly, s/he would report high levels of SWB despite being considered psychologically unwell. Consequently, eudaimonic proponents consider SWB to be a potentially misleading or insufficient means of judging well-being.

Moreover, eudaimonic theories contend that the pursuit of some pleasure-inducing activities can undermine overall well-being and that many pursuits that are not inherently pleasurable can promote positive psychological functioning (Gruber, Mauss, & Tamir, 2011; Sidgwick, 1907). For example, many students may find the process of studying for exams to be distinctly unpleasant (Seipp, 1991), yet the sense of achievement and the opportunities that follow might contribute to their life in ways that benefit their well-being.

As such, from the eudaimonic perspective the experience of positive states of mind cannot adequately account for well-being (White, Gaines, & Jha, 2012). Rather, in much the same way as success might be judged according to a particular standard, eudaimonia defines well-being in reference to external criteria such as how virtuous or meaningful a person's life is (Waterman, 1993). Conceptions of eudaimonia are therefore normative, as they depend upon the cultural or value framework in which they are applied. Perhaps eudaimonic well-being is more a matter of ethics than psychology, because "it is seen as reflecting objective social values rather than subjective psychological feelings" (Kashdan, Biswas-Diener, & King, 2008, p. 220). For Aristotle, for instance, the notion that well-being could be earned through righteous deed held a moral appeal. Eudaimonia's emphasis on the importance of ethical behaviour to a life well-lived, rather than state of mind, is also based upon an inherent mistrust of mental states and feelings, which it contends may or may not be virtuous. After all, as Annas (2004) writes, "Some people feel happy when helping old ladies across streets; others feel happy when torturing puppies" (cited in Kashdan et al., 2008). By placing emphasis on doing 'good', rather than feeling good, eudaimonia side steps potential moral issues which may arise when hedonic pleasure-seeking is the primary determinant of one's way of life. Regardless, an underlying

assumption of eudaimonia is that positive feelings will be an integral by-product of a life well lived (Deci & Ryan, 2000; Kashdan et al., 2008; Ryan, 1995).

One important distinction between the hedonic and eudaimonic traditions concerns the diversity of approaches. Unlike the hedonic tradition's embrace of SWB as an operational conception of happiness, there is no unifying theory or methodology that draws together eudaimonic conceptions of well-being (Huta & Waterman, 2014). Instead, eudaimonia categorises a diverse range of approaches with the commonality that they view well-being as a process, rather than an outcome, and do not rely upon subjective indicators in their formulation of well-being (Kashdan et al., 2008). Some prominent examples include self-determination theory (Deci & Ryan, 2000), Ryff's six-factor model of psychological well-being (Ryff & Keyes, 1995b), and self-realisation theory (Waterman, 1993). Eudaimonia's influence can also be recognised in humanistic concepts such as the Rogerian notion of the fully functioning person (Rogers, 1965) and Maslow's principle of self-actualisation (Maslow, 1954). It is also evident in ideas such as flow (Csikszentmihalyi, 2014) and flourishing (Keyes, 2002). As such, there is a lack of agreement about the most appropriate way to standardise eudaimonia as an operational concept.

Combining the Two Perspectives

As is apparent, the hedonic and eudaimonic approaches originate from distinct views of what constitutes the good life. The hedonic tradition concentrates on SWB as a metric for happiness (e.g. Kahneman et al., 1999), while eudaimonic proponents argue that meaningful engagement in life and personal growth are the primary contributors to well-being (e.g. Ryff, 1989; Waterman, 1993). Contemporary psychologists investigating the antecedents of well-being have tended to subscribe to either a hedonic or eudaimonic viewpoint, rather than integrating the positions (Deci & Ryan, 2008b; Delle Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011; Kashdan

et al., 2008). In fact, much well-being research and discussion is defined according to this distinction; researchers tend to identify explicitly with one theoretical tradition or the other (e.g., Deci & Ryan, 2000; Kopperud & Vitters, 2008; Maltby, Day, & Barber, 2005; Vallerand, 2016; Waterman, 2007). On the other hand, some have questioned the validity of differentiating well-being along hedonic and eudaimonic lines (e.g. Kashdan et al., 2008; Kristjánsson, 2010), arguing that the philosophical differences underpinning the two approaches do not translate well to empirical study and instead create a "confusing and contradictory research base" (Pollard & Lee, 2003, p. 2). However, increasingly there is a recognition that both approaches contribute in related, yet distinct ways, and well-being is best conceived as a multi-dimensional construct incorporating both approaches (Gallagher, Lopez, & Preacher, 2009; Linley, Maltby, Wood, Osborne, & Hurling, 2009; Ryan & Huta, 2009; Waterman, 2008). In this respect, Seligman (2002) highlighted evidence indicating that individuals who pursue both hedonic and eudaimonic motives exhibit higher levels of well-being than those who are oriented more towards a single approach. This conclusion was further supported by Peterson, Park, and Seligman (2005), who investigated differences in life satisfaction according to individuals' orientations to pleasure, engagement, and meaning in their lives. They found that all three orientations independently predicted greater satisfaction with life. These findings emphasise the validity of studying both hedonic and eudaimonic conceptions of well-being.

Flourishing

In a model that integrates hedonic and eudaimonic conceptions, Keyes (2002, 2007) describes mental health as a syndrome, symptoms of which consist of both subjectively positive feelings (SWB) and positive psychological and social functioning. Positive psychological functioning is defined according to a range of

criteria based upon eudaimonic concepts such as purpose, personal growth, engagement in life, and self-worth, while social functioning relates to the quality of a person's connections with, and contributions to, others. Keyes contends that mental health is not simply the absence of mental illness. Instead, he argues that mental health and mental illness exist on two separate continua and are only moderately correlated. The presence of mental health is termed *flourishing* while its absence is characterised as *languishing*. Although mental health and mental illness are independent constructs, some studies have shown languishing to be associated with a significantly greater risk of mental illness and a range of psycho-social impairments relative to flourishing (Keyes, 2002). Conversely, flourishing correlates with better psychological and physical health profiles (Keyes, 2007). Furthermore, data on individuals who were high on measures of either hedonic or eudaimonic well-being (but not both) indicated different psychosocial profiles, providing further evidence that hedonia and eudaimonia both contribute independently to well-being (Keyes & Annas, 2009).

Elements of Well-Being

       Subjective well-being (SWB). Within the hedonic tradition, SWB, defined as "a person's cognitive and affective evaluations of his or her life" (Diener, Lucas, & Oishi, 2002, p. 63), has become widely utilised as an empirical approach to evaluating positive human functioning and quality of life (Angner, 2010; Diener et al., 2002; Diener, Oishi, & Lucas, 2015; Diener, Suh, Lucas, & Smith, 1999; Keyes, 2005; Krueger & Stone, 2014; Lyubomirsky & Dickerhoof, 2006; Ryan & Deci, 2001; Tov & Diener, 2013). A search of the PsycINFO database reveals that Diener's (1984) original article has garnered more than 1150 citations, and empirical studies investigating SWB with reference to life satisfaction and positive and negative affect number in the thousands (Busseri & Sadava, 2011). This body of research has

provided a large amount of information on SWB, including evidence on the validity and reliability of self-report instruments, the correlates and conditions of SWB, and the utility of SWB as a national index of well-being for policy makers (Eid & Larsen, 2008). Studies have shown that higher levels of SWB are positively correlated with a wide range of desirable outcomes related to mental health, physical health, mortality, social and occupational functioning and socio-economic factors (for a review see De Neve, Diener, Tay, & Xuereb, 2013).

Positive and negative affect. Diener emphasised the importance of separating affect into two components in accordance with the finding of a landmark study by Bradburn (1969) which determined that items measuring positive and negative affect were only moderately correlated with one another (Diener, 2000). A significant implication of this conclusion is that positive and negative affect are not simply opposite ends of a continuum but best conceived as separate unipolar dimensions. In other words, positive affect cannot be promoted simply by ameliorating negative affect since positive affect is a separate and largely independent construct. Although this conclusion has received mixed support, with compelling arguments on either side of the debate (see Lindquist, Satpute, Wager, Weber, & Barrett, 2015; Russell & Carroll, 1999; Yik, 2007 for more in-depth discussion of this point), Diener points out that treating self-reports of affect as a continuous bipolar construct could cause researchers to overlook insights that only become apparent when measuring positive and negative affect separately (Diener, 2000). For example, Diener, Sandvik, and Pavot (2009) found that reports of happiness are better predicted by the frequency of positive emotion than its intensity. Thus, by treating positive and negative affect as separate variables, it may be possible to gain a more complete picture of the factors influencing SWB.

Life satisfaction. The idea that life satisfaction is an important component of well-being is not new. As far back as the second century AD Marcus Aurelius wrote, "no man is happy who does not think himself so" (cited in Diener, 1984). More recently, numerous researchers have expounded the view that being satisfied with one's life in its totality is a core component of happiness. For example, Elizabeth Telfer (1980) defines happiness as "a state of being pleased with one's life as a whole" (pp. 8-9); Richard Brandt (1967) similarly writes that "in order to be happy it is necessary that one like … those parts of one's total life pattern and circumstances that one thinks are important" (pp. 413-14). Life satisfaction has also been demonstrated to be an important protective factor against psychological disorder. For example, Heisel and Flett (2004) found those who report higher levels of life satisfaction are significantly less likely to experience suicidal ideation. Suldo and Huebner (2004) found that youths who are more satisfied with their lives were more resilient in the face of stressful life events.

Measurement of SWB. SWB is typically evaluated with self-report measures. Scales such as the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) and the Scale of Positive and Negative Experience (SPANE; Diener, Wirtz, et al., 2010) are commonly used to assess the affective component of SWB. Both of these scales ask respondents to indicate how frequently they have recently experienced a range of positive and negative emotions such as cheerfulness and worthlessness. On the other hand, the Satisfaction with Life Scale (SWLS; Diener & Diener, 2009; Diener, Emmons, Larsen, & Griffin, 1985) is a popular choice for assessing life satisfaction and uses a Likert-scale, asking respondents questions rate their agreement with items such as "So far I have gotten the important things I want in my life" (Diener et al., 1985). Self-report assessments have been criticised. For instance, Kahneman (1999) argues against the use of retrospective self-report

questionnaires on the basis that people "do not generally know how happy they are" (p. 21), advocating instead for experience sampling methodologies (ESM) that can assess subjective states in real time; a measure he refers to as Objective Happiness. Nevertheless, self-report assessment in this domain still correlates with real world health outcomes (Diener, Pressman, Hunter, & Delgadillo-Chase, 2017). Accordingly, there is a general consensus among social scientists that people reflecting on their emotional states and the quality of their lives generally can convey important information about their levels of well-being.

What has the Hedonic Tradition Taught Us about the Conditions that Promote Happiness?

SWB research indicates that most individuals report themselves to be reasonably happy (Diener & Diener, 1996). Furthermore, these evaluations are relatively stable across time. Researchers investigating the stability of SWB have observed the 'self-sustaining' nature of both happiness and unhappiness, noting that individuals who report higher levels of SWB tend to interpret the same life events in a more positive way than those who are less happy (Lyubomirsky & Tucker, 1998). Personality factors also play a significant role in individuals' orientation towards happiness; those who score highly in extraversion and agreeableness on personality measures tend to report higher levels of SWB, while high levels of neuroticism are negatively correlated with SWB (DeNeve & Cooper, 1998; Diener, Oishi, & Lucas, 2003; Hayes & Joseph, 2003). Twin studies suggest an important genetic component to SWB, with some studies suggesting that as much as 80% of a person's happiness might be biologically determined (Caprara et al., 2009; Lykken & Tellegen, 1996). Conversely, factors such as level of education, wealth and marital status, which might intuitively be assumed to be important to happiness, contribute only a small portion of variance to reports of SWB over the long term (Diener et al., 2003).

Findings such as these support the set point theory of happiness, which asserts that individuals have a genetically determined baseline to which their happiness is disposed to return (Lucas, 2007). Also known as the hedonic treadmill (Brickman & Campbell, 1971), or hedonic adaptation, this theory is based upon the observation that, while individuals may react strongly to positive or negative life experiences in the short term, they soon adapt to the change in circumstances and return to their original level of happiness (Lucas, 2007). Set point theorists argue that inborn personality traits are the most significant factor in determining a person's happiness, with little else serving as a strong predictor of SWB (DeNeve & Cooper, 1998; Judge, Heller, & Mount, 2002). The implications of a happiness set point for efforts to improve well-being at the individual and societal level are thus immense (Lyubomirsky & Tucker, 1998), since the theory suggests that happiness remains relatively impervious to external events and interventions. However, increasingly, evidence has emerged challenging this idea. For example, Lucas (2007) outlined numerous methodological concerns casting doubt on the evidence investigating long-term affective change. He criticises such studies on the basis that most are not longitudinal in nature, limiting conclusions to cross-sectional differences, rather than changes over time. He also highlights the importance of demand-characteristics, particularly when participants know that they were recruited due to a particular positive or negative life experience. Additionally, people may not adapt to all circumstances. For example, those who are born with congenital disabilities (Mehnert, Krauss, Nadler, & Boyd, 1990) or individuals who suffer spinal cord injuries throughout the course of their life (Dijkers, 1997) tend to score lower on measures of SWB than comparable individuals without disabilities. Furthermore, ESM research investigating the relationship between individuals' use of time and their affective

experience suggests that hedonic adaptation may not occur as readily as indicated by retrospective self-report (Krueger, Kahneman, Schakade & Stone, 2009).

In Broaden and Build Theory, Fredrickson (2001) describes how positive emotion can influence well-being beyond the particular moment in which the emotion is experienced, by assisting people to mobilise psychological, physical and social resources (Fredrickson, 2004). For example: the experience of joy encourages approaching behaviour through which important social skills and connections can be developed; the experience of interest stimulates exploratory behaviours, which in turn promote the acquisition of knowledge and contribute to personal growth (Fredrickson, 1998). When experiencing positive emotion, individuals *broaden* their cognitive schemes and behaviours in ways that increase their effectiveness when undertaking creative, social and intellectual tasks. This in turn allows them to *build* personal resources that can have long-lasting benefits for their well-being (Fredrickson, 2004).

A final area of inquiry pertinent to the hedonic tradition is the study of differences in SWB between cultures and regions of the world (Tov & Diener, 2009; Veenhoven, 2009). Two major findings stand out as particularly important. The first involves differences in the average SWB of individuals in different nations. Economic factors appear to be important, with wealthier nations exhibiting higher levels of SWB than less wealthy nations overall (Diener & Biswas-Diener, 2002; Diener et al., 2003). These observed discrepancies could indicate that wealthy nations are better able to meet their citizens' basic needs, such as those for food, shelter and health services, and may also reflect better human rights and democratic agency. There is also evidence of cultural differences in the meaning individuals ascribe to the experience of positive and negative affect. For example, among some Asian cultures there tends to be an emphasis on negative affect when evaluating SWB, whereas

individuals from Western cultures tend to emphasise positive affect (Wirtz, Chiu, Diener, & Oishi, 2009).

The second finding relates to within-nation reports of SWB. In poor countries, data shows a high level of correlation between incremental increases in income and reported levels of happiness. Conversely, happiness has remained relatively constant over time in wealthy countries despite an increase in average income (Diener et al., 2003). Again, this discrepancy can likely be related to the satisfaction of basic needs. In poor countries, income gains allow residents to better afford amenities relevant to their health, safety and survival, whereas in wealthier countries, where these needs are generally being met, additional income facilitates the purchase of non-essential luxuries to enhance lifestyle (Veenhoven, 1991, 2009). Together these findings appear to highlight the importance of meeting a person's physiological and apparent security needs in order to promote well-being.

Meaningfulness

Eudaimonic theories commonly emphasise personal growth and meaning. Although colloquial questions regarding the meaning of life often imply a singular answer, empirically there are multiple sources from which individuals derive meaning, such as their relationships, occupation, religious beliefs, and personal interests (Emmons, 1997). Baumeister and Vohs (2002) discuss meaning as an important aspect of the way in which people make sense of the unpredictable nature of the world. They assert that, like all animals, humans require stability as one of their basic needs and that in volatile circumstances "meaning can be regarded as one of humanity's tools for imposing stability on life" (p. 609). An example relevant to the current political climate in Australia is the institution of marriage. Baumeister and Vohs point out that, while marriage does not change anything on the biological or molecular level, the meaning we apply to it provides stability (such as outlining who

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is permitted to engage in sexual relations with whom), and this creates a stable contract for defining the connection between two people. This demonstrates that the meaning people ascribe to situations can have an important impact upon their sense of stability and security.

In circumstances of adversity, such as suffering a significant loss or trauma, or the experience of poor health, finding meaning can also enable individuals to reflect upon their situation in such a way as to promote positive psychological functioning and protect them from the detrimental effects of despair (Bauer, McAdams, & Pals, 2008). To illustrate, consider how a person undergoing an unwanted divorce may construct a narrative to see the opportunity for personal growth and development as a worthwhile outcome of the pain and suffering they experience. In this way, through the process of meaning-making, "purpose in life and personal growth are not contributors to, but in fact defining features of positive mental health" (Ryff & Singer, 1998, p. 216). In this respect, research has shown that the process of continually integrating ever more complex levels of meaning into one's life contributes to well-being by promoting a greater sense of fulfillment and personal satisfaction (Bauer, McAdams, & Sakaeda, 2005; King, 2001; Pals, 2006).

Baumeister (1991) identifies four domains of life in which people are motivated to find meaning. The first is the need for *purpose*. Baumeister defines purpose as an ability to draw a connection between current events and future outcomes, in terms of achieving concrete goals or a sense of personal fulfillment. The second is the need for *values* from which a person can derive a sense of that which is good and positive in life. Values also provide the basis of an individual's moral compass to assist them in making decisions about the 'right' course of action (Baumeister & Vohs, 2002). The third is the need for a sense of *efficacy*, which is a sense that a person can affect meaningful change through their efforts. The fourth

need is *self-worth*, which is a person's belief that they are good and worthwhile. A person can pursue self-worth individually through comparing themselves favourably to others, or collectively through their belonging to a group to which they attribute an esteemed status (Wood, 1989). If people's need for meaning in each of these four domains is met, then they are likely to report that their lives are very meaningful (Bauer et al., 2008; Davis, Nolen-Hoeksema, & Larson, 1998).

Flow

A construct related to meaning is flow. An important aspect of a meaningfully engaged life is the ability to master and enjoy challenges (Csikszentmihalyi, 1997, 2014). After becoming interested in the state of 'immersion' that artists often report while working, Csikszentmihalyi discovered that many people experience a sense of profound satisfaction when they become absorbed in a challenging activity that demands recruitment of their creative skills and abilities (Csikszentmihalyi, 1990). He termed this state 'flow' and described it as an unselfconscious sense of focused and relaxed concentration during which time appears to pass quickly (Csikszentmihalyi & Rathunde, 1993). The application of the flow state has been studied in a variety of fields, most prominently science and the arts (Csikszentmihalyi, 1996; Perry, 1999), education (Csikszentmihalyi, 1997) and sport (Jackson, 1996), demonstrating its consistency across different types of activity as well as cultural, socioeconomic, age, and gender lines. Longitudinal research has also shown that the mastery of daily life challenges may act as a protective factor against undesirable outcomes such as juvenile delinquency (Schmidt, 2000, cited in Nakamura & Csikszentmihalyi, 2014). The quality of flow experiences correlates positively with positive affect and life satisfaction (Collins, Sarkisian, & Winner, 2009) and low negative affect (Rogatko, 2009). With respect to meaning, Nakamura and Csikszentmihalyi (2014) maintain that the most important contribution of flow to quality of life is its capacity for

"endowing momentary experience with value" (p. 259).

Psychological Needs

Over the last 80 years, numerous lines of enquiry have supported the notion that humans have basic needs that are important to optimal functioning (Tay & Diener, 2011). Many of these ideas are influenced by the pioneering work of Murray (1938) and Maslow (1943). More recently, Sheldon, Elliot, Kim, and Kasser (2001) argue that the concept of psychological needs has much to add to investigation and understandings of well-being and human behaviour. They propose that needs-based theories provide a platform for exploring the genetic basis underpinning a diversity of behavioural expressions and strategies. They assert that identification of needs allows for interventions to be developed that more directly target human thriving. Furthermore, they state that theories of psychological needs provide a framework for the unification of different fields of psychology.

Ryan (1995) proposes two approaches by which concepts of psychological needs have typically been utilised in consideration of human functioning. The first approach is to view psychological needs as a motivating force. According to this perspective, psychological needs drive wants, expectations, and desires in a similar fashion to the manner in which biological needs, such as food and sleep, drive appetites and urges. Perhaps the most famous proponent of this approach is Maslow, whose oft-cited "hierarchy of needs" is actually a theory about what motivates human behaviour (Maslow, 1943). The second approach likens psychological needs to nutriments that are necessary to the promotion of optimal well-being within a person. Equating psychological needs with nutriments implies that people are unable to thrive in the absence of need satisfaction, much as plant health cannot be maximised without the provision of the correct nutrients (Vansteenkiste & Ryan, 2013). Although the concepts underpinning these two

approaches are not mutually exclusive, the present discussion adopts the conceptualisation advocated by Sheldon, Cheng, and Hilpert (2011), which views psychological needs not as motives, but requirements that are innate rather than acquired. Additionally, although the extent and expression of these needs can vary depending upon individual and cultural factors, they are seen as essentially universal, rather than individually or culturally determined.

Such needs are nevertheless related to motivation. For instance, Ryan and Deci (2000) define a basic need, whether physiological or psychological, as an "energising state" (p. 74), satisfaction of which contributes to health and well-being, while the absence of which results in poor health and pathology. However, the emphasis is on the outcomes of meeting or not meeting the need. They propose that need satisfaction throughout the lifespan is conducive to a continuing state of well-being, psychological stability, and 'eudaimonia'. In consideration of the previously discussed philosophical views of well-being, it becomes clear that this definition of psychological needs is aligned with the eudaimonic tradition in psychology.

Limitations in space prohibit an extensive overview of all needs-based theories. For present purposes however, this discussion will focus upon the four major theories that have arguably been most influential in this field, certainly with respect to the amount of research they have generated. As will be seen, there is considerable overlap concerning the postulated needs from different theories.

Maslow's Theory of Human Motivation – 1943; 1970. Maslow's theory, first outlined in his landmark 1943 paper, has transcended academia to become one of the most widely known and "cognitively contagious" (Kenrick, Griskevicius, Neuberg, & Schaller, 2010, p. 292) psychological theories of all time (Shahrawat & Shahrawat, 2017). The theory proposes five needs, which Maslow conceptualises as innate and universal. These are physiological needs, safety needs, love/belongingness

needs, esteem needs, and self-actualisation needs. He later expanded his theory to include cognitive needs, including the desire to know and understand, aesthetic needs, including the appreciation of beauty, and transcendence needs, which involve engaging with needs beyond the self (Maslow, 1964; Maslow, Frager, Fadiman, McReynolds, & Cox, 1970).

The model Maslow proposed is popularly interpreted as a hierarchy, in which lower-order needs must be met before individuals are motivated to pursue higher-order needs, despite research indicating that this structure receives limited and inconsistent support (Sheldon et al., 2001; Soper, Milford, & Rosenthal, 1995; Tay & Diener, 2011). Indeed, Maslow himself expressed reservations about interpreting the model in this fashion (Maslow, 1943). Kenrick et al. (2010) re-evaluated the structure of Maslow's hierarchy and concluded that much of the theory is broadly supported when considered from the perspective of evolutionary biology. In particular, they argue that the proposed domains of physiological, safety, esteem and belongingness needs are functionally distinct motivational systems. However, they are critical of Maslow's proposal of self-actualisation as a functionally distinct need, suggesting instead that this is subsumed within esteem and belongingness needs. Perhaps the most significant distinction between Maslow's theory and other needs-based theories is its acknowledgement of the basic human requirements for physical and safety needs. Research by Tay and Diener (2011) provides evidence supporting the importance of the basic needs, while Sirgy and Wu (2009) outline the importance in considering these needs when determining the conditions that promote subjective well-being.

Seligman's Authentic Happiness Theory and PERMA theory – 2002; 2012. In 2002, Seligman put forward a tripartite theory incorporating three orientations towards happiness. Authentic Happiness Theory (AHT) posits that a

balanced, happy life involves elements of pleasure, engagement and meaning. Pleasure can be likened to the hedonic concept of positive affect and relates to the pursuit of pleasant emotions. Engagement is about flow: absorbing oneself in challenging activity. Seligman emphasises that, unlike pleasure, there are no shortcuts to engagement; one must develop and utilise personal strengths, talents, and virtues to achieve a flow state. Meaning is the final element of happiness in the theory and refers to finding a sense of purpose by recruiting strengths in service of something bigger than oneself. Multiple studies have supported the AHT, demonstrating that orientations towards each element of happiness are correlated with life satisfaction, while their lack is predictive of low life satisfaction (Peterson et al., 2005; Peterson, Ruch, Beermann, Park, & Seligman, 2007; Vella-Brodrick, Park, & Peterson, 2009). The three orientations also predict life satisfaction above and beyond variables related to personality, or socio-demographic factors, as well as correlating with more objective well-being indicators, such as occupational and educational attainment (Schueller & Seligman, 2010). The contribution of the three orientations to life satisfaction is not equal. Orientations towards engagement and meaning are better predictors of life satisfaction than pursuit of pleasure (Peterson et al., 2005; Vella-Brodrick et al., 2009). In fact, studies from different world regions and cultures have found the correlation between pleasure and life satisfaction to be very weak and in some cases even negative (Chan, 2009; Chen, Tsai, & Chen, 2010; Proyer, Annen, Eggimann, Schneider, & Ruch, 2012; Schueller & Seligman, 2010; Vella-Brodrick et al., 2009).

Ten years after the publication of AHT, Seligman published a book in which he criticised his original theory on the basis that it was too narrow and excluded categories that are important to well-being (Seligman, 2012). He argued that well-being should exceed hedonic measures and take into account more than just life

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satisfaction, which he views as too reliant upon the mood of respondents. Well-being Theory (WBT), on the other hand, includes two new categories, 'accomplishment' and 'positive relationships', and is summarised by the acronym PERMA: pleasure, engagement, relationships, meaning and achievement. Pleasure, engagement and meaning are equivalent between AHT and WBT. Accomplishment involves the pursuit of achievement, success and mastery. These pursuits are considered important both as outcomes and as processes. Seligman argues that people are motivated to pursue accomplishment even if it does not bring enjoyment or meaning to their lives. Relationships refers to a tendency towards forming connections with others: an impulse Seligman sees as universal and inbuilt through evolutionarily forces. In another point of divergence from AHT, rather than viewing happiness as something to be achieved through the PERMA factors, in WBT Seligman reconceptualised well-being as defined by these factors. In this way, WBT moves away from AHT's focus on hedonia towards a eudaimonic conception of well-being by emphasising the criteria humans need to meet in order to flourish at both the individual and societal level. While Seligman's theory is not strictly speaking a needs-based theory, and instead conceptualised as a guide to different pathways by which one may attain happiness and well-being, the categories of positive relations, accomplishment and meaning/purpose may be interpreted as psychological needs (Franklin, 2018).

Deci and Ryan's Self-Determination Theory – 2000. The concept that originally inspired development of self-determination theory came from research investigating human motivation (Deci & Ryan, 1985; Deci, 1971, 1972a, 1972b; Deci & Cascio, 1972; Deci & Ryan, 2000). Deci and Ryan departed from established 'additive' theories of motivation (Ferster & Skinner, 1957; Oliver, 1974) to hypothesise that a person's drive to perform a particular behaviour can be either autonomous or controlled. That is, it can arise either from an intrinsic desire to act in

a way that serves one's own values and goals (autonomous), or it can be imposed by external pressures and obligations (controlled). Deci and Ryan observed that individuals who were acting according to autonomous motivation were more likely to persist with their behaviours in the absence of external reinforcement. In other words, their behaviour was self-determined. Self-determination theory expands upon this idea to identify additional conditions that are needed to support people's innate inclinations towards motivation, growth and well-being. Specifically, the theory proposes that humans have an innate need for feelings of autonomy, competence and relatedness to others and that socio-cultural conditions conducive to fulfillment of these needs support people's inherent tendency to thrive (Deci & Ryan, 2000).

Autonomy involves a person's sense that the activities they engage in, and the goals they strive towards, are in accordance with their own intrinsic choices and interests. Competence is defined as the feeling that one has the capability and effectiveness to be successful in pursuit of their goals. Relatedness refers to a sense of closeness and belonging with others and is facilitated by secure bonds and supportive relationships with other people. Deci and Ryan (2000, 2008a) assert that people can meet these needs through various behaviours, which may differ according to the individual or the cultural context. However, they further argue that satisfaction of the needs is important for health and well-being in all individuals, irrespective of cultural context (Deci & Ryan, 2000). This notion received support in a study by Sheldon, Ryan, and Reis (1996) who found that satisfaction of these needs was predictive of higher levels of well-being. Similarly, (Baard, Deci, & Ryan, 2004) found that need satisfaction was associated with higher levels of positive affect and general health, while frustration of the needs was associated with increased negative affect and pathology. Deci and Ryan (2000) contend that in order to maximise well-being, it is necessary that all three needs are satisfied; fulfillment of one or two of the needs is

insufficient for optimal psychological functioning. However, they also postulate the existence of further constructs additional to the three needs proposed within the SDT that are yet to be empirically identified, in acknowledgment that the theory is not necessarily a comprehensive account of all that is required to promote well-being (Ryan, Huta, & Deci, 2008).

SDT has generated significant research interest spanning fields as diverse as education, interpersonal relationships, sport science, parenting practices, and well-being (Deci & Ryan, 2008a; Deci et al., 2001; Kasser, 2003; Williams, Hedberg, Cox, & Deci, 2000). The theory has also been influential in the development of therapeutic techniques and principles, particularly in relation to the importance of autonomy in promoting positive therapeutic outcomes (Deci & Ryan, 2008a).

Ryff's Psychological Well-Being Theory (PWB) - 1989; 1995.
Psychological well-being theory grew from Ryff and colleagues' investigations into the factors that promote ongoing health and vitality through the aging process (Ryff & Keyes, 1995a; Ryff & Singer, 2008). Established theories of well-being were largely lacking in any substantive theoretical basis and she criticised the notion that well-being should be understood only in terms of its contribution to affective experience and life satisfaction (Ryff, 1989). She also expressed concern that established theories did not adequately define psychological wellness, proposing that this concept is best comprehended from a eudaimonic perspective (Ryff, 1989; Ryff & Keyes, 1995a; Ryff & Singer, 1998; Ryff & Singer, 2008). Through drawing together common themes and recurring findings in the well-being literature, Ryff identified six distinct dimensions of well-being, each contributing uniquely to positive psychological functioning: self-acceptance, positive relationships with others, environmental mastery, autonomy, purpose in life and personal growth.

Self-acceptance refers to positive feelings and attitudes about the self. Positive

relationships with others involves the presence of supportive and fulfilling interpersonal relationships in one's life. Environmental mastery denotes one's competence at making use of the opportunities present within one's circumstances. Autonomy, as already mentioned, is the ability to act according to one's intrinsic wishes and desires. Purpose in life relates to whether a person has a sense of direction and meaning in life and is working towards their goals. Personal growth is a sense of continued growth, development, and improvement as a person (Keyes, Shmotkin, & Ryff, 2002; Ryff & Keyes, 1995a).

Several versions of a scale measuring PWB have been developed ranging from a 120 item to 18-item versions. Ryff's model has been extensively studied and demonstrates high levels of convergent validity with measures of subjective well-being and mental health outcomes (Ryff, 1989; Ryff & Keyes, 1995a; Ryff, Lee, Essex, & Schmutte, 1994; Ryff & Singer, 1998). The model's factor structure has also received support across samples from diverse cultural backgrounds (Cheng & Chan, 2005; Gallagher et al., 2009; Lindfors, Berntsson, & Lundberg, 2006; van Dierendonck, Díaz, Rodríguez-Carvajal, Blanco, & Moreno-Jiménez, 2008). Others have argued that the six factors are not as distinct as the theory suggests, pointing to analyses showing overlap between the proposed constructs (Abbott, Ploubidis, Huppert, Kuh, & Croudace, 2010; Kafka & Kozma, 2002; Springer, Hauser, & Freese, 2006). However, Ryff has dismissed these findings, suggesting that these inconsistencies reflect the use of short versions of her questionnaire, rather that problems with the actual model itself (Ryff, 2014).

There is overlap between many of the needs domains presented in the above-mentioned needs theories. For example, all of the theories emphasise the importance of positive relationships and meaningful engagement with life. Additionally, with the exception of PERMA theory, they consider positive self-regard to be a fundamental

human need. Although the precise definition and formulation of the needs is different within each theory, there is a broad equivalence between many categories. Figure 1 below provides a comparison of needs domains from the four theories and illustrates that no one theory encapsulates all of the domains suggested within the others.

Maslow Hierarchy of Needs	Seligman PERMA	Ryff Psychological Well-Being	Deci & Ryan Self-Determination Theory
Self-Actualisation	**Accomplishment**	Environmental Mastery	Competence
Belonging	**Positive Relationships**	**Positive Relations**	**Relatedness**
Esteem		**Self-Acceptance + Environmental Mastery**	**Competence** Coherence sense of self
Self-Actualisation	**Engagement Meaning**	**Purpose in Life + Personal Growth**	**Autonomy** (free choice or control) Intrinsic Motivation
Safety			
Physiological			Physiological
	Positive Emotion	**Autonomy** (social independence or self-determination)	Autonomy support

Figure 1. Comparison of needs-based theories. Adapted from Franklin (2018).

Summary

This chapter reviewed the major concepts and theories that have contributed to the field of positive psychology and current understandings of well-being. An important point to take from this review is that the field is defined by a diversity of different approaches that are difficult to integrate in an overarching conception of well-being; see Lambert et al., (2015) for a comprehensive review. The major theories related to needs were also addressed. As shown, there is considerable overlap between

the theories concerning basic psychological needs, with no one theory encapsulating all of the needs that have been identified as important. The next chapter provides an overview of evolutionary psychology to give context to the principles that form the basis of TST, which is presented in Chapter 3.

Chapter 2

Evolutionary Psychology and Well-being

Though the positive psychology movement has been successful in advancing understandings of the factors contributing to human happiness and well-being, a number of problems complicate this field. Such problems include diverse theoretical approaches, inconsistency in terminology, and disagreement regarding how the founding principles should be defined and measured (Dodge et al., 2012; Forgeard et al., 2011; Thomas, 2009). In fact, these criticisms have been leveled against psychology as a discipline more broadly (Goertzen, 2008; Henriques, 2003, 2011; Mandler, 2011; Sternberg & Grigorenko, 2001). What is lacking is a common conceptual framework to integrate the disparate approaches into a unified methodology. Evolutionary psychology has been proposed as such a framework (Buss, 2009; Caporael, 2001; Nettle, 2009; Marsh & Boag, 2013; Mesoudi, 2009; Shackelford & Liddle, 2014; Tooby & Cosmides, 2007).

Evolutionary theory provides explanation for the vast diversity and myriad complex adaptations that exist in the plant and animal kingdoms. While it is beyond the scope of this discussion to review the extensive literature on general evolutionary theory (for a comprehensive introduction, see Coyne, 2010; Dawkins, 2009; Zimmer, 2011), there is widespread acceptance within the scientific community that environmental pressures shape the development of organisms over many successive generations by selecting those variations which confer an adaptive advantage to the organisms' survival and reproductive success (Carroll, 2006; Gould, 2002; Miller, Scott, & Okamoto, 2006). Yet, historically, the psychological sciences have largely overlooked the relevance of these developments in the formulation of their theoretical approaches (Pinker, 2005; Tooby & Cosmides, 2005). The emergence of evolutionary psychology consequently marks a long-overdue effort to use evolutionary theory as a

foundation for understanding how the adaptive pressures faced by our ancestors over millennia contributed towards the complex mental processes and behaviours that comprise human nature today (Buss, 2015). By implication, whenever a predisposition towards certain emotional, mental or behavioural characteristics can be shown to have an innate component, it is reasonable to expect that evolutionary psychology may enhance our understanding of that phenomenon (Buss, 2015). In this way, rather than positioning itself as a sub-discipline of psychology, evolutionary psychology is best conceived as an overarching approach to psychology as a discipline more broadly.

Evolutionary psychology is not without its critics, however, and there is heated debate within the literature challenging many of the discipline's central tenets (see Rose & Rose, 2010 for a detailed summary). Much criticism revolves around the argument that evolutionary psychology bases many of its hypotheses upon assumptions that are inherently unfalsifiable, due to uncertainty about ancestral conditions (Plotkin, 2008). While it is not possible to address these arguments here, proponents of the field argue that such criticisms arise from misunderstandings and misconceptions (Shackelford & Liddle, 2014) and a number of compelling counter-arguments already exist championing the credibility of the evolutionary psychology approach (Confer et al., 2010; Geher, 2006; Kurzban, 2002; Sell, Hagen, Cosmides, & Tooby, 2003). The present chapter briefly outlines three general principles of evolutionary psychology, before discussing how these might be applied to our understandings of emotion, and happiness and well-being specifically.

General Principles of Evolutionary Psychology

Evolved psychological mechanisms/modules. In evolutionary theory, the term 'adaptation' refers to any feature of an organism that has been selected for over successive generations as a function of the adaptive advantage it conferred to the

survival and reproductive success of that organism's ancestors in the context of the environmental pressures they faced (Tooby & Cosmides, 2005). Evolutionary psychology purports that the brain, like all organs, has design features that are a product of adaptations. Behaviours and mental processes that are typical in a particular species are presumed likely to be the product of, or influenced by, adaptations shaped through the forces of natural selection over millions of years of evolution (Buss, 2015). These adaptations, known as Evolved Psychological Mechanisms (EPMs), also referred to as modules, are thought to have facilitated the survival and reproductive success of the organism (and/or its genetic relatives), thus increasing the probability that the EPM will be passed on to subsequent generations (Nesse, 2008).

David Buss (2015) outlines the properties that define an EPM:

1. An EPM exists in the form that it does because it solved a specific problem of survival or reproduction recurrently over evolutionary history;

2. An EPM is designed to take in only a narrow slice of information;

3. The input of an EPM tells an organism the particular adaptive problem it is facing;

4. The input of an EPM is transformed through decision rules into output;

5. The output of an EPM can be physiological activity, information to other psychological mechanisms, or manifest behaviours;

6. The output of an EPM is directed toward the solution to a specific adaptive problem (Buss, 2015, pp. 48-50).

EPMs are thought to be typically activated in response to a specific stimulus, prompting a decision process usually guided by an if/then rule (Buss, 2000). For example *if* a dangerous fall is possible, *then* act with caution. This EPM would instill an organism with an innate fear of heights, such that it is likely to avoid, or exhibit

caution in, situations whereby a dangerous fall is possible, thus reducing the likelihood of death or injury in such circumstances. When such EPMs are prevalent in a particular species, they are commonly referred to as instincts (Buss, 2015). An instinct is an inherent tendency for an organism to perform a particular behaviour in response to a specific stimulus. In human infants, instincts such as the reflex to hold one's breath when submerged in water, or to suckle a mother's breast serve similar adaptive functions in aiding the chances of survival. It is important to note, however, that not all features of an organism are adaptations. Gould and Lewontin (1979) coined the term 'spandrel' to refer to phenotypic properties of an organism that originally arose not to serve an adaptive function, but rather as byproducts of other adaptations.

While not all features of the brain are EPMs, evolutionary psychologists contend that the human brain is divided into a large number of domain-specific EPMs (Buss, 2015; Shackelford & Liddle, 2014). In this view, contrary to the domain-general hypothesis, the brain did not develop as a single, cohesive structure to perform a wide range of functions within the environment more generally (Barrett & Kurzban, 2006; Johnson, 2011). Rather, it is modular in nature, each module having developed as a solution to unique, recurring problems in the evolutionary environment (Cosmides & Tooby, 1994; Nesse, 2008; Philipson, 2002; Shackelford & Liddle, 2014). While the concept of modular EPMs provides a useful theoretical basis by which to hypothesise about the adaptive function of different mental processes and behaviors, we are nevertheless far from a thorough understanding of the anatomy and neurochemistry underlying modules. Furthermore, from a neurological perspective, modules are not discrete structures residing within the brain. Instead, the neural circuitry comprising a particular module may be dispersed throughout the brain, and the nerve cells involved in one module may also be active in a number of different

modules (Grinde, 2012). In this sense, from a conceptual standpoint, it is more useful to think of modules as "units of selection rather than of anatomy" (Grinde, 2009, p. 589). In other words, modules, or EPMS, are best conceptualised as neurological programs that have been selected for their adaptive influence on an organism's cognitive, behavioural, and affective responses, rather than physical circuitry of the brain.

Environment of evolutionary adaptation. To understand how and why a particular EPM evolved, it is necessary to consider the environment in which this occurred. This is, of course, difficult since EPMs are expected to arise as a result of adaptation to both ancient and changing environments. Evolutionary psychologists must make defensible assumptions based on both data from the archaeological records and observations regarding the behaviours and structures of modern hunter-gatherer societies to estimate the likely selection pressures faced by our ancestors (Shackelford & Liddle, 2014). The environment in which these pressures were imposed is known as the Environment of Evolutionary Adaptation (EEA). Buss defines the EEA as "the statistical composite of selection pressures that occurred during an adaptation's period of evolution responsible for producing the adaptation" (Buss, 2015, p. 39). In this context, the term EEA applies broadly to reflect all of the conditions and circumstances that have selected for particular adaptations. It is important to note here, however, that both physical and non-physical environments can apply selection pressures. For instance, the social environment (social structures and complex cultural factors related to the social dynamics of our ancestors' communities) was presumably pertinent to our ancestors' success or otherwise, in passing their genes on to subsequent generations (Grinde, 2009).

It should therefore be clear that the EEA refers to more than just a single environment, or a particular historic period. Human genes were selected in a vast

array of conditions and have heritage in ancestral species predating humans by millions of years (Boyd & Silk, 2014). For example, humans share certain brain structures relevant to the processing of emotion in common with species with which we parted ways in our evolutionary lineage long ago (Panksepp, 2004). Regardless, the human EEA refers typically to the environment of the middle-to-upper Paleolithic period, which encompasses the time from the first emergence of modern humans (around 200,000 years ago) up until the advent of agriculture saw a change in lifestyle and community structure (around 15,000 years ago).

Mismatch and discord. The third principle of evolutionary psychology to be discussed encompasses the concepts of mismatch and discord. Mismatch refers to a situation whereby there is a disconnect between the conditions in which an organism lives and those to which it is optimally adapted (Brenner et al., 2015; Buss, 2000; Eaton, Konner, & Shostak, 1988; Pani, 2000; Sternberg, 2001). Mismatches are often associated with the experience of stress or strain, which refer to the "detrimental effects of living under suboptimal conditions" (Grinde, 2002, p. 334). To illustrate, consider the discomfort an animal adapted to cold climates may experience if moved to a warm climate environment. However, not all mismatches are necessarily deleterious to well-being. For example, living in a secure and properly insulated house presumably produces less strain than being exposed to variable environmental conditions such as those our ancestors were adapted to. Therefore, the term 'discord' has been used to describe conditions in which a mismatch is deleterious to well-being (Grinde, 2002). Discord situations are often used in the field of evolutionary (Darwinian) medicine to explain the occurrence of common physical health issues (Gluckman & Hanson, 2006; Taylor, 2015). For instance, the high incidence of myopia (nearsightedness) in industrialised societies (Saw, 2003) may arise partly from the fact that, with the advent of electric light, humans are exposed to bright light

sources for more hours each day than they are adapted to, promoting discord with the development of healthy visual function in some people (Bock & Widdows, 2008).

It stands to reason that environments that are discordant with the conditions to which organisms are adapted can impact upon mental well-being as well as physical well-being. This notion is supported by animal research which demonstrates that when their living conditions and/or behavioural routines deviate from those they encounter in their natural environment, animals' physical health and mental constitution can be negatively impacted (Moberg & Mench, 2000). One would expect therefore that human happiness would be inversely correlated with the presence of discord situations, as they are disruptive to the physiological and psychological needs to which humans are adapted (Grinde, 2002).

Evolutionary Psychology and Emotion

Through the process of natural selection, increasingly complex adaptive mechanisms evolved (Adami, Ofria, & Collier, 2000). One such mechanism involves emotional brain circuitry (Parr & Waller, 2006). The emergence of emotional brain circuitry, known as 'mood modules' (Grinde, 2012) conferred an adaptive advantage by allowing animals to be more flexible in their response to environmental challenges. In simple terms, this is achieved by invoking a subjective sense of reward or punishment in the brain. 'Brain rewards' and 'brain punishments' (Ková č, 2012) provide an advanced mechanism by which evolution enabled individuals to exploit opportunities and avoid perils with a greater sophistication than would otherwise have been possible (Blaukopf & DiGirolamo, 2007; Grinde, 2012; Panksepp, 2004). Brain reward circuits appear to be divided into two distinct neural systems: 'wanting', which serves to stimulate the affective salience of reward anticipation in order to motivate individuals to act in the interests of gaining the reward; and 'liking', which mediates the subjective pleasure of actually experiencing a reward (Robinson &

Berridge, 1993).

Brain modules with the capacity to experience primitive emotion likely first emerged approximately 300 million years ago among the early amniotes; a group of egg-laying, reptilian vertebrates (Cabanac, Cabanac, & Parent, 2009). Prior to this, nervous systems, presumably similar to those still present in modern-day nematodes (microscopic, parasitic roundworms), existed with the capacity for preference and aversion learning, promoting adaptive towards and away-from behaviour (Århem, Lindahl, Manger, & Butler, 2008; Chase & Koelle, 2007; Nieto-Fernandez et al., 2009). This principle of attraction and aversion is still a key feature of the most advanced brains in the animal kingdom, whose primary evolutionary purpose is to direct the organism's attention towards opportunity and away from peril (Rial et al., 2008). To achieve this, the brain modules involved in emotion are wired to reward those behaviours that tend to produce favourable outcomes for the genes with positive affective experiences, while the reverse is true for behaviours that produce detrimental outcomes (Kringelbach & Berridge, 2009; Leknes & Tracey, 2008; Russo & Nestler, 2013). Happiness and perhaps even consciousness may be a byproduct of these mood modules (Grinde, 2013).

The Evolutionary Advantage of Happiness

Positive and negative affective sensations may have contributed towards human adaptation to a greater degree than they have in other species (Grinde 2002). The increased cognitive ability that humans possess enables a greater capacity for self-reflection and agency in our decision-making. In other words, human behaviour is driven less by instinctive programing than that of any other species. Despite the advantages of these abilities, from the perspective of the genes, an increase in apparent 'free will' is a mixed blessing as humans may choose to act in ways that are contrary to their genetic interests. As Grinde (2002) states, "while an ant will always

follow the 'will of the genes', a human may choose to take actions that are not in the interests of his or her genes" (pp. 338-339). Therefore, it seems probable that evolutionary pressures have led to humans experiencing mental states involving a higher intensity of brain rewards and punishments than other species, as this allows the genes to exert a greater level of influence over behaviour.

Of course, evolutionary processes do not select explicitly for mental states; rather they select for gene survival. Therefore, the selection of particular mental states occurs only if they confer an adaptive advantage. The adaptive advantage of some mental states is obvious. For example, those in an anxious state of mind are motivated to avoid situations that they find threatening, which may prevent behaviours that place them in harmful or dangerous situations (Bateson, Brilot, & Nettle, 2011; Price, 2013). Similarly, the emotion of jealousy may motivate individuals to act in such a way as to protect their romantic and/or sexual interests, which has clear implications for gene propagation (Buss & Haselton, 2005). Other mental states are less obvious in their adaptive purpose. For example, the debilitating nature of sadness and depression might intuitively appear detrimental to adaptive fitness. Perhaps these mood states may have social benefits, by communicating a need for support and discouraging aggression from others during times when a person has suffered a setback (Price, 1998; Price, Sloman, Gardner, Gilbert, & Rohde, 1994). These examples serve to illustrate the adaptive function that mental states can serve.

Happiness and positive emotions also serve adaptive functions (Grinde, 2002). Compared to those in a depressed mood, happy people are more likely to engage in behaviours such as eating, completing tasks, engaging in sexual activity, and socialising with friends (Fredrickson, 2001; Nesse & Ellsworth, 2009). These behaviours, in addition to being enjoyable for the individual, are evolutionarily advantageous. Therefore, while there is an evolutionary purpose to negative emotion,

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such as anxiety and sadness in the proper context, in the absence of such circumstances it is reasonable to suppose that it would be in the genes' interest that their carrier possess a default state of happiness (Grinde, 2012, 2016). The notion of happiness as a default state is supported by research indicating that, in general, people tend to be happy and satisfied with their lives and typically return to this state even after adverse events (Diener & Diener, 1996; Lykken, 1999, 2000).

The above considerations raise interesting questions regarding the environmental conditions that promote positive and negative emotional states. Mismatch theory suggests that negative emotional states result when there is discord between one's environment and evolved nature, and the absence of discord facilitates healthy psychological functioning and positive emotional states (Buss, 2000; Grinde, 2002; Röckner, 2011). One way to think about discord is that it involves situations that thwart individuals' ability to fulfill the innate needs necessary for optimal functioning (Grinde, 2002). However, there has been relatively little empirical investigation into the nature of human needs from an evolutionary point of view (Franklin, 2018).

Summary

This chapter outlined three basic principles of evolutionary psychology, and discussed how these principles relate to the development of emotion and psychological well-being. Of particular importance is the notion that discord situations are associated with negative psychological functioning because they undermine peoples' ability to fulfill their innate needs. These principles provide context around the theoretical basis from which TST was derived. The theory is explored in detail in the following chapter. As discussed, few studies have empirically investigated the nature of human needs from an evolutionary perspective. The following chapter describes TST, which marks an attempt to address this

shortcoming.

Chapter 3

Thrive and Survive Theory

As outlined earlier, numerous theories claim that humans have universal, innate needs underlying their well-being and there is considerable overlap between the needs these theories identify. However, these needs-based theories lack a clear theoretical basis from which the needs are derived (Franklin, 2018). This limitation makes it a difficult and imprecise exercise to integrate the concepts and insights from different theories within the field. To address this, John Franklin proposed that evolutionary psychology provides the ideal basis from which to develop a framework for understanding the common needs and conditions that promote human well-being (Franklin, 2013). In this view, human needs relate to factors that were conducive to survival, prosperity and reproductive success in our ancestors' EEA. Furthermore, well-being depends largely upon people's ability to meet these needs.

Franklin's Thrive and Survive Theory (TST) takes the above premise as its starting point (Franklin, 2018). TST arises from the idea that humans, like all species, are driven by a biological impulse to pass their genes on to the next generation. Humans are unique in that ecological flexibility requires a more sophisticated set of adaptations to navigate the complex and diverse physical and social environments they inhabit. The theory posits that, at its most basic level, all human behaviour is motivated by a drive obtain rewards. This position relates to the neo-behaviorist notion of reinforcement, in which organisms are more likely to repeat actions that lead to positive outcomes and avoid actions that lead to aversive outcomes (Chiew & Braver, 2011; Skinner, 1981). TST emphasises the reinforcing value of the affective experiences promoted by positive and negative outcomes. In this way, habits of conduct and behaviour are shaped according to whether the feelings they produce are positive or negative. In evolutionary terms, there are two benefits to any system that

encourages the pursuit of positive emotion. Firstly, it encourages behaviours that are conducive to beneficial outcomes (Hill & Buss, 2008). Secondly, when a positive emotion is experienced, this mood state encourages other behaviours that are adaptive, such as increased social engagement (Fredrickson, 2001).

TST assumes that outcomes are reinforcing (produce positive feelings) if they directly or indirectly satisfy a collection of innate needs (Franklin, 2018). In turn, need satisfaction is understood to reliably improve well-being, if achieved in a sustained and consistent manner. The theory also makes an important distinction between wants/expectations and needs. While 'needs' are assumed to be innate and common to all people, 'wants' are variable and individually determined. For example, the need for food and nourishment is universal, however the preference for a particular form of cuisine reflects individual preferences. Wants and expectations arise from either the conscious or unconscious belief that their satisfaction will fulfill needs. However such beliefs can be mistaken, as discussed in more detail below. Hence, the satisfaction of wants does not reliably lead to need satisfaction. For these reasons, TST argues that a focus upon needs, rather than wants, must play a central role in understanding the determinants of happiness and well-being. TST additionally claims that the desire to satisfy innate psychological needs arises from their benefit in enhancing evolutionary fitness.

Franklin proposes six need categories divided into two classifications: Survive needs and Thrive needs (Franklin, 2018). The Survive needs are important to physiological survival and comprise Physical needs (e.g. food, water, shelter and health) and Security needs (e.g. safety, stability, predictability and secure attachment). Survive needs are assumed to be largely common to all higher-order life forms. Each need category forms a collection of singular needs that are similar in nature and function. In non-human species, Survive needs tend to be largely instinctual in nature,

whereas in humans they manifest through a more flexible set of genetic and behavioural adaptations (Aunger, 2015).

Both of these need categories may be considered broadly equivalent to the Physiological and Safety needs outlined in Maslow's hierarchy of needs (Maslow, 1943). However, most needs-based theories do not include these categories. Franklin speculates that the Western-centric origin of contemporary needs theories may explain their absence, as the conditions necessary to satisfy these needs are largely fulfilled in first-world societies. Had these theories been formulated with reference to conditions in poorer countries, or prior to the industrial revolution, it is possible that Physical and Security needs may have been considered more prominent in their contribution to well-being. This idea receives support from research by Tay and Diener (2011), who, in an international survey of 41,933 participants across 123 countries, found that needs such as food, shelter and income were the strongest predictors of life satisfaction, while their absence was predictive of negative affect. Crucially, the impact of these needs on affect and life satisfaction was more pronounced in developing countries than in the first world.

Thriving, on the other hand, is distinct from surviving in that it extends beyond merely sustaining life. The Thrive needs are assumed to be derivative of the enhanced capacity for problem solving and maintaining symbiotic social structures that have contributed to human prosperity and reproductive success (Franklin, 2018). For instance, Buss (2015) outlines the apparent role that cognitive and social development have played in allowing humans to take advantage of a diverse array of opportunities and inhabit environments with a wide range of characteristics and challenges. The Thrive needs consist of *Improvement* (e.g. learning, growth, progress towards valued goals), *Contentment* (e.g. contentment with self, self-esteem, self-worth), *Connection* (e.g. strong social bonds, approval, love, respect, appreciation,

belonging) and *Achievement* (e.g. attainment of valued goals and outcomes). These adaptations may also have facilitated a greater flexibility in humans' ability to respond to changing conditions in their habitat. The six need domains that define TST encapsulate and expand upon most of the domains proposed in the four needs-based theories outlined in Chapter 1, as shown in Figure 2. In this sense, TST is a more comprehensive theory than those that precede it. Franklin contends that a stable state of happiness and well-being cannot be achieved without fulfillment of all six needs. Nevertheless, he also recognises that the relative potency of each need varies according to the developmental stage any particular person is in and whether or not particular needs are being met (Franklin, 2013).

As explained above, there are 6 major needs proposed, consisting of physical needs, security needs, growth/improvement needs, contentment needs, connection needs and achievement needs (Franklin, 2018). The following section will describe these need categories in more detail and outline how they relate to the need categories proposed in other influential theories.

Physical needs. Physical needs refer to a constellation of basic requirements necessary to sustain the physiological fitness of the human organism. These include sufficient sleep, nutrition, shelter, physical touch and intimacy, stimulation, a general state of health, engaging in self-care, physical activity and avoidance of pain. This

Maslow Hierarchy of Needs	Seligman PERMA	Ryff Psychological Well-Being	Deci & Ryan Self- Determination Theory	Franklin Thrive & Survive Theory
Self-Actualisation	**Accomplishment**	Environmental Mastery	Competence	**Achievement**
Belonging	**Positive Relationships**	**Positive Relations**	**Relatedness**	**Connection**
Esteem		**Self-Acceptance**	**Competence**	**Contentment**

			Coherence sense of self	
		+ Environmental Mastery		
Self-Actualisation	**Engagement Meaning**	**Purpose in Life + Personal Growth**	**Autonomy** (free choice or control) Intrinsic Motivation	**Improvement** (Progress, Growth)
Safety				Security
Physiological			Physiological	Physical
	Positive Emotion	**Autonomy** (social independence or self-determination)	Autonomy support	

Figure 2: Comparison of needs-based theories, including TST. Adapted from Franklin (2018).

need category may be considered equivalent to Physiological needs as outlined in Maslow's (1943) theory.

Security needs. Security needs are considered to arise in infancy, whereby the satisfaction of which relates to nurturance and stability provided by caregivers (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1973). These needs are believed to persist throughout the lifespan. As humans mature, the needs change in orientation to include features of the physical and social environment. They comprise feelings of safety and security, environmental stability, absence of threat and danger, social support and adequate resources (which in the industrialised world are largely financial). The TST Security needs are equivalent to Maslow's (1943) conception of Safety needs.

Growth/improvement. Growth/Improvement, the first of the Thriving needs, refers to one's need to engage with their environment in order to benefit themselves and improve their future circumstances. Franklin (2018) proposes that the need for growth is present in almost all living organisms, although in humans it is primarily cognitive in nature. That is, all organisms have a need to impact their environment in such a way that it confers advantage to their circumstance, although in humans this

includes the need to learn, develop understanding and make progress towards goals. The theory conceptualises growth as a necessary condition for happiness and well-being, and its absence would prohibit these outcomes even in a circumstance where the satisfaction of all other needs is achieved. This specific classification of Growth as a distinct need is unique to the formulation of TST, although other needs-based theories incorporate elements related to growth. For example, growth-related needs are evident in the needs for Personal Growth and Purpose in Life proposed by Ryff (1989), as well as the need for Meaning as explained by Seligman (2012). The importance of growth is also outlined in SDT, which stresses that humans have a need to master new abilities and develop their skills and talents (Ryan & Deci, 2000). However, SDT does not specify growth as a distinct need. In this respect, TST, provides a more comprehensive approach to growth by including a sense of personal development, continual progress and learning, adaptation to changing circumstances, increasing effectiveness, engagement in one's activities, utilisation of strengths, advancement towards realisation of potential, progress, and a sense that one's life is, purposeful, interesting, and consistent with personal values.

Contentment. Contentment involves peoples' need to evaluate themselves and their current circumstances positively. This evaluation includes positive appraisals of body image, personality, moral character, competence, personal qualities, and a sense of esteem, pride, resilience, confidence and self-respect. Elements of contentment are similarly encapsulated within existing needs-based theories. For example, Maslow's (1943) conceptualisation of Esteem needs, Ryff's (1989) ideas of Environmental Mastery and Self-Acceptance, and Deci and Ryan's (Deci & Ryan, 1985) domains of Self-Concept and Competency all share similarities to TST's concept of Contentment. However, Franklin's approach to Contentment goes beyond these other theories to incorporate a broader range of conditions central

to "well founded self-confidence" (Franklin, 2018, p. 50). Franklin further highlights the need to distinguish between Contentment and the narrower construct of self-esteem on the basis of evidence regarding the maladaptive strategies some people employ to enhance feelings of self-worth (Crocker, 2002; Crocker, Moeller, & Burson, 2010; Crocker & Park, 2004). That is, Contentment needs in TST incorporate reflections upon the basis for positive self-evaluation, instead of focusing purely upon positive self-evaluation itself. The importance of this distinction is supported in research indicating that high self-esteem individuals are more predisposed to acting defensively and to engage in high-risk behaviours when their sense of self-worth is threatened (Baumeister, Heatherton, & Tice, 1993; Lambird & Mann, 2006).

Connection. Connection refers to the presence of supportive and harmonious relationships, strong family bonds, a sense of social status and influence, close and rewarding friendships, feelings of belonging and inclusion, and a sense of being loved, understood, valued, accepted and respected by others (Franklin, 2018). The importance of connection to well-being is highlighted by its inclusion in every needs-based theory and is empirically supported in countless studies which indicate that positive social connections are among the most potent contributors to SWB (Shankar, Rafnsson, & Steptoe, 2015; Tay & Diener, 2011). The developmental impacts of social deprivation have also been well documented in research investigating social, cognitive and emotional functioning of Romanian orphans (Nelson, 2014). Additionally, in adults, positive social engagement within close and trusting relationships promotes a range of positive health outcomes, while a lack thereof is associated with mood disorders, substance misuse and suicidality (Stansfeld, 2006). Franklin (2018) further emphasises the reciprocal relationship between connection and well-being. In other words, well-being promotes healthy relationships, and social

engagement in turn promotes well-being (Diener, Heintzelman, et al., 2017; Kansky & Diener, 2017).

Achievement. Achievement is distinguished from Growth in that it refers to a sense of satisfaction with one's past and present accomplishments, as opposed to the process of working towards future goals (Franklin, 2018). In TST, Achievement includes feelings of pride in one's achievements, a sense of mastery in important domains and day-to-day activities, having responded successfully to life's demands and having maximised one's opportunities, realisation of desires, and the experience of flow. In this sense, Achievement refers to the realisation of a diverse array of goals "from the prosaic to the magnificent, from the personal to the cultural, and often involves advancing the interests of others" (Franklin, 2018, p. 51). Growth and Achievement needs are distinguished from one another out of recognition that it is adaptive to experience both progress toward and achievement of goals as rewarding. The importance of this distinction is highlighted when one considers that many achievements require sustained effort and dedication in order to be realised. Therefore, TST views the rewarding aspect of growth and development as central to people's drive to initiate and persist with behaviours that ultimately lead to achievement of goals (Franklin, 2018). Despite this, many theories neglect to make this distinction.   For example, Seligman's (2012) PERMA theory emphasises the importance of Accomplishment, but also confounds progress towards a goal with achievement of goals. On the other hand, while Maslow's (1943) concept of Self-Actualisation partly encompasses the domain of Achievement in describing a need to reach and express one's highest potential, TST outlines a broader conceptualisation that involves a range of goals based on individual preferences rather than an exclusive focus on one's highest personal potential. Other theories, such as Ryff's theory of Psychological Well-being, neglect to account for Achievement needs altogether.

Ryff's theory instead appeals to the ability to manage and prosper within one's circumstances, without paying recognition to the importance of concrete achievements (Ryff, 1989). Similarly, SDT outlines the importance of Competence, but uses this as a synonym for self-efficacy, which refers more to one's belief in their ability to achieve, than instances of achievement itself (Ryan & Deci, 2000).

Need Satisfaction

Meeting the six needs above is assumed to be intrinsically satisfying, and generally beneficial to well-being (Franklin, 2018). Thus, humans are adapted to, or learn to, experience behaviour that supports the fulfillment of these needs as rewarding. Such rewarding experiences may take the form of increased positive affect and/or reduced negative affect, or a sense of satisfaction upon reflecting on the achievement of a meaningful goal. Ultimately, the positive experiences associated with need-fulfilling behaviours encourage and reinforce consistent habits of conduct that are advantageous to the welfare of the individual and the community. However, Franklin also asserts that people generally lack conscious awareness of the nature of their needs. Therefore, natural selection has installed heuristics to guide rapid decision-making, informed by emotional impulses, that involves doing one of three things. The first can be expressed simply as "do what feels good and avoid what feels bad" (Franklin, 2013, p. 4). The second is to repeat behaviours that have previously been effective. The third involves a quick reflection upon which actions are most in line with our needs, wants and expectations. This heuristic was of great adaptive advantage in our EEA as it facilitated the capacity to take quick and effective actions conducive to both survival (Panksepp, 2013) and need fulfillment (Franklin, 2013).

Franklin (2018) further believes that using shortcuts to satisfy needs in a short-term or superficial way may be maladaptive or lead to pathological behaviour. For example, satisfying needs through temporary, risky and unpredictable methods such

as drug use, promiscuous sex, or gambling, are counterproductive for two reasons. Firstly, they do not lead to the long-term satisfaction of needs and secondly, they may interfere with the maintenance or advancement of other needs domains. To illustrate this point, consider the feelings of growth or achievement that an individual may experience while gambling (Ocean & Smith, 1993) and how this activity may ultimately undermine financial security (Korn & Shaffer, 1999; Ladouceur, Boisvert, Pépin, Loranger, & Sylvain, 1994) and interpersonal relationships (Dowling, 2014; Lorenz & Yaffee, 1986).

Developmental Stages and the Hierarchy of Needs

A further consideration relevant to well-being concerns human development and the hierarchy of needs. Franklin (2013) suggests that the six needs are arranged in a hierarchy that reflects the order in which they may develop from an evolutionary perspective and also throughout the human lifespan. The Survive needs are seen to be the most fundamental, sitting at the bottom of the hierarchy, whereas Thrive needs become relevant in later developmental stages. This idea is borne out when considering the requirements of the human infant, which is entirely dependent upon caregivers providing nourishment and a safe, secure environment. In childhood and adolescence, the need for Connection is conceptualised as the most potent Thrive need, as attachment to parental figures and later peers become a crucial foundation from which other higher order needs arise. Without satisfying the need for connection, children and adolescents may develop unstable attachment styles and may experience impediments to the development of self-concept, which in turn may impact upon their ability to experience growth and achievement (King, 2015; Learner & Kruger, 1997). Conversely, in adults, who are autonomous and self-sufficient, the Connection needs are conceived as becoming less important relative to the need for Growth, which provides the means to satisfy other needs, such as Contentment and

Achievement. Hence, the relative importance of needs may depend upon developmental stage and life circumstances, although no single need consistently dominates all the others.

Importantly, the theory also suggests that well-being can be maximised only by fulfilling all six needs (Franklin, 2013). Franklin (2013) explains that in general, because Survive needs are more fundamental, they more strongly predict negative well-being in their absence compared to Thrive needs. This is supported by research showing that a lack of physical health is consistently associated with more profound negative affect, while the link between impaired health and positive affect is weaker and inconsistent (Finch, Baranik, Liu, & West, 2012; Somerset, Stout, Miller, & Musselman, 2004). Conversely, the Thrive needs are conceptualised as more predictive of positive affective states than the Survive domains.

Resources

Franklin (2018) states that in any given situation, people must utilise the resources available to support them in responding to the circumstances of their environment in order to meet the six needs. Resources include products of the external environment (or conditions) and internal personal aptitudes (or adaptations). External resources may have material properties, such as tools, produce, features of the landscape, and items denoting status, or they may be abstract devices such as social relationships and cultural practices. Internal resources refer to an individual's cognitive abilities, personal qualities and competencies.

Given that none of the six needs can be met without the utilisation of available resources, TST states that many conscious wants and desires are targeted towards resources that may assist a person in meeting their needs, even if they do not directly meet the needs themselves. For example, the desire for some resources, such as money, can be very powerful if the resources potentially promise the satisfaction of

many or all needs (Franklin, 2018). However, the desire for resources is problematic as our wants and expectations are subject to a number of influences unrelated to our needs. For example, the desire for specific resources may reflect products of the cultural zeitgeist or narratives manipulated by commercial and political powers. Therefore, the pursuit of resources as a goal can be maladaptive, as ultimately resources are meaningful only to the extent that they contribute to our underlying needs being met (Ryan & Deci, 2001). Furthermore, their pursuit may be counterproductive beyond a certain point, such as when individuals pursue financial remuneration in their careers at the expense of their ability to meet other needs that are central to their well-being (Kasser & Ryan, 1993, 1996).

The counterproductive nature of pursuing resources as a means in itself is exemplified by research showing that wealth and income fails to contribute to SWB beyond the point at which a person's Physical and Security needs are met (Diener & Biswas-Diener, 2002). The clear implication from this is that time and effort dedicated to the relentless pursuit of wealth would be better directed elsewhere if one's goal is to maximise well-being. Diener (2002) believes that the weaker relationship between wealth and SWB in higher socio-economic status nations and individuals, compared to those with lower socio-economic status, reflects the fact that extremes of wealth generally require excessive investment of time and energy in work at the expense of leisure and relationships. In addition, the pursuit of ever-higher incomes may be motivated by a materialistic mindset, which may be incommensurate with a more balanced pursuit of the important needs domains (Kasser & Ryan, 1993). Kasser & Ryan (1996) explain these same principles may hold true as applied to a wide range of wants and expectations for different resources, such as fame, a form of social capital.

The Thrive and Survive Model of Well-being

The considerations above have important implications for discerning the most economical manner to promote human well-being, including how humans should structure their physical environments, social frameworks and policies. For example, institutions that facilitate behaviours that lead to need satisfaction are likely to promote health and well-being, which benefits individuals and organisations more broadly, since a happy workforce tends to also be more productive (Oswald, Proto, & Sgroi, 2015). On an individual level, considerations of internal resources suggest a range of biological adaptations, cognitive strategies and behavioural repertoire that promote well-being, survival, and the viability of progeny. Genetic adaptations such as intelligence and certain personality factors (e.g. openness to experience) may contribute to a person's ability to meet their need for Improvement (Franklin, 2013). As an example of cognitive strategies, the ability to focus on positive interpretations may enhance a person's ability to meet their need for Contentment (Kong, Ding, & Zhao, 2015).

Taking all of these factors into consideration, the TST model shows well-being to be an outcome of the relationship between the gratification or deprivation of needs, and the relationship of internal and external resources. This TST model of well-being is shown in Figure 3.

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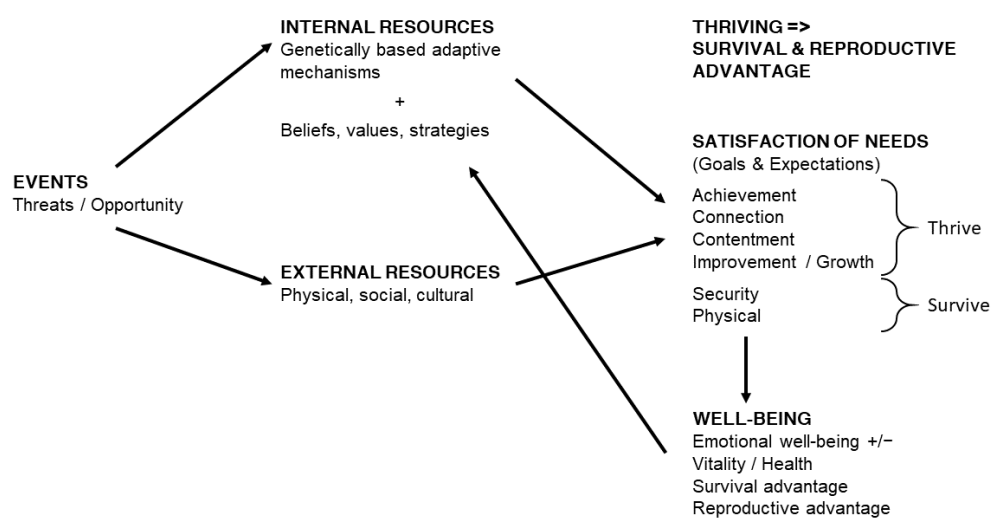
Figure 3: Thrive and Survive model of well-being.

Rationale for present study

TST provides a framework with great potential for understanding the components underlying well-being. The theory includes and extends upon concepts outlined in earlier theories and utilises a unique theoretical approach from which to identify the need categories and their relative potency. However, the proposed relationship between the needs dimension and well-being still requires assessment. In this respect, TST is still only in the preliminary stages of empirical testing. Initial effort has been made towards developing a valid and reliable measurement instrument for assessing TST. The Thrive Survive Survey (TSS) was developed to address this (O'Rourke, 2012), although to date few studies have examined the psychometric properties of the scale (O'Rourke, 2012; Walsh, 2014). One previous study assessed the construct validity of the TSS through factor analysis using Principal Axis Factoring. The analysis revealed numerous problematic items in the initial scale, which either failed to load clearly upon the hypothesised need domains, or loaded onto an incorrect factor (O'Rourke, 2012). A revised version of this scale, excluding many of the original items, demonstrated high reliability, although certain decisions taken in revising the scale raise questions about the appropriateness of the retained items (Walsh, 2014). More specifically, the author of this study allowed items to migrate from one subscale to another, ignoring the original deductive theoretical approach. For example, an item that was originally intended for the Security subscale, "My family makes me feel safe and secure", was allowed to migrate onto the Connection subscale. This previous study also did not investigate how the TSS relates

to positive and negative affect. This is crucial in assessing the construct validity of the TSS as the proposed needs are conceptualised to relate to SWB, which consists of experiences of positive and negative affect as well as life satisfaction. To address these issues, the present study re-examined the revised pool of TSS items as used by Walsh (2014) to determine whether the factor structure indicates adequate construct validity. The present study built upon these previous studies and followed the scale development protocol as advocated by MacKenzie, Podsakoff and Podsakoff (2011). This protocol specifies that following the generation of items to represent the construct, and examination of initial test data, a new sample is utilised to re-examine scale properties, assess scale validity, and conduct revisions of the scale and refinement of items based upon the apparent construct and content validity.

A second rationale for the present study was to provide a platform for future research by legitimising the TST needs as appropriate targets of intervention strategies. To establish the therapeutic validity of such an approach, there must first be a rigorous and convincing demonstration that the proposed needs impact SWB. It is necessary then to evaluate which needs are the most potent contributors to SWB, as well as the specific relationship between aspects of SWB and specific need satisfaction. Through investigating which aspects of SWB are most closely aligned with each need, it may be possible to reveal more direct routes towards addressing deficits in various areas of well-being. For example, different treatment targets may be implicated for those who lack positive affect, relative to those experiencing an abundance of negative affect. Additionally, the present study is a necessary preliminary step to justify a more resource-intensive randomised controlled trial (RCT) to assess SWB and need satisfaction. The RCT would involve manipulating needs satisfaction in order to reveal causal relationships with SWB. The present study

is thus an intermediary investigation of the relative strength of associations between needs domains and SWB domains. Four hypotheses were formulated:

1) Factor analysis would support the existence of 6 need factors as proposed by TST;

2) That higher scores in meeting these need factors would predict an increase in life satisfaction and positive affect and a decrease in negative affect;

3) The Survive needs would be the strongest predictors of negative affect;

4) The Thrive needs would be the strongest predictors of positive affect.

Chapter 4

Method

Participants. Participants were 882 individuals from the general community who responded to email invitations and advertisements (see the Procedure for further details on recruitment). Of the initial sample, 284 were excluded on the basis of missing data, leaving a sample size of 598. Age was measured categorically, with 38.1% between 35-54 years of age. 66.4% were female, and 47.2% listed their relationship status as married. In terms of occupational status, 49.5% were in full time employment whereas 5.9% were unemployed. 61.9% were home-owners and 36.6% held a post-graduate degree. 72.4% indicated that they were Australian-born and 76.1% listed Australian Caucasian as their ethnicity. Refer to Appendix A for a table indicating the complete range of demographic data.

Measures. *Thrive and Survive Survey (TSS; Franklin, 2013).* Franklin developed the TSS based on a deductive, or rational-theoretical, approach to initial scale development. In this approach, the selection and definition of constructs takes precedence over the generation of items (Burisch, 1984; MacKenzie et al., 2011). After reviewing the content domain of the theory in order to establish working definitions of constructs of interest, core concepts were identified and operationalised as observable beliefs, attitudes or behaviours. A preliminary pool of items was selected or adapted from existing questionnaires and additional items were formulated to address shortfalls in comprehensiveness. In accordance with guidelines advocated by Simms (2008) and echoed in MacKenzie et al. (2011), these operationalisations were then configured as a series of simple and straight-forward personal attributions or statements, avoiding the use of slang or jargon, and then reviewed by a number of experts in order to determine their relevance and comprehensiveness. Consideration was given to the phrasing of the items such that they did not affect participants' responses in unintended ways. That is, each item was phrased using keywords and descriptions focused on a single type of need. For

example, items measuring Contentment needs referred to positive and negative characteristics of the self, while those addressing Achievement referenced meeting external demands, outcomes or goals. Such an approach was intended to enhance the specificity of each item, to encourage clearly differentiable factors. Care was also taken to frame statements in non-judgmental terms.

Franklin (2013) originally tried to construct equal numbers of positive and negative items and started with a pool of 150 items. These items were then sent to an expert panel for reflection with respect to the theory. A survey of the original 150 items was subsequently conducted based on 200 responses. This analysis eliminated items that were very highly correlated and led to a final pool of 85 items to be included in the survey. After this analysis, the stronger items were predominantly positive, as typically reflected in questionnaires.

The final TSS consists of 85 items; each presented as a statement, with participants asked to indicate on a 10-point scale how true each statement is in their lives. The anchor points for each item were configured as: Definitely Not True (1); Somewhat True (4); Mostly True (7); and Definitely True (10). The item pool was sufficiently large that each need construct was adequately covered and represented, with scope for revision during factor analysis. See Appendix B for the full list of TSS items grouped according to need categories.

Satisfaction with Life Scale (SWLS; Diener et al., 1985). The SWLS quantifies respondents' subjective appraisal of their general levels of satisfaction with life at the present time. The scale comprises five items addressing individuals' perception of their lives and how closely this aligns with their personal ideal. Items are rated on a seven-point Likert-type scale from 1 (Strongly Agree) to 7 (Strongly Disagree), and scores are summed to produce a total score. Scores range from 5-35, with a score of 20 representing a neutral appraisal. The SWLS consistently demonstrates sound psychometric properties, with high internal consistency reliability (Cronbach's alpha

= .79 to .89), high test-retest reliability (.80 to .84) and moderate to strong correlations with distress and negative affect demonstrating construct validity. Factor analyses dependably indicate a unidimentional factor structure across diverse populations (Pavot & Diener, 2008). See Appendix C for a full list of SWLS items.

Scale of Positive and Negative Experience (SPANE; Diener, Wirtz, et al., 2010). The SPANE is a 12-item scale designed to assess subjective accounts of positive and negative feelings. Six items are dedicated to positive feelings and six to negative feelings. For both positive and negative subscales, three items utilise descriptors that inquire more generally about the positivity or negativity of participants' emotional experiences (e.g., good, bad) and three items inquire about specific emotions (e.g., joyful, sad). Participants are asked to rate on a five-point scale the frequency with which each descriptor has characterised their emotional experience, with (1) representing "Very Rarely or Never" and 5 representing "Very often or Always". Each subscale is summed and can range from 6-30. The score from the negative subscale can be subtracted from that of the positive subscale to provide a total score, which can range from -24 to 24. Investigation into the SPANE has indicated good psychometric properties with an internal consistency coefficient (Cronbach's alpha) ranging from .81 to .90 (Diener, Wirtz, et al., 2010). Separate principal factor analysis has also found both the positive and negative subscales to produce one single factor with an eigenvalue exceeding one, whereby factor loadings ranged from .49 to .81 and accounted for 61% of variance in the positive scale and 53% of variance in the negative scale (Silva & Caetano, 2013). The scale has demonstrated strong convergent validity with other measures assessing life satisfaction, happiness, and emotion (Diener, Wirtz, et al., 2010; Li, Bai, & Wang, 2013; Silva & Caetano, 2013). See Appendix D for a full list of items from the SPANE.

Procedure. Participants were required to be over 18 years of age and sufficiently proficient in their English language abilities that they could understand and interpret the survey items. No other exclusion criteria were applied.

Recruitment of participants was achieved through various means. The researchers initially invited friends and family to participate and encouraged those who had completed the survey to advertise through their networks. This was achieved through direct word-of-mouth and by snowball sampling on social media (see Appendix F for an example). Various agencies were also contacted directly and invited to take part in the study in an attempt to include participants from backgrounds of hardship, disadvantage, and marginalisation. Letters were posted to agency managers and then followed up a week later with a phone call by one of the researchers. Among those agencies that took part were a homeless support service, a hospital and two mental health support services. The agency manager and/or ethics committee of each service approved the collaboration prior to surveys being distributed.

Surveys were administered both electronically online and in paper hardcopy. The online survey was created through Qualtrics and hosted by the Macquarie University intranet. Hard copy versions (see Appendix E) were created to allow participants the choice of completing the survey by pen and paper, so as not to discriminate against those who were not computer literate or did not have ease of access to a computer or the internet. In both online and hard copy formats, the survey began with an information/consent form (see Appendix G), followed by questions inquiring about participants' demographic information, the *Satisfaction with Life Scale* (SWLS) which was used in a concurrent study utilising the same dataset, the 85-item TSS, and the SPANE. The order of the TSS items was randomised for each participant who completed the survey online. The item order was also randomised in the hard copy surveys, though each copy was identical.

Data analysis. Factor analysis was chosen to reveal the underlying structure of latent constructs and to identify items that failed to access the intended domain of interest. Simultaneous multiple regressions were also employed to examine the extent to which

TSS factors predicted positive affect, negative affect and satisfaction with life. All

analyses were conducted using SPSS version 21.0.

Chapter 5

Results

       Factor analysis. TSS items were assessed for multivariate normality in order to determine whether Principle Axis Factoring (PAF) of Maximum Likelihood (ML) estimation was more appropriate for subsequent factor analyses. Analyses of frequency histograms and the Shapiro-Wilk's test together revealed considerable departure from normality within each item (all p values < .001). See Appendix H for a full table of normality test results. Univariate normality is a necessary but not sufficient condition for multivariate normality (Pituch & Stevens, 2015). Hence, the items were determined to fail the assumption of multivariate normality, and PAF was chosen as it does not require multivariate normality in order to function (Costello & Osborne, 2005; Coughlin, 2013; Fabrigar, Wegener, MacCallum, & Strahan, 1999).

       The total number of observations was 598, which exceeds the recommended sample size of 300-500 (MacCallum, Widaman, Zhang & Hong, 1999). The case to variable ratio was 598/85 = 7.04, which within the range of 3:1 to 10:1 recommended in Cattel (1978) and Everitt (1975), albeit somewhat below the recommended ratio of 10:1 indicated in Nunally (1978). Despite this, Arrindell and Van der Ende (1985) used real data to demonstrate that the case to variable ratio has little real-world impact upon the stability of emergent factor structures.

       The original 85-item questionnaire was examined in a PAF using Oblimin rotation (Delta = 0) in accordance with Pedhazur and Schmelkin (1991). Oblique rotation was chosen in accord with Tabachnick and Fidell (2007), who argue that orthogonal methods should only be used when oblique methods return factors which appear minimally correlated. Bartlett's test of sphericity was significant (p < .001) and KMO was above the recommended value of .5 (Kaiser, 1974), which together indicate that there are sufficient intercorrelations among the items to warrant the use

of factor analysis (Field, 2013). Inspection of a scree plot revealed that a 6 or 5-factor solution may be appropriate. The 6 factor solution failed to demonstrate clear factor structure containing significant loadings (more than .3; Kline, 2002) in the absence of cross-loadings, where primary loadings were approximately .2 greater than secondary loadings. These cross-loadings indicate problematic items which are conceptually confounded through their relationships with multiple factors (MacKenzie et al. 2011). Furthermore, the final factor was not defined by a satisfactory number of items. See Table 1 for a pattern matrix of factor loadings. See Appendix I for complete analysis output.

Table 1

Six factor solution using PAF extraction with oblimin rotation (delta = 0)

	Phy	Sec	Gro	Cont	Conn	Undf
1) I don't get enough restful sleep to enable me to function at my best *	.51					
2) My body doesn't get what it needs to function at its best *	.73					
3) My physical state or health interferes with my ability to function well *	.71					
4) I eat well	.48					-.32
5) My living conditions don't allow me to function at my best *		.32				
6) I don't take very good care of myself *	.71					
7) I am not physically active enough to be really fit, health and energetic *	.68					
8) If I am honest with myself, I probably overuse alcohol or other drugs *						
9) My physical and health needs are met	.57					
10) My physical state or health disrupts my life *	.65					
11) My need for touch and physical contact isn't really being met. *					.31	.36
12) I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded) *						.31
13) I don't feel safe *						
14) I don't feel secure *		.35				
15) My life is not very stable, predictable or reassuring *		.43				
16) The fundamentals of my life are dependable and reliable					.34	
17) I am sometimes subject to threat, danger or injury *						
18) I can't rely on the important people in my life *					.35	
19) I don't have a secure or reliable income *		.60				
20) My family makes me feel safe and secure					.68	

	Phy	Sec	Gro	Cont	Con	Undf
21) I have enough money to meet my needs		.72				
22) I feel financially insecure *		.65				
23) I am always learning something new or useful			.73			
24) My life is not improving *			.48			.39
25) I am developing a lot as a person			.78			
26) I am not growing as a person *			.48			.37
27) My understanding and effectiveness is always growing			.73			
28) I feel like I am moving forward			.78			
29) My life is not expanding - it is stagnant *			.53			.42
30) I am making progress			.82			
31) My life is getting better			.74			
32) My life is not really consistent with my personal values (what I think is important in life) *						.31
33) I am moving towards the things I value			.73			
34) My life has a sense of direction and meaning to it			.59			
35) I lead a purposeful and interesting life			.60			
36) I am not realising my potential *						
37) I make good use of my strengths, (talents, abilities and interests			.61			
38) I don't adapt well to change *						
39) I am engaged and interested in my daily activities			.52			
40) I am continually learning and growing			.85			
41) My attitude to myself is probably not as positive as most people feel about themselves *				-.45		
42) I am competent and capable in the areas of life which are important to me			.50			
43) I don't feel good about my appearance or my body *	.47			-.31		
44) I like most aspects of my personality				-.49		
45) On the whole I am satisfied with myself			.44	-.33		
46) I feel that I don't have that many good qualities *				-.37		
47) I take a positive attitude towards myself			.32	-.47		
48) I am proud of who I have become			.46	-.34		
49) I have a strong sense of self respect				-.55		
50) I wish I could have more respect for myself *				-.58		
51) In general I feel confident and positive about myself			.37	-.44		
52) When I look at the story of my life, I am pleased with how things have turned out			.44			
53) When I compare myself to others, I do not feel so good about myself *				-.52		
54) I think of myself as a good and strong person			.36	-.34		
55) My belief in myself gets me through hard times				-.46		
56) I get on well with the important people in my life					.62	
57) Maintaining close relationships has been difficult and frustrating for me *					.47	
58) My social relationships are close, supportive and rewarding					.58	

	Phy	Sec	Gro	Cont	Conn	Undf
59) I feel appreciated and valued					.54	
60) I feel understood and accepted					.50	
61) I feel lonely *					.38	.36
62) I have good friends I can count on					.43	
63) I have a good family life					.69	
64) I feel loved					.74	
65) I have a mutually satisfying loving relationship					.55	
66) I feel left out or excluded *					.32	
67) I feel like I belong					.47	
68) I feel respected				-.35	.43	
69) I feel isolated from others *					.37	
70) I feel like many of the people I know have gotten more out of life than I have *						
71) I've been pretty successful in life			.47			
72) I am not achieving the things that are important to me *		.31	.32			.30
73) I am meeting the goals I set for myself			.67			
74) I don't feel that good about what I accomplish each day *			.32			
75) I take pride in my achievements			.51	-.30		
76) I derive a sense of accomplishment from my activities			.64			
77) I am successfully meeting my needs, goals and expectations			.63			
78) I have responded successfully to the demands and opportunities of life			.46	-.32		
79) I am mastering the things that are important to me			.62			
80) I am doing more than just surviving - I am thriving			.55			
81) I have not made the most of the opportunities life presents *						
82) I am realising my dreams and satisfying my deepest yearnings			.68			
83) In many ways I feel disappointed about my achievement in life *						.32
84) I feel proud of what I have done in life			.52	-.36		
85) I often find myself completely immersed, engaged or absorbed in what I am doing			.49			

Note. * Reverse Coded Items. *Phy* = Physical, *Sec* = Security, *Gro* = Growth, *Cont* = Contentment, *Conn* = Connection, *Undf* = "undefined factor".

Cronbach's alpha for internal consistency reliability was conducted on the original six subscales (see Appendix J). This analysis demonstrated good to excellent reliability for all subscales: Physical (α = .84), Security (α = .82), Growth (α = .95), Contentment (α = .94), Connection (α = .93), and Achievement (α = .95). It is noteworthy, however, that reliability is not a test of factor structure and assumes,

rather than demonstrates, uni-dimensionality (Gerbing & Anderson, 1988; Segars, 1997; Tavakol & Dennick, 2011).

A 5-factor solution was also examined, and this revealed a considerably clearer cleaner factor structure. However, there remained a number of items that demonstrated no significant factor loadings above .3, or cross loadings that were not separated by at least .1, or instead loaded significantly on an unexpected factor, against predictions from the theory. Crucially, the items that were expected to load on the Growth and Achievement factors appeared to merge onto a single factor, which was interpreted as Growth/Achievement. Other factors included Physical, Security, Contentment, and Connection, as expected. A discussion of the problematic items and possible explanations underlying their unexpected loadings appears in the first part of the discussion. See Appendix K for complete output.

Following the generation of the 5-factor model, and the identification of problematic items, an iterative approach was utilised to remove three sets of items: (i) items which failed to load on any factor and demonstrated low communalities, (ii) items which continued to demonstrate unresolvable cross loadings not separated by at least .1, and finally; (iii) items which loaded on an unexpected factor. These items were removed in accordance with the protocol advocated by MacKenzie et al (2011). This process produced a 54 item revised scale, which demonstrated a clear and clean pattern of factor loadings. The factors were interpretable as described above: Growth/Achievement, Physical, Security, Contentment, and Connection. Relevant items on these revised subscales were summed to form totals for inclusion in a series of multiple regression models, as described below. See Table 2 for the final 5-factor solution pattern matrix and Table 3 for correlations between factors.

Table 2

Five factor solution using PAF extraction with oblimin rotation (delta = 0)

	Phy	Sec	GroAc	Cont	Conn
Cronbach's α	.85	.76	.97	.86	.93
Proportion of variance accounted for**	17.53	14.17	38.02	17.33	27.49
1) I don't get enough restful sleep to enable me to function at my best *	.47				
2) My body doesn't get what it needs to function at its best *	.71				
3) My physical state or health interferes with my ability to function well *	.71				
4) I eat well	.47				
6) I don't take very good care of myself *	.67				
7) I am not physically active enough to be really fit, health and energetic *	.66				
9) My physical and health needs are met	.58				
10) My physical state or health disrupts my life *	.64				
13) I don't feel safe *		.59			
14) I don't feel secure *		.63			
15) My life is not very stable, predictable or reassuring *		.51			
17) I am sometimes subject to threat, danger or injury *		.39			
18) I can't rely on the important people in my life *		.36			
19) I don't have a secure or reliable income *		.47			
22) I feel financially insecure *		.43			
23) I am always learning something new or useful			.75		
25) I am developing a lot as a person			.82		
26) I am not growing as a person *		.35	.54		
27) My understanding and effectiveness is always growing			.76		
28) I feel like I am moving forward			.81		
30) I am making progress			.89		
31) My life is getting better			.75		
33) I am moving towards the things I value			.75		
34) My life has a sense of direction and meaning to it			.61		
35) I lead a purposeful and interesting life			.63		
37) I make good use of my strengths, (talents, abilities and interests			.62		
39) I am engaged and interested in my daily activities			.53		
40) I am continually learning and growing			.90		
41) My attitude to myself is probably not as positive as most people feel about themselves *				-.44	
44) I like most aspects of my personality				-.40	
49) I have a strong sense of self respect				-.50	
50) I wish I could have more respect for myself *				-.56	
53) When I compare myself to others, I do not feel so good about myself *		.30		-.49	
55) My belief in myself gets me through hard times				-.45	
56) I get on well with the important people in my life					.64

	Phy	Sec	GroAc	Cont	Conn
58) My social relationships are close, supportive and rewarding					.65
59) I feel appreciated and valued					.65
60) I feel understood and accepted					.56
62) I have good friends I can count on					.57
63) I have a good family life					.55
64) I feel loved					.61
67) I feel like I belong					.44
68) I feel respected				-.31	.53
71) I've been pretty successful in life ^			.50		
73) I am meeting the goals I set for myself ^			.70		
75) I take pride in my achievements ^			.52		
76) I derive a sense of accomplishment from my activities ^			.64		
77) I am successfully meeting my needs, goals and expectations ^			.63		
78) I have responded successfully to the demands and opportunities of life ^			.47		
79) I am mastering the things that are important to me ^			.64		
80) I am doing more than just surviving - I am thriving ^			.56		
82) I am realising my dreams and satisfying my deepest yearnings ^			.69		
84) I feel proud of what I have done in life ^			.54	-.33	
85) I often find myself completely immersed, engaged or absorbed in what I am doing ^			.50		

Note. * Reverse Coded Items. *Phy* = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection. **Proportions cannot be added to obtain a total as factors are correlated with one another. ^ Items originally from the Achievement subscale.

Table 3

Correlations between factors for final five factor solution

	GroAc	Phy	Conn	Cont
Phy	0.40	-		
Conn	0.63	0.33	-	
Cont	-0.47	-0.32	-0.34	-
Sec	0.33	0.43	0.35	-0.23

Note. *Phy* = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Cronbach's alpha was used to evaluate internal consistency reliability of the revised 5-factor Thrive Survive Survey (reported in Table 2), as well as for positive affect (α = .93), negative affect (α = .86) and satisfaction with life (α = .89). See

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Appendix L for complete output. The 5 revised factors were used in 3 separate simultaneous multiple regression models predicting: (i) positive affect; (ii) negative affect, and; (iii) satisfaction with life. See Table 4 for correlations between measures.

Table 4

Correlation matrix for IVs and DVs in regression models

	1	2	3	4	5	6	7
1. Positive Affect	-						
2. Negative Affect	-.71*	-					
3. SWLS	.70*	-.55*	-				
4. Physical	.50*	-.45*	.45*	-			
5. Security	.51*	-.53*	.57*	.46*	-		
6. GroAc	.73*	-.57*	.72*	.51*	.47*	-	
7. Cont	.67*	-.62*	.61*	.52*	.49*	.73*	-
8. Conn	.72*	-.58*	.73*	.49*	.54*	.80*	.69*

Note. * All correlations significant ($p < .001$). *Note. Phy* = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Regression analyses. A multiple regression model was conducted to predict positive affect from Physical, Security, Growth/Achievement, Connection and Contentment subscale totals. In the absence of theory determining an order of entry, predictors were added into the model simultaneously. The overall regression model was significant, such that these predictors together accounted for 61.8% of the variance in positive affect, $R^2 = .62$, $F(5, 592) = 191.47$, $p < .001$. It appears that each factor was a significant positive predictor of positive affect, with the largest effect sizes being for Growth/Achievement and Connection (see Table 5 for a coefficient summary). Correlations between predictors were below .8 and VIF statistics were below 10, ranging from 1.55 to 3.99, which indicates no issue with multicollinearity (Field, 2013). An examination of frequency histograms and the P-P plot revealed residuals were normally distributed. Examining a scatterplot of standardised residual

against standardised predicted values indicated that there were no non-linear patterns and that homogeneity of variance was satisfied.

Table 5

Coefficient summary predicting Positive Affect from Physical, Security, Growth/Achievement, Contentment and Connection.

	b	SE(b)	β	t	p	95% CI	
Constant	4.27	0.72		5.91	< .001	2.85	5.68
Phy	0.03	0.01	0.08	2.49	.013	0.01	0.05
Sec	0.05	0.01	0.10	3.32	.001	0.02	0.08
GroAc	0.03	0.01	0.31	6.60	< .001	0.02	0.04
Cont	0.07	0.02	0.18	4.42	< .001	0.04	0.10
Conn	0.07	0.01	0.25	5.65	< .001	0.05	0.10

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

A second regression model was conducted to predict negative affect from the five subscale totals. The overall regression model was significant, such that these predictors together accounted for 47.2% of the variance in negative affect, $R^2 = .47$, $F(5, 592) = 105.83$, $p < .001$. It appears that each factor was a significant negative predictor of negative affect, with the exception of Physical and Growth/Achievement. The largest effect sizes belonged to Contentment and Security (see Table 6 for a coefficient summary). Frequency histograms and the P-P plot revealed the assumption of normally distributed residuals was satisfied (see Appendix M). An examination of scatterplots of standardised residual against standardised predicted values again indicated that there were no non-linear patterns and homogeneity of variance was satisfied.

A final model regressed scores from the SWLS from the five subscale totals. Once again, the overall regression model was significant and predictors together accounted for 61.9% of the variance in SWL, $R^2 = .62$, $F(5, 592) = 192.12$, $p < .001$. Security, Growth/Achievement and Connection were significant positive predictors of SWL (see Table 7 for a coefficient summary). Assumptions of normality, linearity

and homoscedasticity were again satisfied. Complete output of initial regression

analyses appear in Appendix M.

Table 6

Coefficient summary predicting Negative Affect from Physical, Security, Growth/Achievement, Contentment and Connection.

	b	SE(*b*)	β	*t*	*p*	95% CI	
Constant	31.08	0.81		38.28	< .001	29.49	32.68
Phy	-0.02	0.01	-0.07	-1.75	.080	-0.04	0.00
Sec	-0.10	0.02	-0.23	-6.09	< .001	-0.13	-0.07
GroAc	-0.01	0.01	-0.09	-1.63	.103	-0.02	0.00
Cont	-0.12	0.02	-0.32	-6.77	< .001	-0.16	-0.09
Conn	-0.04	0.01	-0.13	-2.51	.012	-0.07	-0.01

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Table 7

Coefficient summary predicting Satisfaction with Life from Physical, Security, Growth/Achievement, Contentment and Connection.

	b	SE(*b*)	β	*t*	*p*	95% CI	
Constant	-0.01	0.98		-0.01	.990	-1.93	1.91
Phy	0.00	0.01	0.00	-0.09	.930	-0.03	0.03
Sec	0.14	0.02	0.22	7.06	< .001	0.10	0.18
GroAc	0.05	0.01	0.35	7.38	< .001	0.04	0.06
Cont	0.02	0.02	0.03	0.86	.392	-0.02	0.06
Conn	0.12	0.02	0.31	6.90	< .001	0.09	0.16

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Re-run coefficient summaries excluding influential cases from data

analyses. Influence statistics revealed the presence of numerous influential cases

within each model, defined as scores having a standardised residual above 1.96 and

either: (i) a Cook's distance above 1 (Cook & Weisberg, 1982); (ii) a leverage value

above .0301 (Pituch & Stevens, 2015), or; (iii) a covariance ratio below .9699

(Belsley, Kuh, & Welsch, 1980). This resulted in 22 cases being identified and

removed from the model predicting positive affect, 19 cases from negative affect and

18 cases from SWL. These models were re-run to achieve more accurate estimates of the parameters, but similar results were produced on all factors with the exception of Growth/Achievement which became a significant negative predictor of negative affect due to a reduction in standard error. No other major differences were found between the original and revised models. A summary of results from the revised models appears in Table 8, 9 and 10. Appendix N presents complete output from the revised regression analyses.

Table 8

Coefficient summary predicting Positive Affect from Physical, Security, Growth/Achievement, Contentment and Connection excluding influential cases.

	b	SE(b)	β	t	p	95% CI	
Constant	3.77	0.64		5.90	< .001	2.51	5.02
Phy	0.04	0.01	0.11	3.73	< .001	0.02	0.05
Sec	0.05	0.01	0.11	3.84	< .001	0.02	0.08
GrAc	0.03	0.00	0.28	6.33	< .001	0.02	0.04
Cont	0.08	0.01	0.19	5.16	< .001	0.05	0.10
Conn	0.08	0.01	0.29	7.07	< .001	0.06	0.11

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Table 9

Coefficient summary predicting Negative Affect from Physical, Security, Growth/Achievement, Contentment and Connection excluding influential cases.

	b	SE(b)	β	t	P	95% CI	
Constant	30.90	0.75		41.43	< .001	29.43	32.36
Phy	-0.01	0.01	-0.03	-0.83	.407	-0.03	0.01
Sec	-0.09	0.02	-0.21	-6.04	< .001	-0.12	-0.06
GrAc	-0.01	0.01	-0.12	-2.34	.020	-0.02	0.00
Cont	-0.13	0.02	-0.34	-7.51	< .001	-0.16	-0.09
Conn	-0.04	0.01	-0.17	-3.31	.001	-0.07	-0.02

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Table 10

Coefficient summary predicting Satisfaction with Life from Physical, Security, Growth/Achievement, Contentment and Connection excluding influential cases.

	b	SE(b)	β	t	p	95% CI	
Constant	-0.98	0.90		-1.09	.278	-2.76	0.79
Phy	0.00	0.01	0.00	0.08	.933	-0.02	0.03
Sec	0.16	0.02	0.25	8.53	< .001	0.12	0.20
GrAc	0.05	0.01	0.35	7.99	< .001	0.04	0.06
Cont	0.02	0.02	0.04	1.17	.244	-0.02	0.06
Conn	0.12	0.02	0.31	7.37	< .001	0.09	0.15

Note. Phy = Physical, *Sec* = Security, *GroAc* = Growth/Achievement, *Cont* = Contentment, *Conn* = Connection.

Chapter 6

Discussion

This project involved a preliminary investigation of John Franklin's Thrive Survive Survey: An 85-item self-report questionnaire, generated from Franklin's theory. TST is a theory of happiness and well-being based on the principles of evolutionary psychology (Franklin, 2018). The theory proposes that happiness and well-being are largely determined by the extent to which a set of six innate needs are being met. The need constructs have been operationalised in the form of the TSS. This study tested the following hypotheses: (1) Factor analysis would support the existence of 6 need factors; (2) That higher scores in meeting these need factors would predict an increase in life satisfaction and positive affect and a decrease in negative affect; (3) The Survive needs would be the strongest predictors of negative affect; and; (4) The Thrive needs would be the strongest predictors of positive affect. The ensuing discussion will focus first upon addressing issues related to the factor structure of the TSS (hypothesis 1), as this issue must be resolved before proceeding to evaluate any relationships between the resultant factors and the three components of SWB (hypotheses 2, 3 and 4).

Factor structure of the TSS. The first hypothesis addressed the factor structure of the TSS with the prediction that the six need dimensions could be differentiated from one another. Results indicated that the factor structure of the six-factor solution was a poor fit and thus Hypothesis 1 was not supported. This outcome occurred primarily because the vast majority of items from the Achievement factor loaded onto the Growth factor, leaving the sixth factor with few items to define it. Furthermore, the items that did load on the sixth factor belonged to the hypothesised Security factor, which was left with items primarily relating to income, money or finances. For this reason, retention of the sixth factor left the Security factor poorly

defined, through distributing the items intended to load on Security across a number of factors. The remaining items on Factor 6 demonstrated low loadings of under .4, with many items cross-loading onto other factors. Furthermore, there was not a sufficient conceptual similarity between items that loaded upon Factor 6 to properly label this as a coherent factor. For example, Factor 6 included items referring to eating well, need for touch, life improvement, personal growth, stagnation, personal values and feelings of loneliness, achievement and disappointment. In summary, a six-factor solution did not provide an interpretable fit for the data.

Given that the scree plot suggested that either a five or a six-factor solution may be appropriate, and the sixth factor was poorly defined and appeared to split the Security factor, a five-factor solution was considered. This five-factor solution produced a far more interpretable pattern of factor loadings, which generally agreed with the hypothesised constructs as originally proposed by Franklin (2018). However, the items that were intended to load on Achievement mostly loaded onto the same factor as those intended to define Growth. Nevertheless, the remaining items relating to the constructs of Physical needs, Security needs, Connection needs, and Contentment needs appeared to generally cluster with other relevant items forming well-defined factors. Despite this, a number of items were problematic, demonstrating either a failure to load onto any factor, cross loading on more than one factor or loading on an incorrect factor. These will be discussed in turn below.

A prior study investigating the factor structure of the TSS reached similar conclusions regarding the lack of differentiation between Growth and Achievement and the appropriateness of a five-factor solution (Walsh, 2014). There is, however, a major distinction between the present study and the previous one with respect to addressing problematic items. In the previous study, problematic items were allowed to migrate across factors. For example, Item 20 ('My family makes me feel safe and

secure'), was originally conceptualised as part of the Security factor, but instead loaded onto Connection. A decision was taken in the previous study to include this item in the regression analyses as part of the Connection sub-scale. Decisions such as this resulted in items from subscales intending to measure one need construct, contributing to the factor make-up of an unintended construct. In the present study, problematic items were excluded from the analysis entirely. This decision to exclude problematic items was taken to ensure that the integrity of the original theoretical formulation, as conceptualised by Franklin on the basis of evolutionary theory, was not compromised or diluted by a series of *ad-hoc*, atheoretical modifications. Problematic items will be discussed in turn below.

Physical needs. Most items intended to measure Physical needs behaved as expected, loading onto the same factor. However, Item 5, "My living conditions don't allow me to function at my best", instead demonstrated a small relationship with items intended to measure Security needs. One possible explanation for this is that respondents do not consider living conditions to be a part of physical and biological self-care, or alternatively, they experience living conditions as primarily determined by financial circumstances. That is, a person's living conditions are restricted to some extent by their means and circumstances, such as availability of work or proximity of social support structures, and so do not necessarily reflect their preferences, (Reed & Mills, 2007). Responses to this item may thus indicate that living conditions contribute more to overall feelings of safety and security than physical well-being. This is likely to be particularly true for a sample in which the vast majority of participants possess access to basic shelter. Nevertheless, the Physical needs subscale performed largely as expected in factor analysis, leading to most items being retained.

Item 8, "If I'm honest, I probably overuse alcohol or other drugs" was also problematic. This item was meant to load onto Physical needs, but failed to load

substantially onto any factor. As such, this item demonstrated low communality, indicating that it was relatively independent of the factors together. Given that the item was independent of any single factor and was unrelated to the five factors taken in combination, the item was identified as a candidate for removal from the scale.

There is a range of potential explanations for why an item relating to overuse of alcohol or other drugs did not load onto Physical needs. Despite the stigma attached to alcohol and drug misuse, misuse is not exclusive to individuals who are from lower socio-economic backgrounds or experiencing poor health or physical functioning. Indeed, substance misuse occurs across a spectrum of individuals with diverse life circumstances, differing in security, social connectedness, wealth, and achievement (Spooner & Hetherington, 2004). The phrasing of the question may also have been unclear, as there was no reference to any physical difficulties that a person may encounter when misusing drugs or alcohol. As such, a more suitable item (or items) may refer to physiological symptoms, such as unhealthy changes in appetite or sleeping patterns as a result of drug use, or withdrawal symptoms of excessive drug use (e.g. "Sometimes my use of alcohol or drugs interferes with my health or functioning"). It is also worth considering that the layperson may interpret drug and alcohol "overuse" as a term relative to social norms and expectations, not necessarily in terms of dysfunction. For example, a person may consider their binge drinking or smoking as overuse, without recognising that these behaviours contribute towards physical dysfunction in their lives. To illustrate this point, consider the Australian public health campaign decreeing that "every cigarette is doing you damage". Individual who consider themselves occasional social smokers may interpret this behaviour as overuse, despite a lack of apparent health impact. Consequently, it is worth considering whether this item should be excluded from future versions of the TSS or rephrased to avoid ambiguity.

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Two additional items from the Physical needs sub-scale also loaded onto Security instead of Physical needs: Item 11 "my need for touch and physical contact isn't really being met", and Item 12 "I don't have the right level of variety and stimulation in my life – I'm either bored or overloaded". It is possible that item 11 was interpreted not as relating to a physical need, since touch is typically not considered a biological need in the same manner as food and sleep (Davis, 1999). A second conceptual distinction between this and the other items from the Physical needs subscale is that an individual cannot unilaterally determine whether this need will be met or not. Instead, any perceived need for touch depends upon another person's involvement and consent. Furthermore, although this item refers to a physical sensation of touch, the outcomes of touching presumably relate to cognitive and emotional needs for protection, acceptance and belonging, rather than physiological needs. In this regard, it is perhaps unsurprising this item loaded onto security, as touch is one of the earliest forms of soothing that humans encounter from caregivers (Jean & Stack, 2009). Touching, in fact, appears to innately communicate a sense of safety, trust and solidarity with one another (Davis, 1999).

Lastly with relation to Physical needs, Item 12 references variety and stimulation, which may involve physical sensation. However, variety and stimulation are not necessarily appreciated simply at the physical level. Indeed boredom, which is the result of a lack of variety and stimulation, is typically considered to be a cognitive or emotional state (Cheyne, Carriere, & Smilek, 2006; Goldberg, Eastwood, LaGuardia, & Danckert, 2011). Similarly, 'overload' implies an excess of cognitive or emotional arousal. This confirms that this item may be a candidate for removal or rephrasing.

These issues notwithstanding, the physical factor was found to be a relatively well-defined collection of items with obvious conceptual similarity, with a focus upon

biological, physical needs as determinants of functioning as hypothesised by TST. Future iterations of the TSS will need, however, to evaluate whether the discussed problematic items may be reformulated in order to assess the intended domain, or whether the theory is in need of revision to account for the seeming incompatibility of these ideas with participants' responses.

Security and Connection needs. A number of items from the Security subscale primarily loaded onto Connection, and vice versa. Therefore, items from these subscales will be discussed in turn, even though this is not the order in which the needs appear in the scale. Refer to Tables 11 and 12 for a list of items from each subscale that loaded problematically.

The problematic loadings of these items are divided according to whether they are positively or negatively phrased (with the sole exception of Item 65) which is commonly observed in factor analysis (Maassen, 1991). The pattern of negatively phrased items loading onto Security also emerged among items from the Growth and Achievement subscales, as discussed below. The pattern of findings indicates that participants interpreted negatively phrased items from certain subscales in terms

Table 11:

Items from Security that loaded problematically on Connection

16 – My family makes me feel safe and secure
20 – The fundamentals of my life are dependable and reliable
21* – I have enough money to meet my needs

* Did not load significantly on any factor (although the largest loading was on Connection)

Table 12

Items from Connection that loaded problematically on Security

57 – Maintaining close relationships has been difficult and frustrating for me
61 – I feel lonely
65 – I have a mutually satisfying loving relationship
66 – I feel left out or excluded
69 – I feel isolated from others

that relate to security. One potential explanation is that negatively phrased items evoke considerations of threat (e.g., Item 69, 'I feel isolated from others'), although

this pattern was not uniform across all subscales. For example, numerous negatively phrased items, such as Item 6, 'I don't take very good care of myself', loaded correctly onto the Physical needs subscale, and this pattern was also not borne out in relation to the Contentment needs subscale. These considerations notwithstanding, it is still necessary to explore potential reasons for the fact that all negatively phrased Security items loaded on Connection in particular, and vice versa.

Another problematic item was Item 16, "The fundamentals of my life are dependable and reliable". This item failed to load onto Security needs and instead loaded on Connection, with an additional weak cross-loading onto the Growth subscale. This pattern suggests that the phrasing of this item is ambiguous enough to allow a variety of interpretations. It is possible, for instance, that for many participants, the term "fundamentals" involves ideas of family and close relationships, and in others a foundation for personal development. In other words, different individuals will have differing views on what they consider to be "fundamentals". Perhaps the importance of the phrase "dependable and reliable", which clearly suggests security, may have been undermined by participants focusing instead on the term "fundamentals" because the term is the subject of the sentence. An alternative and potentially less ambiguous phrasing might be "My life circumstances are essentially dependable and reliable." Therefore, this item is yet another candidate for potential removal or rewording.

Additionally, Item 20, "My family makes me feel safe and secure" failed to load onto Security, and instead loaded onto Connection. Perhaps the word "family" primed participants to interpret this item in terms of the quality of their family relationship above their general sense of security. The possibility that an explicit mention of family may have caused participants to override considerations of security lends further support to the ideas expressed regarding Item 16 above. At the same

time, it is difficult to suggest an appropriate alternative phrasing for this item given that the words "safe" and "secure" already feature as the focus of Items 13 and 14, and the word "family" is clearly within the conceptual domain of social connections. This can be seen in Item 63, from the Connection subscale, which references "a good family life". Hence, Item 20 is a candidate for removal from the scale.

Finally from the Security subscale, Item 21, "I have enough money to meet my needs" was problematic. This item did not load onto any factor and its communality indicates that the item has a weak, non-significant, relationship to the factors of Connection, Growth and Security. The broad relevance of money to a variety of domains in a person's life, and the lack of specificity of the question may have prevented participants from interpreting this item as relating specifically to Security needs. Conversely, Item 22, "I feel financially insecure", loaded onto the Security factor, suggesting that the phrasing of this item successfully evoked considerations of security, despite referencing financial considerations. Given the presence of Item 22, Item 21 may be redundant. However, it would be interesting to observe whether subtly reformulating Item 21 to read "I have enough money to meet my *basic* needs" would deliver a different result. These items aside, remaining Security items demonstrated a clear and clean pattern of factor loadings that centered around ideas of safety, security, stability and absence of threat, which together are in accord with the conceptualisation of Security within TST.

The only issues with items from the Connection subscale were the incorrect loadings on Security, rather than any other subscale. These findings indicate that, while Security and Connection are clearly differentiable according to factor analysis (as opposed to Growth and Achievement as discussed below), formulating items that uniquely access one domain and not the other is challenging. This is true even when the item appears to explicitly reference the relevant concepts. For example, "I feel

lonely" and "I feel isolated" explicitly refer to a state of connectedness with others, yet the pattern of responses demonstrated stronger relationships with items addressing security, rather than connection. This likely reflects that social dynamics are complex, and that human relationships are both a source of connection *and* security. It is possible then that the absence of social connection, as distinct from poor quality connections, is a source of considerable insecurity for many people. This is perhaps understandable from an evolutionary perspective, given that humans are a social species, for which survival in the EEA was primarily reliant upon group membership (Caporael & Brewer, 1995). Brewer (2007) terms this "obligatory interdependence" (p. 730), and addressing this issue appears to remain a barrier to achieving a clean factor structure from items within the Connection subscale.

Contentment needs. Approximately half the items from the Contentment subscale loaded onto the intended factor, with the other half incorrectly loading or cross-loading on the Growth/Achievement factor. The one exception to this trend was Item 43, which references physical appearance and instead loaded onto the Physical factor. This finding is arguably unsurprising given that the Physical factor examined eating habits, exercise, sleep and self-care, which are all behaviours that underpin physical attractiveness. There was no discernable pattern in the items that were included or excluded from this subscale regarding their valence (whether they were positively or negatively phrased). See Table 13 for a list of items that loaded correctly or demonstrated problematic loading for reference to the discussion that follows.

Table 13

Correct and problematic factor loadings from the Contentment subscale

Clear and correct loading	Problematic loading

41: My attitude to myself is probably not as positive as most people feel about themselves
44: I like most aspects of my personality
46: I feel I don't have that many good qualities
47: I take a positive attitude to myself
49: I have a strong sense of self respect
50: I wish I could have more respect for myself
53: When I compare myself to others I do not feel so good about myself
55: My belief in myself gets me through hard times

42: I am competent and capable in the areas of life which are important to me
43: I don't feel good about my appearance or my body
45: On the whole I am satisfied with myself
48: I am proud of who I have become
51: In general I feel confident and positive about myself
52: When I look at the story of my life I am pleased with how things have turned out
54: I think of myself as a good and strong person

It is difficult to determine the reasons underlying the trend between the other items that loaded correctly and incorrectly. However, a nuanced examination of the concepts within each item reveals several notable patterns. When looking for similarities between items that correctly load, it becomes relatively clear that all of these items refer to an intrinsic sense of approval or disapproval of the self without requiring respondents to consider their external circumstances or events. Consider, for example, Item 44, 'I like most aspects of my personality'. On the other hand, while Items 41 and 53 require that participants consider themselves relative to other people, this is distinct from considering themselves in relation to their life circumstances. In contrast, incorrectly loaded items such as 42 and 52 clearly require that respondents consider their successes and continuing life challenges in making their self-appraisal. This suggests that items referencing external circumstances may have evoked different considerations than those only referencing the self.

While there are also several problematically loading items that did not specifically reference external circumstances, it is possible that these items evoked their consideration nonetheless. For example, Item 45, "On the whole I am satisfied with myself" may have been interpreted in reference to one's satisfaction with themselves in relation to their achievements. When considering the nature of factor analysis, which essentially organises items into groups based upon high inter-correlations, it seems reasonable that individuals with more positive scores on Growth and Achievement items would also report being more satisfied with themselves. A

similar criticism could be leveled towards Items 48 ('I am proud of who I have become') and Item 51 ('In general I feel confident'). To address these issues, a slight revision in the phrasing of these items might clarify the intended domain. For example, if Item 45 was rephrased as "On the whole I am satisfied with *who I am*", the responses may be more correlated with other items that reference belief, respect and attitudes towards the self.

Understanding the loadings of Item 54 may further rely upon understanding the way in which respondents evaluated themselves in reference to the term "strong". Strong may be considered a metaphor for resilient in everyday language. One's resilience cannot be demonstrated without adversity, hence answering this question may necessitate that respondents consider how they have dealt with external challenges in their personal history. Of course, the above explanation is speculative and it is possible that there are other less apparent explanations for the behaviour of items from the Contentment subscale. Nevertheless, these are considerations worth taking into account when formulating items for future versions of the TSS.

Growth/Achievement needs. As mentioned above, the Growth and Achievement factors were combined, since this generated a more interpretable pattern of factor loadings than retaining separate factors. These results indicate that despite the theory clearly distinguishing between Growth and Achievement, these constructs were not differentiable in participants' responses. Several explanations of this are possible. Firstly, it is possible that the sample is not representative of the population at large, given evidence that the present sample may be high in both achievement and growth. Of the participants from the present study, over 81.3% had completed a qualification beyond their school leaving certificate, which is significantly above the population average of 61% (ABS, 2016). Perhaps those who hold a tertiary qualification are generally proficient at demonstrating sustained effort towards goals

since attainment of a tertiary degree requires a considerable amount of work and time investment over a prolonged period. Because this quality is important to both growth and achievement, these characteristics may indicate that there was insufficient variability within the sample to allow for discrimination between the two factors, despite efforts to recruit participants from backgrounds with varying degrees of hardship. The idea that the present sample is non-representative and particularly high in functioning is also supported by the employment status of participants. Even after excluding participants beyond the retirement age of 65 (some of whom are likely still employed), only 2.4% were unemployed and looking for work, which is below the population average of 5.3% (ABS, 2018). Consequently, results of the present study should be interpreted with these considerations in mind.

Aside from the idea that the present sample was not particularly representative, the failure of Growth and Achievement needs to form separate factors may also reveal one of the limitations of factor analysis. Forming factors relies upon identifying groups of items that are considerably more highly correlated with one another than with items outside of that group (Field, 2009). If there is a uniform pattern of high correlations across items measuring two different constructs, these will be represented in the factor analysis as a single factor. Importantly, any uniform pattern of high correlations does not necessarily suggest that the two correlated constructs are not distinct from one another (Goldberg & Digman, 1994). To illustrate, consider how factor analysis may fail to distinguish between competence in either reading and writing as distinct components of literacy. Competence, or otherwise, in these two domains is generally seen together in most people (Shanahan, MacArthur, Graham, & Fitzgerald, 2006). As such, this correlation may result in a pattern of factor loadings that suggest they are the same construct, whereas clearly this is not the case.

It is possible then that growth and achievement will appear highly co-related in the vast majority of individuals within the population at large. If individuals high in growth are generally also those high in achievement, and similarly for those low in these domains, the constructs would not be differentiable in the statistical analysis. However, there are means of assessing their dissociability. For example, in specific populations we may find unique conditions in which growth and achievement co-occur less frequently. For example, some people in aged care populations may report low growth in their current circumstances, despite reporting high levels of achievement throughout their lifespan (Lawton, Moss, Winter, & Hoffman, 2002; Smith & Freund, 2002). Alternatively, young people, or individuals in the process of recovery or rehabilitation from long-term issues such as addiction, incarceration, or mental health difficulties, may report high levels of growth, even in the absence of a history of high achievement. In short, perhaps growth and achievement are indeed distinct, but the usual co-occurrence of the two factors ensures that this distinction is only demonstrated in specific circumstances that are not dominant within the general adult population.

As with items from all the need categories, consideration must also be given to how the phrasing of the items impacted participants' responses. It is notable that all items that failed to load on the combined Growth/Achievement factor, as shown in Table 14, were negatively phrased and loaded onto Security. In fact, the only negatively phrased item from either the Growth or Achievement subscales to be retained was Item 26: 'I am not growing as a person'. Here we see another example of negatively phrased items loading differently to positively phrased items. As addressed above, perhaps negatively phrased items induced feelings of insecurity in participants, hence the consistency with which these items from three subscales loaded onto Security needs. By way of explaining why items from Growth and Achievement fit

this pattern, it is possible that where people are well-matched to their environment (abilities and values), we can expect them to grow, but when they are not well-matched, we can expect them to not just fail to grow, but to struggle, and to feel both threatened and insecure. In other words, items suggestive of less growth or achievement may have related more to participants' anxieties, than their considerations of progress towards or attainment of goals.

Table 14

Items from Growth and Achievement that loaded on Security

24 – My life is not improving
29 – My life is not expanding – it is stagnant
32 – My life is not really consistent with my personal values (what I think is important in life)
36 – I am not realising my potential
38 – I don't adapt well to change
70 – I feel like many of the people I know have gotten more out of life than I have
72 – I'm not achieving the things that are important to me
74 – I don't feel that good about what I accomplish each day
81 – I have not made the most of the opportunities life presents
83 – In many ways I feel disappointed about my achievement in life

A further possibility that may explain why items from Growth and Achievement both loaded onto the same factor is that the phrasing of items from each category was not sufficiently different to be distinguished in participants' interpretations of the items. For example, Item 79, which is from the Achievement subscale ("I am mastering the things that are important to me"), is similar to Item 27 from the Growth subscale ("My understanding and effectiveness is always growing"). Similarly, Item 85 from Achievement ("I often find myself completely immersed, engaged or absorbed in what I am doing") is very similar to Item 39 from Growth ("I am engaged and interested in my daily activities"). A further example of this is Item 82 from Achievement ("I am realising my dreams and satisfying my deepest yearnings"), which seems like a sufficient condition for affirming Item 33 from Growth ("I am moving towards the things I value"). These examples illustrate that there may have been insufficient difference between many Growth and Achievement

items to allow distinct patterns of responding. Consequently, consideration should be given to enhancing the conceptual distinction between items from these subscales in future versions of the TSS.

It is also noteworthy that all retained items originally from the Growth subscale were phrased according to the present participle. That is, they all contain words using the suffix 'ing'. Consider, for example, Item 24, 'my life is not improving'. Conversely, retained Achievement items were inconsistent in their use of tense. For example, Item 71 is phrased in the past tense ('I've been pretty successful in life'), while Item 73 utilises the present tense ('I am meeting the goals I set for myself'). As outlined in Chapter 3 earlier, Growth refers to the process of working towards future goals in order to benefit oneself and improve one's future circumstances. TST distinguishes this from Achievement, which refers to a sense of satisfaction with one's past and present accomplishments (Franklin, 2018). As such, it is important that there is a clear distinction between these concepts in the way items addressing each are phrased. More specifically, items need to clearly refer to either past achievements or working towards future goals.

Additionally, upon reviewing the items measuring Growth and Achievement, there appears to be a great degree of conceptual similarity between them. Some of the items intended to measure Achievement seem to conflate an ongoing process with a past or present state of affairs. The key issue might lie in the suffix "ing", which is a present, rather than past, participle and implies an ongoing process. A similar criticism can be leveled against Items 73, 77, 80, 82 and 85, as shown in Table 15. Item 76, "I derive a sense of accomplishment from my activities" could also be said to refer to an ongoing process. To address this issue, future versions of the Thrive Survive Survey should take care to phrase Achievement items according to the past

participle. For instance, it would be interesting to observe whether responses to Item 79 ('I am mastering the things that are important to me ') would produce dissimilar responses if phrased "I have mastered the things that are important to me".

Of course, a final consideration that may explain the failure of Growth and Achievement to form separate factors is the possibility that the theory is simply incorrect in distinguishing between these concepts in the first place. TST is the only needs-based theory to distinguish between these concepts.

Table 15

Items from Achievement utilising the present participle suffix "ing"

73 – I am meeting the goals I set for myself
77 – I am successfully meeting my needs, goals and expectations
79 – I am mastering the things that are important to me
80 – I am doing more than just surviving – I am thriving
82 – I am realising my dreams and satisfying my deepest yearnings
85 – I often find myself completely immersed, engaged or absorbed in what I am doing

However, it is worth noting that all of the positively phrased items from the Growth needs subscale were retained and coalesced around a single factor. This demonstrates that Growth items phrased in this way all evoked similar considerations among respondents in the present study. On the whole, this is a well-defined factor with concepts that obviously relate to growth, characterised by learning, development, moving forward and progress, as hypothesised within TST. Therefore, it appears that the focus of any revision should be primarily on the Achievement subscale. The above issues should be addressed in future research to determine whether Achievement is distinguishable with consistent item phrasing, a sufficient degree of conceptual difference between Achievement and Growth items, and when applied to an appropriate population.

Predicting SWB from the TSS subscales. Hypotheses 2, 3 and 4 were investigated using regression analysis. In terms of determining the strength of relationships, no standardised categories exist demarcating small, medium and large effect sizes for regression coefficients. However, it is reasonable to use Cohen's

guidelines for Pearson's correlations (Cohen, 1992) since r and β values are identical in simple linear regression, whereas in multiple regression, β values are based on r values after adjusting for the predictive value of other independent variables.

Hypothesis 2. Hypothesis 2, that higher scores in meeting the need factors would predict an increase in life satisfaction and positive affect and a decrease in negative affect, was partially supported. While each needs domain was observed to positively impact upon positive affect, Physical needs failed to predict negative affect. Furthermore, Growth/Achievement, Connection and Security were all significant predictors of life satisfaction, while Physical and Contentment needs were non-significant. All other relationships were as expected. Of note, Growth/Achievement only predicted negative affect after the exclusion of several influential cases. This was the only non-trivial difference that emerged following the exclusion of influential cases.

What follows is discussion about the results as related to life satisfaction. Results related to positive and negative affect are discussed further in the section addressing Hypotheses 3 and 4.

The results related to life satisfaction are similar to those obtained in a previous investigation of the TSS (Walsh, 2014) with some key differences. In the original investigation, Security was the strongest predictor of life satisfaction, followed by Growth/Achievement and Connection. Conversely, the present study found Growth/Achievement to be the strongest predictor, with Connection and then Security following. The non-significance of Physical and Contentment needs was common to both studies. The specific order of importance of the significant predictors may reflect different sample characteristics between the two studies, or may rely upon differences in the handling of problematic items in the factor analysis (see the earlier discussion in rationale for the present study, p. 67, and factor structure of the TSS, p.

87). What follows is an examination of each of the TST needs in turn as they relate to prior research on life satisfaction, in order to justify these outcomes as criteria for the concurrent validity of the TSS.

Physical needs. The finding that Physical needs did not significantly predict SWL in the present study is somewhat surprising. This result does not appear to indicate a problem with the Physical needs subscale, which performed as expected at the correlational level. That is, the subscale demonstrated a pattern of positive correlations with all other need domains, as well as with positive and negative affect, and with SWL. However, the Physical needs failed to predict SWL after the remaining four needs were included in a multiple regression model. This indicates that Physical needs did not uniquely explain a significant amount of variability above and beyond that which was already accounted for by the other needs domains.

Perhaps the most compelling explanation of the discrepancy between the hypothesis and the present study's results relating to Physical needs arises when considering the reason regression coefficients differ from correlation coefficients. Regression coefficients take into account intercorrelations; correlation coefficients do not. The included control variables in the present study, in the form of the additional TST needs domains, share explained variance in life satisfaction, thereby nullifying the significance of Physical needs. In other words, the importance of Physical needs as a predictor of life satisfaction in the present study appears to be masked within the regression model due to the strong association between Physical and other needs domains. This is demonstrated in Appendix M, which shows that Physical needs exhibited significant large correlations with each domain of SWB, despite failing to achieve significance as a predictor in the regression model for SWL. Therefore, Physical needs would be predictive of SWL when entered into a regression model in isolation.

This finding is consistent with existing literature examining the relationship between general physical health and function, and life satisfaction. For example, Sexton, Bennett, Fahey, and Cahir (2017) examined the impact of physical health impairments to satisfaction with life in elderly individuals. They found that the presence of chronic health conditions, and the consequent limitations on activity, resulted in medium to large detriments in life satisfaction. Rivers et al. (2018) also found that for patients suffering from spinal injury, a greater level of motor function impairments predicted lower satisfaction with life, and having a higher number of health conditions in general, independently predicted lower life satisfaction. A study of the general population in Finland supported the idea that even among those whose physical health did not preclude them from employment, long-term illness or injury was predictive of lower life satisfaction (Griep et al., 2016).

While Physical needs as a singular construct are not included in most needs-based theories, there is nevertheless literature that directly addresses the subcomponents of TST's Physical needs domains, such as sleep quality, diet and exercise. A large body of research indicates a relationship between poor sleep quality and adverse mental health outcomes (Chang, Ford, Mead, Cooper-Patrick, & Klag, 1997; Furihata et al., 2015; Maglione et al., 2014; Öztürk et al., 2015; Park, Yoo, & Bae, 2013; Paudel et al., 2013; Szklo-Coxe, Young, Peppard, Finn, & Benca, 2010; Yokoyama et al., 2010; Zhai, Zhang, & Zhang, 2015). There is less research directly linking sleep quality with satisfaction with life, although a handful of studies consistently show that those who sleep poorly report lower levels of life satisfaction (Kelly, 2004; Paunio et al., 2008; Shin & Kim, 2018; Zhi et al., 2016). Similarly, numerous studies link diet quality to mental health outcomes, where low quality involves low nutritional value, high caloric content, and an abundance of processed food. Findings reliably demonstrate that poor diet quality is associated with increased

incidence of mental health issues and vice versa (Gomez-Pinilla, 2008; Jacka, Kremer, et al., 2011; Jacka, Mykletun, Berk, Bjelland, & Tell, 2011; O'neil et al., 2014). There is little research investigating the impact of diet on life satisfaction directly, however. A notable exception is a study by Kwon, Park, Lim, and Chyun (2013), which found that good diet was correlated with higher levels of life satisfaction in adolescents. Finally, research investigating the impact of exercise on life satisfaction indicates a positive relationship between the two (Grant, Wardle, & Steptoe, 2009; Maher, Pincus, Ram, & Conroy, 2015; Schnohr, Kristensen, Prescott, & Scharling, 2005; Tasiemski, Kennedy, Gardner, & Taylor, 2005; Valois, Zullig, Huebner, & Drane, 2004).

Security needs. There are two broad components of Security needs assessed by TST that may be related to previous research: financial security and exposure to threat, danger, and instability. The factor structure of the present study supports the notion that these distinct components of Security needs should be considered together, since they are highly related. However, given that most existing needs-based theories do not include Security needs, there is a lack of research investigating the relationship between life satisfaction and security needs as a single construct. Therefore, it is necessary to examine prior research on the separate components of security needs in isolation.

In relation to financial security, evidence suggests that higher incomes predict greater life satisfaction at the national level (Böhnke, 2008; Fahey & Smyth, 2004). As a notable example of a profound change in individual income within a short time span, Frijters, Haisken-DeNew, and Shields (2004) found that in the ten years following reunification of East and West Germany, a pronounced increase in life satisfaction was observed, 35-40% of which was accounted for by increases in household income. However, the importance of financial security to life satisfaction

appears to depend upon the relative prosperity of individual nations. For example, for people living in wealthy nations, social connections are stronger predictors of life satisfaction than financial security need (Oishi, Diener, Lucas, and Suh, 1999)s; this pattern is reversed in poorer nations. As might be expected, given that Australia is a relatively wealthy country, the present study's findings are consistent with this idea.

These findings appear to be consistent when also applied to individuals. The lack of financial security associated with unemployment significantly lowers one's reported life satisfaction, and this impact can be long-lasting or even permanent (Lucas, Clark, Georgellis, and Diener, 2004). Additionally, life satisfaction is predicted by perceived financial situation (Johnson and Krueger, 2006). Interestingly, the strength of this effect was smaller than the impact of perceived control over one's life circumstances, which relates more to Security needs, as it concerns exposure to threat, instability or danger, as discussed in the paragraphs below. However, the benefits of increased financial security on life satisfaction appear to be attenuated for above-average income earners (Aknin, Norton, & Dunn, 2009; Diener & Biswas-Diener, 2002). That is, as income increases beyond the point at which one's financial security is assured, additional wealth has minimal impact upon life satisfaction. Some of the impact of income on life satisfaction may be attributable to the way in which this question is presented to respondents (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006). These findings provide support for the inclusion of items addressing financial considerations to the Security needs subscale in the TSS.

In relation to the Security needs concerning exposure to risk, numerous studies outline the negative impact of exposure to threat, danger, and instability on life satisfaction (Cairns, 1996; Danieli, 1996; Garbarino & Kostelny, 1996; Jensen, 1996; Lucas et al., 2004; Osofsky, 1998; Shamai & Kimhi, 2006). These findings appear to be consistent across cultures, socio-economic circumstances, and various forms and

levels of threat and instability (Böhnke, 2008). A relatively accessible population with extreme exposure to threat and instability is found among those living in Israel. Shamai and Kimhi (2006) demonstrated that greater exposure to threat negatively predicts life satisfaction among teenagers in Israel. The political instability and the possibility of upheaval in social circumstances among this population also predicts lower levels of life satisfaction in this population (Shamai & Kimhi, 2007).

The detrimental impact of threat and instability on SWL can also be demonstrated in less extreme circumstances. Rezaei and Jeddi (2018) used Cohen's *Perceived Stress Scale* to measure the extent to which college students felt their lives were unpredictable, unmanageable, or out of control. Those who were higher in perceived stress reported lower levels of life satisfaction. Similarly, for school students, school-related stress predicted lower life satisfaction (Moksnes, Løhre, Lillefjell, Byrne, and Haugan, 2016). The above research emphasises the significance of threat and instability to feelings of security.

Despite the apparent consistency between prior research and the present study's findings, the results of the present study do not distinguish between the different components of Security needs in their relative impact upon life satisfaction. That is, it is not possible to determine the extent to which financial security contributed towards life satisfaction relative to the presence of instability and threat in respondents' lives. Nevertheless, the present findings support the notion that low levels of financial security, instability in one's life circumstances, and exposure to threat in combination account for lower levels of life satisfaction.

Contentment needs. The non-significance of Contentment needs appears to be largely in disagreement with the wider extant literature investigating self-esteem (Diener & Diener, 1995; Kang, Shaver, Sue, Min, & Jing, 2003; Oishi, Diener, Lucas, et al., 1999), which shows a stable link with life satisfaction across time and culture.

However, once again, when looking at the table of correlations, Contentment needs were significantly associated with all three components of SWB, including life satisfaction. This again indicates that Contentment needs do show a relationship with life satisfaction, even if not explaining unique variability after accounting for the other needs in a regression model.

Interestingly, Oishi, Diener, Lucas, et al. (1999) found the related construct of self-esteem needs to be a more important predictor of SWL in individualist nations, such as Australia (Bhawuk, 2017). While self-esteem is not perfectly congruent with TST's notion of Contentment, the constructs overlap considerably. Self-esteem therefore provides an appropriate basis for comparison with existing research. Nevertheless, any discrepancy between results obtained in self-esteem research and the present study may be partially explained by the narrower conceptualisation represented by self-esteem relative to Contentment needs, or by differences in the scope of the measurement instruments used. For example, Oishi, Diener, Lucas, et al. (1999) relied on only a single item to assess self-esteem needs, which asked participants about their satisfaction with self. Relying on single items can limit the content validity of the construct being measured (McIver & Carmines, 1981). As TST's conceptualisation of Contentment is considerably more comprehensive, and the measurement of this construct more complete, it may indicate a more valid measurement of this concept than offered by the above-mentioned self-esteem research.

Growth/Achievement needs. Numerous studies report that progress towards and attainment of goals predicts life satisfaction. For example, Emmons (1986) found a significant positive correlation between previous success and anticipated future success in goal fulfillment, and life satisfaction. A meta-analysis by (Little, 1989) concluded that progress towards goals was predictive of life satisfaction. More

recently, Judge, Bono, Erez, and Locke (2005) demonstrated that successfully pursuing and attaining goals directly predicted satisfaction with life. Oishi and Diener (2009) concurred, while demonstrating that despite differences in the nature of goals cross-culturally, the relationship between goals in general and life satisfaction remains valid. Recalling that these criteria are the essential components of the Growth and Achievement needs within TSS, the results of these studies are consistent with the present finding that Growth/Achievement was the strongest predictor of SWL.

Brunstein (1993), found that perceptions of progress towards valued goals were associated with an increases in SWB. While this study did not investigate the components of SWB separately, we can draw parallels with the present study, whereby Growth/Achievement needs were significant in predicting each of the components of SWB. Brunstein (1993) utilised a multi-wave longitudinal design across four time points, whereby progress at a particular time predicted SWB at each following time point, even after controlling for attainability of and commitment towards the goals. Finally, this relationship appears to be consistent whether examining progress towards specific, defined goals, as well as the more abstract notion of goals in general as individually determined. For example, a study by Garriott, Hudyma, Keene, and Santiago (2015) found that progress towards clearly defined academic goals predicted success, which in turn predicted life satisfaction in a sample of university students. Together, these studies provide strong support of the present study's conclusion that Growth/Achievement is a significant contributor to one's satisfaction with life, and this relationship appears stable across time and culture.

Connection needs. Connection needs were the second strongest predictor of SWL in the present study. This finding is not unexpected, considering there is a great deal of research supporting the notion that interpersonal relationships are important

predictors of life satisfaction (Argyle, 2013; Carlson & Kacmar, 2000; Erdogan, Bauer, Truxillo, & Mansfield, 2012; Laghi, Pallini, Baumgartner, Guarino, & Baiocco, 2016; Lucas, Dyrenforth, & Diener, 2008; Mellor, Stokes, Firth, Hayashi, & Cummins, 2008). A majority of this research has tended to focus on the impact of friendship and marriage (Myers & Diener, 1995). However there is growing evidence demonstrating that supportive work relationships are also important (Bowling, Eschleman, & Wang, 2010; Fusilier, Ganster, & Mayes, 1986; Huffman, Watrous-Rodriguez, & King, 2008; Michel, Mitchelson, Kotrba, LeBreton, & Baltes, 2009).

The literature on relationship quality and life satisfaction is extensive, and a few key examples serve to illustrate the point. Laghi et al. (2016) and Nickerson and Nagle (2004) found that the attachment quality of both parent and peer relationships were significant positive predictors of satisfaction with life among adolescents, with family relationships demonstrating a larger effect size. Carlson and Kacmar (2000) concur that family relationships are a core determiner of life satisfaction, demonstrating double the impact of job satisfaction. Similarly, Oishi, Diener, Suh, and Lucas (1999) showed that family and social relationships were more important contributors to life satisfaction than achievement in activity domains, such as attaining good grades. Research investigating personality factors demonstrates that those with more social inclinations, as exemplified by extraversion, are more likely to be high in life satisfaction (Heaven, 1989; Kim, Schimmack, Oishi, & Tsutsui, 2018; Schimmack, Oishi, Furr, & Funder, 2004). Altogether, this pattern of findings is consistent with those of the present study.

While it is tempting to conclude from the present findings, and those of previous research, that relationship quality is the cause of increased life satisfaction, there is some evidence that this relationship may actually be reversed (Lucas et al., 2004; Stutzer & Frey, 2006). That is, happy people may be more likely to engage in

healthy relationships than those who are unhappy. Alternatively, this relationship may be bidirectional (Stutzer & Frey, 2006). This phenomenon is reflected in more general claims by Fredrickson (2004) in broaden and build theory. The theory posits that positive emotional states encourage general approach behaviours, which include networking and relationship building, thereby facilitating the development and maintenance of social bonds, which in turn feed back into positive outcomes for happiness and well-being. Overall, there is no debate about the connection between relationship quality and life satisfaction, or SWB more broadly. Instead, the debate centers around the magnitude and direction of this effect relative to other predictors, such as income and health (Lucas & Dyrenforth, 2006; Lucas et al., 2008). The results of the present study are highly consistent with the above-mentioned research on relationships, and further emphasise the importance of quality relationships to healthy psychological functioning.

Hypothesis 3. The third hypothesis, that the Survive needs would be the strongest predictors of negative affect, was not supported by the results. Physical needs failed to predict negative affect at all and Security needs were second to Contentment in terms of effect strength, contradicting TST's suggestion that the Survive needs should be stronger predictors of negative affect than any of the Thrive needs. Regardless of this discrepancy, the position of Security needs among the top two predictors was in line with expectations.

Contentment needs. It is perhaps unsurprising that Contentment was the most powerful predictor of negative affect when considering evidence outlining the detrimental impact of low self-esteem and low self-compassion on mental health (Lewinsohn, Rohde, & Seeley, 1994; Orth, Robins, & Meier, 2009; Orth, Robins, Widaman, & Conger, 2014; Rieger, Göllner, Trautwein, & Roberts, 2016; Wichstrøm, 2000). Several studies have investigated the relationship between self-esteem and

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self-compassion and negative affect specifically, with findings indicating a positive correlation between these constructs (Krieger, Hermann, Zimmermann, & Grosse Holtforth, 2015; Leary, Tate, Adams, Batts Allen, & Hancock, 2007; Neff & Vonk, 2009; Nezlek & Plesko, 2001). What this indicates for TST is that positive self-regard, as encapsulated within Contentment needs, is an important protective factor against the experience of negative affect.

Physical and Security needs. More surprising, however, was the finding that Physical needs were non-significant in the prediction of negative affect. This appears contrary to the findings of several studies suggesting a link between poverty and increased rates of mental illness (Haushofer, de Laat, Chemin, & Archambault, 2012; Haushofer & Shapiro, 2016; Heflin & Iceland, 2009; Lund et al., 2010). Moreover, basic needs were among the strongest predictors of negative affect in large multi-national samples (Diener, Ng, Harter, and Arora, 2010; Tay and Diener, 2011). However, comparing these finding with the present study is complicated by the fact that the basic needs were treated as a single variable, making it impossible to distinguish outcomes related to the Physical and Security needs in TST separately. Additionally, the researchers measured basic need fulfillment according to respondents' access to food and shelter, which a much narrower conception than that encompassed by the Survive needs in TST.

These complications highlight the importance of measuring physical and security needs separately, rather than treating them as a composite. This point is further emphasised by the distinction between the factor structure of these two categories within the present study. The absence of prior research investigating this distinction can be largely explained by the fact that most dominant needs-based theories do not include basic needs categories. A notable exception, as outlined earlier, is Maslow's Theory of Human Motivation (1943), which incorporates

Physiological and Safety needs. These categories are broadly equivalent to the Survive needs in TSS. However, Maslow did not construct a scale to measure the constructs within his theory. Although, others have attempted to develop scales operationalising Maslow's hierarchy (Lester, 1990; Strong & Fiebert, 1987; Taormina & Gao, 2013), these have gained limited traction in well-being research and there are no studies investigating the relationship between these scales and positive or negative affect. Understandings of well-being would be enhanced by future research investigating this distinction, to determine whether the present study's findings indicate that physical needs are truly not as important to negative affect as hypothesised, and whether physical needs may play a larger role in different populations.

Nevertheless, the non-significance of Physical needs in the regression model does not indicate that Physical needs were unrelated to negative affect. Correlations appeared as expected, with Physical needs significantly correlated with negative affect (see Appendix M). As explained above, the seeming disparity between results in the correlation and regression analyses is explained by the presence of covariates. Perhaps the above-mentioned studies, which found such an effect, might also have failed to do so, had they controlled for the additional factors examined in the present study.

Connection needs. The importance of Connection as a predictor of negative affect in the present study is consistent with evidence demonstrating a link between relationship distress and depression (Teo, Choi, & Valenstein, 2013; Whisman, 2001; Whisman & Uebelacker, 2003). Indeed, relationship breakdown is one of the most prominent risk factors for suicidality (Batterham et al., 2014; Cantor & Slater, 1995; Hillman, Silburn, Zubrick, & Nguyen, 2000; Kõlves, Ide, & De Leo, 2012; Kposowa, 2000, 2003; Kyung-Sook, SangSoo, Sangjin, & Young-Jeon, 2018; Wyder, Ward, &

De Leo, 2009). Additionally, lack of social support is similarly associated with negative mental health outcomes (Jacobson, Lord, & Newman, 2017; Reid, Holt, Bowman, Espelage, & Green, 2016; Rueger, Malecki, Pyun, Aycock, & Coyle, 2016; Siedlecki, Salthouse, Oishi, & Jeswani, 2014).

Growth/Achievement needs. Growth/Achievement significantly predicted negative affect in the present study. Goal achievement is a component of many items in the Growth/Achievement subscale, making it a relevant focal point for discussion. Numerous studies show that successful goal striving and achievement is negatively associated with negative affect (Clarke, Oades, Crowe, Caputi, & Deane, 2009; Conrad, Doering, Rief, & Exner, 2010; Maier & Brunstein, 2001; Ouweneel, Le Blanc, & Schaufeli, 2013; Smith, Ntoumanis, & Duda, 2007). For example, Hofmann, Luhmann, Fisher, Vohs, and Baumeister (2014) found that those who are able to exercise self-control in order to focus on their primary goals, to the exclusion of other distractions, reported lower levels of negative affect. This finding is relevant to the TST Growth/Achievement needs, as self-control is a necessary component in order to promote both.

Established research investigating the relationship between goal achievement and mental health issues more broadly also consistently shows the two to be negatively associated. For example, Hall, Sampasivam, Muis, and Ranellucci (2016) found that higher levels of perceived progress were associated with a decrease in negative emotional states such as anxiety and boredom. In a randomised control design, Knittle, Gellert, Moore, Bourke, and Hull (2016) demonstrated that incremental achievement of individually valued goals led to a reduction in depressive symptoms. This finding is particularly pertinent as it indicates direction of effect and allows strong claims towards causality. Furthermore, a longitudinal study by Defoe, Farrington, and Loeber (2013) found that low academic achievement was associated

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with increased depression. Pekrun, Lichtenfeld, Marsh, Murayama, and Goetz (2017) also found a reciprocal relationship between educational achievement among adolescents and negative emotional states such as anger, boredom, hopelessness, shame and anxiety. Together, these findings demonstrate a consistency between the existing literature and the results of the present study.

Hypothesis 4. In accord with the fourth hypothesis, the Thrive needs were more stronger predictors of positive affect than the Survive needs. Connection, Growth/Achievement and Contentment needs respectively were the most potent predictors of positive affect. Physical and Security needs were also both positive predictors and were equal in their effect size. Despite the finding that positive and negative affect are separate and distinct constructs, much of the abovementioned research demonstrating relationships between needs domains and negative affect reveals inverse relationships regarding positive affect. That is, the absence of conditions promoting negative affect are often associated with the presence of positive affect. As such, rather than repeating the points made regarding negative affect, the following section on positive affect will attempt to cover this content below.

Connection needs. The findings of the present study are consistent with past research indicating a strong relationship between happiness and relationship quality and positive social experiences (Berry, Willingham, & Thayer, 2000; Fitness & Williams, 2013; Fredrickson, 2001; Larson & Richards, 1991; McIntyre, Watson, Clark, & Cross, 1991; McIntyre, Watson, & Cunningham, 1990; Ramsey & Gentzler, 2015; Ryff & Keyes, 1995a; Stanton, Campbell, & Loving, 2014; Vittengl & Holt, 1998, 2000; Weinstein, Mermelstein, Hedeker, Hankin, & Flay, 2006). This body of literature provides strong support for the notion that positive relationships, from friendships, family and romantic partners are a central component to the experience of

positive emotion. Given the strength and consistency of this finding, it is unsurprising that Connections needs were the strongest predictors of positive affect in this study.

Growth/Achievement needs. Just as the absence of goal achievement is associated with negative emotional states, so too is its presence predictive of positive emotion. Ouweneel et al. (2013) found higher levels of engagement in goal-directed activity within the workplace to be associated with greater levels of positive emotion. Hall et al. (2016) demonstrated that progress towards goals predicted the experience of positive emotions, such as hope and enjoyment. Likewise, Smith et al. (2007) showed that goal attainment strongly correlated with positive affect. What this indicates is that previous research justifies the use of positive affect as an outcome measure in the demonstration of convergent validity in the present study.

Contentment needs. Contentment was the third strongest predictor of positive affect. Again, this result is reflected in a range of extant research, particularly that investigating self-esteem and self-efficacy. For example, Krieger et al. (2015) showed that higher levels of self-esteem was associated with an increase in positive affect. Joseph, Royse, Benitez, and Pekmezi (2014) demonstrated the same relationship among university students, particularly as related to confidence in their physical attributes. In a cross-sectional study, Benetti and Kambouropoulos (2006) observed that positive affect was positively associated with self-esteem. Additionally, Ouweneel et al. (2013) demonstrated that improvements in self-efficacy were related to improvements in the experience of positive emotions. Taken together, these findings indicate that not only is fulfillment of Contentment needs protective against the experience of negative affect, it is also associated with the experience of positive affect.

Physical needs. The criticism mentioned above, regarding research that fails to distinguish between the impact of Physical and Security needs separately on negative

affect, also applies in relation to positive affect. Regardless, the landmark study by

Tay and Diener (2011) investigating need-fulfillment in different major geographical

regions, is still relevant. They found that fulfillment of basic needs (which are

equivalent to TST's Physical and Security needs together) was positively associated

with positive affect globally, and within every single region. Examining components

of the Physical needs subscale reveals a similar pattern of findings. For example,

access to healthy and nutritious food is predictive of positive affect (Warner, Frye,

Morrell, & Carey, 2017). Likewise, higher sleep quality, which is a component of the

TST Physical needs, has also been linked to greater levels of positive affect

(Kalmbach, Pillai, Roth, & Drake, 2014; McCrae et al., 2008; Steptoe, O'Donnell,

Marmot, & Wardle, 2008).

Security needs. Studies investigating the separate components of the Security

needs subscale, report that income is related to financial security, which is a

component of Security needs in TST. Studies show household income is positively

correlated with increased positive affect at both the individual and national level

(Diener, Sandvik, Seidlitz, & Diener, 1993; Diener, Tay, & Oishi, 2013; Jebb, Tay,

Diener, & Oishi, 2018; La Barbera & Gürhan, 1997). An interesting finding relates to

the level at which increased income does not contribute further to positive affect. This

point differs across nations, however the pattern is consistent (Jebb et al., 2018). In

Australia the level is around 50,000 USD. While there is research investigating the

relationship between threat and negative emotional states (Shamai & Kimhi, 2006,

2007), a review of the literature reveals an absence of research specifically

investigating this relationship in regards to positive affect. However, studies

investigating a relationship between perceived threat, in the form of anxiety, reveal

relationships as expected. For example, re-examining the original study validating the

Positive and Negative Affect Scale, reveals a moderate negative correlation between

state anxiety and positive affect. (Watson et al., 1988). A similar result is found for validations of the SPANE, as used in this study (Corno, Molinari, & Baños Rivera, 2016). It appears intuitive to assume that absence of actual threat and danger would also be correlated with an increase in positive affect. The findings of the present study support this notion, and pave the way for future research investigating this link.

General discussion. The findings of the present study support the construct validity of the TSS, as results demonstrated a clear factor structure, which is largely in accord with both the theoretical basis of TST and previous research using the TSS. The most significant departure from the factor structure proposed by TST was the finding that the Growth and Achievement needs domains combined to form a single factor, rather than forming separate factors, which is largely in accord with previous research using the TSS (Walsh, 2014). Together, the three regression models largely supported the convergent validity of the TSS, when applied to the revised five-factor model, which is in accordance with Mackenzie et al.'s (2011) stage-based approach to scale validation.

Utilising the revised five-factor model, correlations revealed test scores for the TSS were significantly associated with constructs that were demonstrated to be conceptually similar within the literature, namely, positive and negative affect, and satisfaction with life. Regression analyses revealed that Hypothesis 4 was fully supported, whereby all need categories were significant predictors of positive affect. Furthermore, as hypothesised, the Thrive needs demonstrated larger effect sizes than Survive needs in predicting positive affect. Results relating to negative affect and life satisfaction were mixed in their support for TST. Physical needs failed to predict negative affect after controlling for other factors, and Security needs were the second most potent predictor after Contentment. This contradicted the hypotheses that all needs domains would predict negative affect and that Survive needs would be more

powerful predictors than Thrive needs. In regards to life satisfaction, Physical needs and Contentment needs were non-significant predictors, also contrary to the hypothesis that all needs domains would be significant. As mentioned above, despite the non-significance of some needs domains in predicting negative affect and life satisfaction, at the correlational level, all needs were significant. This demonstrates that the failures to predict the expected outcomes occurred as a result of controlling for other needs domains, rather than indicating a lack of relationship altogether.

Taken together, these results provide an important step towards demonstrating construct validity of the TSS. To demonstrate predictive validity, a longitudinal design would be necessary, with the best possible evidence arising from a randomised controlled experiment where the treatment group would undertake successful intervention to improve a single domain of needs satisfaction. This point will be further elaborated below in discussion of future research directions.

Strengths and limitations. A number of strengths and limitations within the present study should be considered in the interpretation of results. In terms of strengths, the relatively large sample size of 598 participants provided a good foundation upon which to investigate the factor structure of the TSS. Additionally, the dependent variables, namely the SWLS (Diener et al., 1985) and the SPANE (Diener, Wirtz, et al., 2010) are psychometrically sound measures, demonstrating good validity and reliability.

Three limitations are worth mentioning, however. Firstly, the decision to recruit participants mostly using snowball sampling, and primarily through social media, can result in collections of participants who are non-random in their social connections (Baltar & Brunet, 2012). This is potentially problematic given evidence suggesting that individuals tend to affiliate with others who are like-minded, have similar interests, or find themselves in similar cultural and vocational contexts

(McPherson, Smith-Lovin, & Cook, 2001). These considerations introduce the possibility that the sample is biased towards higher educated individuals who have an interest in well-being research, are relatively literate in their use of computers, and are active on social media. This point is emphasised when considering that, while participants from a considerable number of countries contribute towards present study's sample, the majority are from Western, English-speaking nations, further calling into question the cross-cultural generalisability of the study's results. Thus, the use of a snowball sample may have negatively impacted on the external experimental validity of the present study.

Secondly, the cross-sectional nature of the present study limits the possibility of determining causality of the results, as explained by MacKenzie et al. (2011). Specifically, it does not manipulate temporal contiguity and contingence. In other words, due to a lack of temporal separation between measurements in the present study's design, and a lack of demonstration that changes in SWB outcomes depend upon manipulations of needs, the direction of causality is indeterminate. While the results of the study are broadly consistent with a causal model of the impact of needs on subjective well-being, they cannot alone provide substantial evidence in favour of this contention.

Thirdly, the present study utilised only the SPANE (Diener, Wirtz, et al., 2010) and SWLS (Diener et al., 1985) as outcome measures. While these measures are widely used in happiness research, they assess only hedonic well-being. Future studies may wish to incorporate a measure of eudaimonic well-being, such as Ryff's (1989) Scale of Psychological Well-being. Additionally, it would be interesting to investigate the relationship between TST needs domains and measures of optimism, such as the Life Orientation Test (Scheier & Carver 1985), or the Attributional Style

Questionnaire (Peterson, Semmel, von Baeyer, Abramson, Metalsky & Seligman, 1982).

Implications and future research. The present study highlights five major issues that can inform future research: (i) Some of the items failed to load clearly on the intended factor; (ii) There was no distinction between the Growth and Achievement needs; (iii) The present study relied on snowball sampling utilising a relatively affluent and well-educated demographic, raising questions about the generalisability of the factor structure in the present study; (iv) It is unknown whether the relative potency of needs in the regression analysis reflects the particular characteristics of the specific sample, rather than being universal, as intended by Franklin (2013, 2018); (v) The study is cross-sectional, meaning that claims cannot be made about the causal impact of needs on well-being.

As detailed above, numerous items in the TSS demonstrated problematic factor loadings. This was an issue that affected all TSS needs domains to some degree. It is unclear whether problematic factor loadings indicate that the phrasing of certain items should be altered, or whether it reflects a problem with the theory underpinning the TSS items (for example, whether touch is primarily a Physical need, as TST proposes). In other words, an important question remains concerning whether the presentation of the item content is responsible for the problematic loadings, or whether there exists an issue with the content and theory itself. To address this, future research needs to consider using alternative phrasing of problematic items (as described above). As a start, theorists with particular expertise in TST are needed to evaluate whether the items within the revised scale are sufficiently comprehensive to encompass each of the needs domains. In addition to this, linguistic and psychometric experts may also be able to offer superior alternative phrasings to those proposed in the initial wording of the TSS items.

Future research may also benefit from employing a structured interview component where each participant's interpretation of items may be examined. For example, Item 8, "If I'm honest, I probably overuse alcohol or other drugs", may evoke ideas ranging from social acceptability, personal perceptions of impairment, or thoughts related to the health implications of drug and alcohol use. Such a structured interview may reveal a lack of homogeneity within participants' interpretations of the intended meaning of this and other items, and reveal ways in which the researchers' intentions may be made less ambiguous.

Related to the issue above, it is not possible to determine whether the apparent lack of distinction between the Growth and Achievement factors is due to item phrasing, participant characteristics, or lack of real distinction at the theoretical level. As discussed earlier, it is possible that the relatively high-achieving (i.e. highly educated and frequently employed) characteristics of the study's sample might impact the distinguishability of these constructs. In other words, within a sample demonstrating both achievement and growth, these factors will not be differentiable. To resolve this issue, replication studies should specifically identify and target demographics that are not expected to show simultaneous high growth and high achievement. For example, elderly people may experience relatively low levels of growth, despite being high in achievement, due to a reduction in active goal setting later in life (Lawton et al., 2002; Smith & Freund, 2002).

A second reason for recruiting participants from diverse populations in future research is to further evaluate construct validity of the TSS. This may be partially demonstrated through replication and generalisabilty of the factor structure in the present study among samples with different characteristics. Given the potential issues discussed regarding the use of snowball sampling, future studies may wish to make use of alternative sampling strategies, such as using a stratified or quota sample.

Administering the TSS in different populations may also reveal additional issues regarding the interpretation and phrasing of certain items. If a clear five or six-factor solution does not emerge in samples with different characteristics, the structure of TST presumably requires revision at the theoretical level, given the hypothesised universality of the TST needs domains (Franklin, 2013, 2018).

Further evidence for construct validity could also be obtained in future studies by examining the extent to which TST domains correlate with similar and dissimilar domains from other needs-based theories, such as Ryff's (1989) Psychological Well-being Theory, and Deci & Ryan's (2000) Self-Determination Theory. This would allow for further evaluation of the TSS's convergent and discriminant validity respectively. In this respect, it is unknown whether the TST needs domains would be similar in their relationship with SWB when applied to samples with different demographic characteristics, such as those from collectivist cultures, or those from less well-off nations. This is particularly relevant, given that Franklin (2013) asserts that the potency of particular needs increases in situations of deprivation. For example, as discussed earlier, Security needs appear to be more prevalent and prominent among individuals who are living in regions where there is conflict. Studies recruiting individuals at different stages of need fulfillment would thus contribute to investigations of the universality of TST.

In a similar fashion, future research could broadly examine relative need potency at different developmental stages. Franklin (2013) proposes that the relative importance of each need differs for adults compared with children and adolescents. Specifically, Franklin predicts that among younger age groups, the Connection needs are more important than the remaining Thrive needs. On the other hand, Growth needs are conceptualised as being the most potent Thrive need for adults. The sample of the present study was restricted to individuals over the age of 18, hence no analysis

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could be conducted to determine whether need potency varied according to mature and less mature individuals. Therefore, future researchers should consider recruiting both primary and secondary school participants. Such an investigation would clarify the relative priority of the needs domains, across these developmental stages.

Ultimately, the utility of well-being research is dependent upon its usefulness in informing intervention strategies. Franklin proposes that TST, and the TSS, can be important theoretical and psychometric tools in the use of personal coaching and general psychological treatment (Franklin, 2018). By identifying the components of the needs that contribute towards SWB, TST also provides opportunity to assist in the development and evaluation of therapeutic interventions that may empower people to cultivate the skills and resources necessary to meet these needs and improve their SWB. Justifying needs domains as therapeutic targets necessitates a demonstration that changes in needs satisfaction, as measured by the TSS, *cause* changes in well-being. This may be accomplished through randomised waitlist-controlled studies that target individual needs domains, while controlling for any changes in remaining needs. If improvements in needs satisfaction result in greater improvements in SWB than for a control group, this would provide preliminary evidence of a causal relationship, which would contribute further towards demonstrating construct validity (MacKenzie et al., 2011). Such a study may also monitor participants over an extended follow up period in order to determine whether the improvements in SWB are sustained, and whether any subsequent further improvement (or deterioration) regarding needs satisfaction results in commensurate changes in SWB. This would also help establish the predictive validity of the TSS. Such studies may provide important insights into new ways to promote well-being.

Conclusion

The aim of this thesis was to perform a psychometric evaluation of the Thrive Survive Survey to assess its validity and reliability as an assessment of the proposed needs within Thrive Survive Theory. This study suggests that TST has considerable value and that the TSS demonstrates a promising and substantial degree of construct validity. However, there remains a need for theorists with particular expertise in TST to evaluate whether the items within the revised scale are sufficiently comprehensive to encompass each of the needs domains, thereby achieving content validity. Nevertheless, the established relationships with the components of SWB are encouraging, and suggest it would be worthwhile to conduct further experimental studies to specifically evaluate causal relationships between needs and established measures of psychological functioning. Together, these research pathways would strengthen the basis upon which TSS may be utilised as a theoretical model underpinning coaching and psychological interventions. Given the comprehensiveness of TST, the theory serves as a valuable candidate for a unifying structure to integrate the currently disparate and somewhat incompatible theoretical approaches to positive psychology, and well-being more generally.

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Appendix A: Demographic Tables

Age

18 - 25 years	60
26 - 34 years	169
35 - 54 years	228
55 - 64 years	84
65 - 74 years	47
75 - 84 years	9
85 years or over	1
Total	598

Gender

Male	200
Female	397
Transgender	1
Total	598

Relationship Status

Single	146
Married	282
Defacto	116
Separated or Divorced	47
Widowed	7
Total	598

Highest level of education received

Didn't finish high school	29
Higher School Certificate (or equivalent)	65
Tertiary eg TAFE, private college	112
Undergraduate degree	155
Postgraduate degree	219
Other	18
Total	598

Employment Status

Employed full time	296
Employed part time	113
Employed casual	60
Unemployed looking for work	13
Unemployed not looking for work	22
Caring for related children full time	39
Caring for related children part time	29
Pension	20
Retired	43
Other	65

Country of birth

Illegible / Indecipherable	18
Argentina	1
Australia	433
Austria	1
Belgium	1
Canada	7
China	4
China (Macau)	1
Cook Islands	1
Denmark	11
Egypt	1
England	20
Fiji	2
France	3
Germany	2

Greece	1
Hong Kong	5
India	3
Indonesia	2
Iran	1
Ireland	4
Italy	2
Japan	1
Jordan	1
Latvia	1
Macedonia	1
Malaysia	3
New Zealand	16
Northern Ireland	2
Peru	1
Philippines	2
Republic of Mauritius	1
Scotland	2
Singapore	5
South Africa	6
Sri Lanka	1
Sudan	1
Sweden	1
Thailand	2
The Netherlands	2
Turkey	1
United Kingdom	15
United States of America	7
Vietnam	1
Zimbabwe	1
Total	598

Ethnicity

Aboriginal	10

Torres Strait Islander	1
Both Aboriginal and Torres Strait Islander	1
Australian - Caucasian	455
Australian - Other Descent	45
Asian	23
Arabic	4
African	1
Hispanic	5
Other	53
Total	598

Housing

Own home/mortgage	370
Rent with family	97
Rent with unrelated	40
Friend or relative – no rent	57
Shelter/refuge (homeless)	2
Car/Car park/Street	3
Other	29
Total	598

Appendix B: Original 85-item Thrive Survive Survey grouped according to

need categories

Not true at all			Somewhat true			Mostly true			Definitely true
1	2	3	4	5	6	7	8	9	10

Level 1: Physical Needs
1. I don't get enough restful sleep to enable me to function at my best (-)
2. My body doesn't get what it needs to function at its best (-)
3. My physical state or health interferes with my ability to function well (-)
4. I eat well
5. My living conditions don't allow me to function at my best (-)
6. I don't take very good care of myself (-)
7. I am not physically active enough to be really fit, healthy and energetic (-)
8. If I am honest with myself, I probably overuse alcohol or other drugs (-)
9. My physical and health needs are met
10. My physical state or health disrupts my life (-)
11. My need for touch and physical contact isn't really being met (-)
12. I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded) (-)

Level 2: Security Needs
13. I don't feel safe (-)
14. I don't feel secure (-)
15. My life is not very stable, predictable or reassuring (-)
16. The fundamentals of my life are dependable and reliable
17. I am sometimes subject to threat, danger or injury (-)
18. I can't rely on the important people in my life (-)
19. I don't have a secure or reliable income (-)
20. My family makes me feel safe and secure
21. I have enough money to meet my needs
22. I feel financially insecure (-)

Level 3: Growth, Progress, Improvement
23. I am always learning something new or useful
24. My life is not improving (-)
25. I am developing a lot as a person (Thriving Scale)
26. I am not growing as a person (-)
27. My understanding and effectiveness is always growing
28. I feel like I am moving forward
29. My life is not expanding – it is stagnant (-)
30. I am making progress
31. My life is getting better
32. My life is not really consistent with my personal values (what I think is important in life) (-)
33. I am moving towards the things I value
34. My life has a sense of direction ad meaning to it (MHC- SF)
35. I lead a purposeful and interesting life (Flourishing scale)
36. I am not realising my potential (-)

37. I make good use of my strengths (talents, abilities and interests)
38. I don't adapt well to change (-)
39. I am engaged and interested in my daily activities (Flourishing scale)
40. I am continually learning and growing

Level 4: Contentment (with Self)
(Self-esteem, S-worth, S-respect, S-acceptance, Virtue)
41. My attitude to myself is probably not as positive as most people feel about themselves (Ryff) (-)
42. I am competent and capable in the areas of my life that are important to me (Flourishing scale)
43. I don't feel good about my appearance or my body (-)
44. I like most aspects of my personality (Ryff)
45. On the whole I am satisfied with myself (Rosenberg)
46. I feel that I don't have that many good qualities (-)
47. I take a positive attitude towards myself (Rosenberg)
48. I am proud of who I have become
49. I have a strong sense of self-respect (Sheldon 2001)
50. I wish I could have more respect for myself (-)
51. In general, I feel confident and positive about myself (Ryff)
52. When I look at the story of my life, I am pleased with how things have turned out (Ryff)
53. When I compare myself with others I do not feel so good about myself (modified from Ryff) (-)
54. I think of myself as a good and strong person (S-ES)
55. My believe in myself gets me through hard times (S-ES)

Level 5: Connection
56. I get on well with the important people in my life
57. Maintaining close relationships has been difficult and frustrating for me (Ryff) (-)
58. My social relationships are close, supportive and rewarding (Flourishing scale – modified)
59. I feel appreciated and valued
60. I feel understood and accepted
61. I feel lonely (adapted from Hughes, 2004) (-)
62. I have good friends I can count on (AI)
63. I have a good family life (PMP)
64. I feel loved
65. I have a mutually satisfying, loving relationship (PMP)
66. I feel left out or excluded (adapted from Hughes, 2004) (-)
67. I feel like I belong
68. I feel respected
69. I feel isolated from others (adapted from Hughes, 2004) (-)

Level 6: Achievement
70. I feel like many of the people I know have gotten more out of life than I have (Ryff, s-acceptance) (-)
71. I've been pretty successful in life (Agency)
72. I am not achieving the things that are important to me (-)
73. I am meeting the goals I set for myself (Agency)
74. I don't feel that good about what I accomplish each day (-)
75. I take pride in my achievements
76. I derive a sense of accomplishment from my activities

77. I am successfully meeting my needs, goals and expectations
78. I have responded successfully to the demands and opportunities of life
79. I am mastering the things that are important to me
80. I am doing more than just surviving – I am thriving
81. I have not made the most of the opportunities life presents (-)
82. I am realising my dreams and satisfying my deepest yearnings
83. In many ways I feel disappointed about my achievements in life (Ryff, s-acceptance) (-)
84. I feel proud of what I have done in life
85. I often find myself completely immersed, engaged or absorbed in what I am doing (flow)

Appendix C: Satisfaction with Life Scale (SWLS)

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

1. In most ways, my life is close to my ideal
2. The conditions of my life are excellent
3. I am satisfied with my life
4. So far I have gotten the important things in life
5. If I could live my life over, I would change almost nothing

Appendix D: Scale of Positive and Negative Experience (SPANE)

Very rarely or never	Rarely	Sometimes	Often	Very often or always
1	2	3	4	5

1. Positive Negative
2. Good
3. Bad
4. Pleasant
5. Unpleasant Happy
6. Sad
7. Afraid
8. Joyful
9. Angry Contented

Appendix E: Survey as presented in hard-copy format

Q1 What is your age?
- ○ 18 - 25 years (1)
- ○ 26 - 34 years (2)
- ○ 35 - 54 years (3)
- ○ 55 - 64 years (4)
- ○ 65 - 74 years (5)
- ○ 75 - 84 years (6)
- ○ 85 years or over (7)

Q2 What is your gender?
- ○ Male (1)
- ○ Female (2)
- ○ Transgender (3)
- ○ Intersex (4)

Q3 What is your relationship status?
- ○ Single (1)
- ○ Married (2)
- ○ Defacto (3)
- ○ Separated or divorced (4)
- ○ Widowed (5)

Q4 What is the highest level of education you achieved?
- ○ Didn't finish high school (1)
- ○ Higher School Certificate (or equivalent) (2)
- ○ Tertiary e.g. TAFE, private college (3)
- ○ Undergraduate degree (4)
- ○ Postgraduate degree (5)
- ○ Other (6) _____

Q5 Which best describes your current situation? (you can choose more than one option)
- ○ Employed full time (1)
- ○ Employed part time (2)
- ○ Employed casual (3)
- ○ Unemployed - looking for work (please indicate how long) (4) _____
- ○ Unemployed - not looking for work (please indicate how long) (5) _____
- ○ Caring for related children - full time (6)
- ○ Caring for related children - part time (7)
- ○ Pension (8)
- ○ Retired (9)
- ○ Other (10) _____

Q6 In which country were you born?

_____

Q7 How would you describe your ethnicity?
- ○ Aboriginal (1)
- ○ Torres Straight Islander (2)
- ○ Both Aboriginal and Torres Straight Islander (3)
- ○ Australian - Caucasian (4)
- ○ Australian – other descent (please specify) (5) _____
- ○ Asian (6)
- ○ Arabic (7)
- ○ African (8)
- ○ Hispanic (9)
- ○ Other (please specify) (10) _____

Q8 Which option best describes your housing?
- ○ A home that you own, (including paying a mortgage) (1)
- ○ A home that you rent with family (2)
- ○ A home that you share with unrelated people (eg share house) (3)
- ○ The home of a supportive friend or relative where you pay little or no rent (4)
- ○ A shelter, refuge or other form of housing for homeless people (5)
- ○ A car, car park or on the street (6)
- ○ Other (7) _____

Below are five statements you may agree or disagree with. Please select the option that best suits you. Please be open and honest in you responding.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
In most ways, my life is close to my ideal	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○
The conditions of my life are excellent	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○
I am satisfied with my life	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○
So far I have gotten the important things in life	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○
If I could live my life over, I would change almost nothing	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○

We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life. There are no 'right' or 'wrong' answers.

	Not at all true				Somewhat true			Mostly true		Definitely true
(1) I don't get enough restful sleep to enable me to function at my best	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(2) I have enough money to meet my needs	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(3) I feel like I belong	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(4) I don't feel secure	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(5) I feel that I don't have that many good qualities	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○

We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life.
There are no 'right' or 'wrong' answers.

	Not at all true				Somewhat true				Mostly true		Definitely true

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(6) I am proud of who I have become	O	O	O	O	O	O	O	O	O	O
(7) I am making progress	O	O	O	O	O	O	O	O	O	O
(8) I feel proud of what I have done in life	O	O	O	O	O	O	O	O	O	O
(9) I don't take very good care of myself	O	O	O	O	O	O	O	O	O	O
(10) I am not physically active enough to be really fit, health and energetic	O	O	O	O	O	O	O	O	O	O
(11) I am realising my dreams and satisfying my deepest yearnings	O	O	O	O	O	O	O	O	O	O
(12) I feel left out or excluded	O	O	O	O	O	O	O	O	O	O
(13) I feel appreciated and valued	O	O	O	O	O	O	O	O	O	O
(14) My understanding and effectiveness is always growing	O	O	O	O	O	O	O	O	O	O
(15) I don't adapt well to change	O	O	O	O	O	O	O	O	O	O
(16) I have a strong sense of self-respect	O	O	O	O	O	O	O	O	O	O
(17) I am developing a lot as a person	O	O	O	O	O	O	O	O	O	O
(18) I don't feel that good about what I accomplish each day	O	O	O	O	O	O	O	O	O	O
(19) I can't rely on the important people in my life	O	O	O	O	O	O	O	O	O	O

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We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life.
There are no 'right' or 'wrong' answers.

	Not at all true				Somewhat true			Mostly true		Definitely true
(20) I often find myself completely immersed, engaged or absorbed in what I am doing.	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(21) When I look at the story of my life, I am pleased with how things have turned out	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(22) My life is not very stable, predictable or reassuring	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(23) I've been pretty successful in life	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(24) I have a mutually satisfying loving relationship	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(25) My body doesn't get what it needs to function at its best	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(26) I feel isolated from others	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(27) I am continually learning and growing	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(28) In general, I feel confident and positive about myself	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(29) I am sometimes subject to threat, danger or injury	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(30) I am meeting the goals I set for myself	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(31) My social relationships are close, supportive and rewarding	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O
(32) I take a positive attitude towards myself	(1) O	(2) O	(3) O	(4) O	(5) O	(6) O	(7) O	(8) O	(9) O	(10) O

	Not at all true				Somewhat true			Mostly true		Definitely true

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(33) My need for touch and physical contact isn't really being met.	○	○	○	○	○	○	○	○	○	○
(34) My life is not improving	○	○	○	○	○	○	○	○	○	○
(35) When I compare myself with others I do not feel so good about myself	○	○	○	○	○	○	○	○	○	○
(36) On the whole I am satisfied with myself	○	○	○	○	○	○	○	○	○	○
(37) My life has a sense of direction and meaning to it	○	○	○	○	○	○	○	○	○	○
(38) My life is not expanding - it is stagnant	○	○	○	○	○	○	○	○	○	○
(39) My physical state or health interferes with my ability to function well	○	○	○	○	○	○	○	○	○	○
(40) I make good use of my strengths (talents, abilities and interests)	○	○	○	○	○	○	○	○	○	○
(41) My family makes me feel safe and secure	○	○	○	○	○	○	○	○	○	○
(42) I am competent and capable in the areas of life that are important to me	○	○	○	○	○	○	○	○	○	○
(43) I take pride in my achievements	○	○	○	○	○	○	○	○	○	○
(44) I am mastering the things that are important to me	○	○	○	○	○	○	○	○	○	○
(45) I feel understood and accepted	○	○	○	○	○	○	○	○	○	○

We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life. There are no 'right' or 'wrong' answers.

	Not at all true				Somewhat true			Mostly true		Definitely true

(46)										

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
My attitude to myself is probably not as positive as most people feel about themselves	O	O	O	O	O	O	O	O	O	O
(47) I have good friends I can count on	O	O	O	O	O	O	O	O	O	O
(48) I eat well	O	O	O	O	O	O	O	O	O	O
(49) I am doing more than just surviving - I am thriving	O	O	O	O	O	O	O	O	O	O
(50) I have not made the most of the opportunities life presents	O	O	O	O	O	O	O	O	O	O
(51) I think of myself as a good and strong person	O	O	O	O	O	O	O	O	O	O
(52) I am not realising my potential	O	O	O	O	O	O	O	O	O	O
(53) I get on well with the important people in my life	O	O	O	O	O	O	O	O	O	O
(54) I have responded successfully to the demands and opportunities of life	O	O	O	O	O	O	O	O	O	O
(55) My physical and health needs are met	O	O	O	O	O	O	O	O	O	O
(56) I derive a sense of accomplishment from my activities	O	O	O	O	O	O	O	O	O	O
(57) In many ways I feel disappointed about my achievements in life	O	O	O	O	O	O	O	O	O	O
(58) I like most aspects of my personality	O	O	O	O	O	O	O	O	O	O

We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life.
There are no 'right' or 'wrong' answers.

	Not at all true				Somewhat true			Mostly true		Definitely true
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(59) My living conditions don't allow me to function at my best	O	O	O	O	O	O	O	O	O	O
(60) I am moving towards the things I value	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

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	○	○	○	○	○	○	○	○	○	○
(61) I am not achieving the things that are important to me	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(62) My physical state or health disrupts my life	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(63) I feel loved	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(64) I don't feel good about my appearance or my body	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(65) I am successfully meeting my needs, goals and expectations	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(66) I feel financially insecure	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(67) I am not growing as a person	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(68) I don't have a secure or reliable income	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(69) My life is not really consistent with my personal values (what I think is important in life)	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(70) I don't feel safe	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(71) I feel lonely	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(72) I feel like I am moving forward	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○

We would like you to tell us about your life. Please select an option from the scale below to indicate how <u>true or untrue</u> each statement is for you and your life. There are no 'right' or 'wrong' answers.

	Not at all true			Somewhat true			Mostly true			Definitely true
(73) I wish I could have more respect for myself.	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(74) I feel like many of the people I know have	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
gotten more out of life than I have										
(75) I am engaged and interested in my daily activities	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(76) If I am honest with myself, I probably overuse alcohol or other drugs	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(77) The fundamentals of my life are dependable and reliable	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(78) I am always learning something new or useful	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(79) I have a good family life	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(80) Maintaining close relationships has been difficult and frustrating for me	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(81) My belief in myself gets me through hard times	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(82) My life is getting better	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(83) I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(84) I lead a purposeful and interesting life	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○
(85) I feel respected	(1) ○	(2) ○	(3) ○	(4) ○	(5) ○	(6) ○	(7) ○	(8) ○	(9) ○	(10) ○

Please think about what you have been doing and experiencing during the past 4 weeks. Then report how much you experienced each of the following feelings, using the scale below.

	Very rarely or never	Rarely	Sometimes	Often	Very often or always

	(1)	(2)	(3)	(4)	(5)
Positive	○	○	○	○	○
Negative	○	○	○	○	○
Good	○	○	○	○	○
Bad	○	○	○	○	○
Pleasant	○	○	○	○	○
Unpleasant	○	○	○	○	○
Happy	○	○	○	○	○
Sad	○	○	○	○	○
Afraid	○	○	○	○	○
Joyful	○	○	○	○	○
Angry	○	○	○	○	○
Contented	○	○	○	○	○

Thank you very much for completing this survey. Consent is implied by returning the completed survey. We are grateful for your time and effort and would like to offer you access to the following online information called "The How and Success of Happiness: What Science tells us works" in appreciation. If you would like to receive a link to this module, please write your email or address below. (All addresses will be destroyed after the results have been sent):

_____

If you would like to receive a summary of the results of this research, please provide your email or address below. (All addresses will be destroyed after the results have been sent):

_____
_____

If you have found that you have become distressed whilst answering any of these questions and need further support, please contact Lifeline on 13 11 14.

Your local GP can also offer you information and referrals for local counselling services.

Appendix F: Example of Social media advertisement to recruit participants

Ben Sparrow
June 13, 2013 · Petersham, United Kingdom · 🌐 ▾

Facebook friends - what makes people happy? I think I know the answer, but I need you to help me prove it. I'm running a research project for my clinical psych thesis. Recruiting participants is hard, but I am blessed with a generous and engaged friend group. If you can spare 10 mins to complete this survey, you would help me enormously. I need around 850 respondents, so please feel free to pass it on or re-post. It's anonymous and confidential. Thanks and best wishes to all. Ben.

MACQUARIEHS.QUALTRICS.COM

Survey | Wellbeing

Survey Software, Enterprise Survey software for enterprise feedback management and CRM solutions. Enables high-quality data collection, panel management and results analysis. Perfect for market research or CRM solution (Customer Relationship Management) integration. Free trial and

Appendix G: Participant Information Sheet

MACQUARIE UNIVERSITY

Department of Psychology
Faculty of Human Sciences
MACQUARIE UNIVERSITY   NSW   2109
Phone: +61 (02) 9850-8031

Email: john.franklin@ mq.edu.au

Chief Investigator: Dr. John Franklin

Information Form[1]
Psychological Needs and Subjective Well-Being

You are invited to participate in a study of the causes of happiness. There is uncertainty amongst psychologists as to what makes people happy or unhappy. We need your personal insights to better understand this important question as it affects so many areas of our life.

Your participation is completely anonymous.   If you decide to participate, you will be asked about how you feel, the conditions of your life, and how you see yourself. The questions normally take about 10-15 minutes to complete. We know from previous research that participants often appreciate this opportunity to reflect on what is important in their lives.

No identifying information is requested and your answers are completely confidential. Only the named investigators will have access to the data.

Participation is entirely voluntary and you are free to withdraw at any time.

There are two ways you can complete the survey:

> 1. Online: The survey can be located by typing
> https://macquariehs.qualtrics.com/SE/?SID=SV_ac21LtkSSKRd7GB
> into your address bar, and then by following the instructions.
>
> 2. Pen and paper: You will find attached a paper copy of the survey. Please complete it and place it in the envelope provided to be returned to organisation/individual you received it from, or post using the envelope provided.

The research team thank you for your time.

The study is being conducted by Dr John Franklin, Honorary Associate, Department of Psychology; (john.franklin@mq.edu.au) and Ben Stiel, (benjamin.stiel@students.mq.edu.au) a Clinical Psychology and Master of Philosophy candidate. The study is being conducted to meet the requirements of the Doctor of Clinical Psychology degree under Dr Franklin's supervision (tel. 02-9850-8031).

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics

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[1] Consent will be implied by a willingness to click on the internet link and proceed, or completion of the survey.

(telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix H: Univariate Normality of Thrive Survive Survey Items

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Q12_1R	.165	608	.000	.894	608	.000
Q12_2R	.187	608	.000	.870	608	.000
3R	.230	608	.000	.803	608	.000
I eat well	.187	608	.000	.910	608	.000
Q12_5R	.306	608	.000	.694	608	.000
Q12_6R	.198	608	.000	.856	608	.000
Q12_7R	.165	608	.000	.891	608	.000
Q12_8R	.300	608	.000	.711	608	.000
My physical and health needs are met	.170	608	.000	.908	608	.000
Q12_10R	.237	608	.000	.787	608	.000
Q12_11R	.213	608	.000	.841	608	.000
Q12_12R	.157	608	.000	.902	608	.000
Q12_13R	.311	608	.000	.606	608	.000
Q12_14R	.238	608	.000	.797	608	.000
Q12_15R	.260	608	.000	.776	608	.000
The fundamentals of my life are dependable and reliable	.173	608	.000	.893	608	.000
Q12_17R	.282	608	.000	.670	608	.000
Q12_18R	.278	608	.000	.711	608	.000
Q12_19R	.286	608	.000	.713	608	.000
My family makes me feel safe and secure	.214	608	.000	.822	608	.000
I have enough money to meet my needs	.193	608	.000	.897	608	.000
Q12_22R	.177	608	.000	.865	608	.000
I am always learning something new or useful	.158	608	.000	.911	608	.000
Q12_24R	.257	608	.000	.770	608	.000
I am developing a lot as a person	.165	608	.000	.921	608	.000
Q12_26R	.257	608	.000	.765	608	.000
My understanding and effectiveness is always growing	.172	608	.000	.925	608	.000
I feel like I am moving forward	.164	608	.000	.914	608	.000
Q12_29R	.204	608	.000	.824	608	.000
I am making progress	.166	608	.000	.917	608	.000
My life is getting better	.152	608	.000	.929	608	.000
Q12_32R	.213	608	.000	.843	608	.000
I am moving towards the things I value	.178	608	.000	.909	608	.000
My life has a sense of direction and meaning to it	.177	608	.000	.895	608	.000
I lead a purposeful and interesting life	.162	608	.000	.917	608	.000
Q12_36R	.186	608	.000	.908	608	.000
I make good use of my strengths, (talents,abilities and interests	.176	608	.000	.931	608	.000
Q12_38R	.185	608	.000	.877	608	.000
I am engaged and interested in my daily activities	.186	608	.000	.924	608	.000
I am continually learning and growing	.174	608	.000	.883	608	.000
Q12_41R	.165	608	.000	.892	608	.000
I am competent and capable in the areas of life which are important to me	.182	608	.000	.902	608	.000
Q12_43R	.188	608	.000	.910	608	.000
I like most aspects of my personality	.200	608	.000	.911	608	.000
On the whole I am satisfied with myself	.186	608	.000	.907	608	.000
Q12_46R	.227	608	.000	.771	608	.000
I take a positive attitude towards myself	.188	608	.000	.917	608	.000
I am proud of who I have become	.183	608	.000	.901	608	.000
I have a strong sense of self respect	.179	608	.000	.897	608	.000
Q12_50R	.194	608	.000	.854	608	.000
In general I feel confident and positive about myself	.186	608	.000	.910	608	.000

When I look at the story of my life, I am pleased with how things have turned out	.173	608	.000	.920	608	.000
Q12_53R	.178	608	.000	.863	608	.000
I think of myself as a good and strong person	.190	608	.000	.882	608	.000
My belief in myself gets me through hard times	.171	608	.000	.924	608	.000
I get on well with the important people in my life	.223	608	.000	.830	608	.000
Q12_57R	.217	608	.000	.841	608	.000
My social relationships are close, supportive and rewarding	.154	608	.000	.910	608	.000
Q12_59R	.178	608	.000	.916	608	.000
I feel understood and accepted	.170	608	.000	.926	608	.000
Q12_61R	.201	608	.000	.825	608	.000
I have good friends I can count on	.189	608	.000	.851	608	.000
I have a good family life	.251	608	.000	.782	608	.000
I feel loved	.229	608	.000	.802	608	.000
I have a mutually satisfying loving relationship	.194	608	.000	.828	608	.000
Q12_66R	.208	608	.000	.824	608	.000
I feel like I belong	.176	608	.000	.909	608	.000
I feel respected	.183	608	.000	.907	608	.000
Q12_69R	.198	608	.000	.823	608	.000
Q12_70R	.176	608	.000	.872	608	.000
I've been pretty successful in life	.186	608	.000	.924	608	.000
Q12_72R	.190	608	.000	.866	608	.000
I am meeting the goals I set for myself	.170	608	.000	.942	608	.000
Q12_74R	.197	608	.000	.858	608	.000
I take pride in my achievements	.162	608	.000	.887	608	.000
I derive a sense of accomplishment from my activities	.165	608	.000	.912	608	.000
I am successfully meeting my needs, goals and expectations	.182	608	.000	.933	608	.000
I have responded successfully to the demands and opportunities of life	.184	608	.000	.921	608	.000
I am mastering the things that are important to me	.182	608	.000	.925	608	.000
I am doing more than just surviving - I am thriving	.181	608	.000	.924	608	.000
Q12_81R	.169	608	.000	.903	608	.000
I am realising my dreams and satisfying my deepest yearnings	.152	608	.000	.940	608	.000
Q12_83R	.211	608	.000	.826	608	.000
I feel proud of what I have done in life	.167	608	.000	.900	608	.000
I often find myself completely immersed, engaged or absorbed in what I am doing	.138	608	.000	.930	608	.000

a. Lilliefors Significance Correction

Appendix I: Factor Analysis using Principal Axis Factoring – 6 Factors

Communalities

	Initial	Extraction
Q12_1 I don't get enough restful sleep to enable me to function at my best	.375	.281
Q12_2 My body doesn't get what it needs to function at its best	.570	.493
Q12_3 My physical state or health interferes with my ability to function well	.709	.532
Q12_4 I eat well	.622	.527
Q12_5 My living conditions don't allow me to function at my best	.394	.300
Q12_6 I don't take very good care of myself	.613	.547
Q12_7 I am not physically active enough to be really fit, health and energetic	.469	.400
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.193	.048
Q12_9 My physical and health needs are met	.592	.569
Q12_10 My physical state or health disrupts my life	.718	.520
Q12_11 My need for touch and physical contact isn't really being met.	.510	.353
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.518	.397
Q12_13 I don't feel safe	.562	.389
Q12_14 I don't feel secure	.616	.508
Q12_15 My life is not very stable, predictable or reassuring	.449	.346
Q12_16 The fundamentals of my life are dependable and reliable	.603	.544
Q12_17 I am sometimes subject to threat, danger or injury	.435	.215
Q12_18 I can't rely on the important people in my life	.392	.293
Q12_19 I don't have a secure or reliable income	.402	.330
Q12_20 My family makes me feel safe and secure	.668	.510
Q12_21 I have enough money to meet my needs	.517	.531
Q12_22 I feel financially insecure	.429	.367
Q12_23 I am always learning something new or useful	.655	.536
Q12_24 My life is not improving	.646	.584
Q12_25 I am developing a lot as a person	.716	.654
Q12_26 I am not growing as a person	.571	.486
Q12_27 My understanding and effectiveness is always growing	.753	.672
Q12_28 I feel like I am moving forward	.818	.779
Q12_29 My life is not expanding - it is stagnant	.627	.595
Q12_30 I am making progress	.754	.694
Q12_31 My life is getting better	.710	.640
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.483	.390
Q12_33 I am moving towards the things I value	.734	.688
Q12_34 My life has a sense of direction and meaning to it	.773	.691
Q12_35 I lead a purposeful and interesting life	.777	.722
Q12_36 I am not realising my potential	.561	.456
Q12_37 I make good use of my strengths, (talents,abilities and interests	.706	.603
Q12_38 I don't adapt well to change	.318	.204
Q12_39 I am engaged and interested in my daily activities	.685	.564
Q12_40 I am continually learning and growing	.735	.647

Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.596	.499
Q12_42 I am competent and capable in the areas of life which are important to me	.746	.657
Q12_43 I don't feel good about my appearance or my body	.529	.414
Q12_44 I like most aspects of my personality	.643	.566
Q12_45 On the whole I am satisfied with myself	.810	.743
Q12_46 I feel that I don't have that many good qualities	.531	.405
Q12_47 I take a positive attitude towards myself	.764	.701
Q12_48 I am proud of who I have become	.768	.687
Q12_49 I have a strong sense of self respect	.687	.647
Q12_50 I wish I could have more respect for myself	.592	.527
Q12_51 In general I feel confident and positive about myself	.813	.740
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.729	.631
Q12_53 When I compare myself to others, I do not feel so good about myself	.627	.575
Q12_54 I think of myself as a good and strong person	.668	.554
Q12_55 My belief in myself gets me through hard times	.624	.553
Q12_56 I get on well with the important people in my life	.612	.545
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.544	.472
Q12_58 My social relationships are close, supportive and rewarding	.747	.617
Q12_59 I feel appreciated and valued	.791	.710
Q12_60 I feel understood and accepted	.709	.648
Q12_61 I feel lonely	.703	.616
Q12_62 I have good friends I can count on	.651	.463
Q12_63 I have a good family life	.701	.531
Q12_64 I feel loved	.735	.720
Q12_65 I have a mutually satisfying loving relationship	.578	.388
Q12_66 I feel left out or excluded	.582	.481
Q12_67 I feel like I belong	.675	.635
Q12_68 I feel respected	.735	.658
Q12_69 I feel isolated from others	.670	.574
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.570	.511
Q12_71 I've been pretty successful in life	.709	.630
Q12_72 I am not achieving the things that are important to me	.628	.540
Q12_73 I am meeting the goals I set for myself	.751	.688
Q12_74 I don't feel that good about what I accomplish each day	.591	.505
Q12_75 I take pride in my achievements	.714	.607
Q12_76 I derive a sense of accomplishment from my activities	.695	.622
Q12_77 I am successfully meeting my needs, goals and expectations	.834	.787
Q12_78 I have responded successfully to the demands and opportunities of life	.728	.667
Q12_79 I am mastering the things that are important to me	.762	.702
Q12_80 I am doing more than just surviving - I am thriving	.749	.678
Q12_81 I have not made the most of the opportunities life presents	.495	.336
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.742	.659
Q12_83 In many ways I feel disappointed about my achievement in life	.705	.635

Q12_84 I feel proud of what I have done in life	.778	.686
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.458	.335

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	35.128	41.328	41.328	34.728	40.857	40.857	27.662
2	4.823	5.674	47.001	4.324	5.087	45.944	4.748
3	2.845	3.347	50.348	2.356	2.772	48.716	20.571
4	2.324	2.734	53.082	1.853	2.181	50.896	15.062
5	2.153	2.533	55.615	1.728	2.033	52.930	17.468
6	1.687	1.985	57.600	1.159	1.364	54.294	14.379
7	1.411	1.660	59.260				
8	1.298	1.527	60.788				
9	1.176	1.383	62.171				
10	1.143	1.345	63.516				
11	1.050	1.235	64.751				
12	1.003	1.180	65.931				
13	.984	1.158	67.089				
14	.918	1.080	68.169				
15	.878	1.033	69.202				
16	.844	.993	70.195				
17	.829	.976	71.170				
18	.802	.943	72.114				
19	.752	.885	72.999				
20	.731	.860	73.859				
21	.700	.823	74.683				
22	.676	.795	75.478				
23	.660	.776	76.254				
24	.629	.740	76.994				
25	.607	.714	77.708				
26	.589	.693	78.401				
27	.568	.668	79.069				
28	.565	.664	79.733				
29	.557	.656	80.389				
30	.544	.640	81.028				
31	.530	.623	81.652				
32	.515	.606	82.257				
33	.502	.590	82.848				
34	.491	.577	83.425				
35	.485	.570	83.995				
36	.462	.543	84.539				
37	.457	.538	85.077				
38	.451	.530	85.607				
39	.442	.520	86.127				
40	.425	.500	86.627				
41	.417	.490	87.117				
42	.406	.478	87.595				

43	.395	.465	88.059				
44	.390	.459	88.519				
45	.385	.453	88.972				
46	.377	.443	89.415				
47	.366	.430	89.845				
48	.359	.422	90.267				
49	.356	.418	90.685				
50	.340	.400	91.086				
51	.334	.393	91.478				
52	.322	.379	91.857				
53	.315	.371	92.228				
54	.310	.365	92.593				
55	.302	.355	92.948				
56	.286	.336	93.284				
57	.283	.333	93.617				
58	.280	.329	93.946				
59	.268	.315	94.261				
60	.263	.309	94.571				
61	.254	.299	94.869				
62	.250	.294	95.163				
63	.245	.288	95.452				
64	.239	.281	95.732				
65	.234	.275	96.007				
66	.223	.262	96.270				
67	.219	.257	96.527				
68	.210	.247	96.774				
69	.209	.245	97.020				
70	.205	.241	97.260				
71	.200	.235	97.495				
72	.195	.229	97.725				
73	.192	.225	97.950				
74	.181	.212	98.162				
75	.171	.202	98.364				
76	.170	.200	98.564				
77	.161	.189	98.753				
78	.159	.187	98.940				
79	.150	.177	99.117				
80	.142	.167	99.284				
81	.133	.156	99.440				
82	.130	.153	99.593				
83	.123	.145	99.738				
84	.115	.135	99.873				
85	.108	.127	100.000				

Extraction Method: Principal Axis Factoring.
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix J: Reliability Analysis – Original 6 Factor Thrive Survive Survey

Scale: Original Physical

Item Statistics

	Mean	Std. Deviation	N
Q12_1 I don't get enough restful sleep to enable me to function at my best	6.4732	2.96464	598
Q12_2 My body doesn't get what it needs to function at its best	7.2258	2.61631	598
Q12_3 My physical state or health interferes with my ability to function well	7.6990	2.70176	598
Q12_4 I eat well	6.9766	2.40730	598
Q12_5 My living conditions don't allow me to function at my best	8.5803	2.12965	598
Q12_6 I don't take very good care of myself	7.5452	2.40194	598
Q12_7 I am not physically active enough to be really fit, health and energetic	6.5418	2.99426	598
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	8.0987	2.80021	598
Q12_9 My physical and health needs are met	6.7993	2.60778	598
Q12_10 My physical state or health disrupts my life	7.7492	2.68577	598
Q12_11 My need for touch and physical contact isn't really being met.	6.9365	3.11251	598
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	6.8311	2.70242	598

Inter-Item Correlation Matrix

	Q12_1 I don't get enough restful sleep to enable me to function at my best	Q12_2 My body doesn't get what it needs to function at its best	Q12_3 My physical state or health interferes with my ability to function well
Q12_1 I don't get enough restful sleep to enable me to function at my best	1.000	.427	.321
Q12_2 My body doesn't get what it needs to function at its best	.427	1.000	.447
Q12_3 My physical state or health interferes with my ability to function well	.321	.447	1.000
Q12_4 I eat well	.249	.445	.367
Q12_5 My living conditions don't allow me to function at my best	.168	.337	.314
Q12_6 I don't take very good care of myself	.382	.499	.447
Q12_7 I am not physically active enough to be really fit, health and energetic	.278	.416	.431
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.117	.078	.134
Q12_9 My physical and health needs are met	.260	.423	.506
Q12_10 My physical state or health disrupts my life	.337	.459	.778
Q12_11 My need for touch and physical contact isn't really being met.	.132	.214	.229
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.290	.356	.324

Inter-Item Correlation Matrix

	Q12_4 I eat well	Q12_5 My living conditions don't allow me to function at my best	Q12_6 I don't take very good care of myself
Q12_1 I don't get enough restful sleep to enable me to function at my best	.249	.168	.382
Q12_2 My body doesn't get what it needs to function at its best	.445	.337	.499
Q12_3 My physical state or health interferes with my ability to function well	.367	.314	.447
Q12_4 I eat well	1.000	.258	.534
Q12_5 My living conditions don't allow me to function at my best	.258	1.000	.292
Q12_6 I don't take very good care of myself	.534	.292	1.000
Q12_7 I am not physically active enough to be really fit, health and energetic	.299	.233	.549
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.056	.080	.179
Q12_9 My physical and health needs are met	.551	.266	.454
Q12_10 My physical state or health disrupts my life	.348	.336	.418
Q12_11 My need for touch and physical contact isn't really being met.	.190	.288	.233
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.304	.288	.319

Inter-Item Correlation Matrix

	Q12_7 I am not physically active enough to be really fit, health and energetic	Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	Q12_9 My physical and health needs are met
Q12_1 I don't get enough restful sleep to enable me to function at my best	.278	.117	.260
Q12_2 My body doesn't get what it needs to function at its best	.416	.078	.423
Q12_3 My physical state or health interferes with my ability to function well	.431	.134	.506
Q12_4 I eat well	.299	.056	.551
Q12_5 My living conditions don't allow me to function at my best	.233	.080	.266
Q12_6 I don't take very good care of myself	.549	.179	.454
Q12_7 I am not physically active enough to be really fit, health and energetic	1.000	.096	.425
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.096	1.000	.138
Q12_9 My physical and health needs are met	.425	.138	1.000
Q12_10 My physical state or health disrupts my life	.374	.163	.466
Q12_11 My need for touch and physical contact isn't really being met.	.148	.097	.207
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.211	.076	.303

Inter-Item Correlation Matrix

	Q12_10 My physical state or health disrupts my life	Q12_11 My need for touch and physical contact isn't really being met.	Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)
Q12_1 I don't get enough restful sleep to enable me to function at my best	.337	.132	.290
Q12_2 My body doesn't get what it needs to function at its best	.459	.214	.356
Q12_3 My physical state or health interferes with my ability to function well	.778	.229	.324
Q12_4 I eat well	.348	.190	.304
Q12_5 My living conditions don't allow me to function at my best	.336	.288	.288
Q12_6 I don't take very good care of myself	.418	.233	.319
Q12_7 I am not physically active enough to be really fit, health and energetic	.374	.148	.211
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.163	.097	.076
Q12_9 My physical and health needs are met	.466	.207	.303
Q12_10 My physical state or health disrupts my life	1.000	.246	.324
Q12_11 My need for touch and physical contact isn't really being met.	.246	1.000	.319
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.324	.319	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_1 I don't get enough restful sleep to enable me to function at my best	80.9833	316.640	.438
Q12_2 My body doesn't get what it needs to function at its best	80.2308	307.876	.620
Q12_3 My physical state or health interferes with my ability to function well	79.7575	302.703	.656
Q12_4 I eat well	80.4799	319.835	.535
Q12_5 My living conditions don't allow me to function at my best	78.8763	334.166	.424
Q12_6 I don't take very good care of myself	79.9114	310.218	.658
Q12_7 I am not physically active enough to be really fit, health and energetic	80.9147	308.671	.514
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	79.3579	345.677	.174
Q12_9 My physical and health needs are met	80.6572	309.606	.602
Q12_10 My physical state or health disrupts my life	79.7074	303.802	.648
Q12_11 My need for touch and physical contact isn't really being met.	80.5201	324.769	.332
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	80.6254	319.638	.463

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_1 I don't get enough restful sleep to enable me to function at my best	.248	.829
Q12_2 My body doesn't get what it needs to function at its best	.428	.814

Q12_3 My physical state or health interferes with my ability to function well	.648	.811
Q12_4 I eat well	.437	.821
Q12_5 My living conditions don't allow me to function at my best	.209	.829
Q12_6 I don't take very good care of myself	.514	.813
Q12_7 I am not physically active enough to be really fit, health and energetic	.380	.822
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.056	.849
Q12_9 My physical and health needs are met	.449	.816
Q12_10 My physical state or health disrupts my life	.635	.812
Q12_11 My need for touch and physical contact isn't really being met.	.161	.839
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.249	.826

Scale: Original Security

Item Statistics

	Mean	Std. Deviation	N
Q12_13 I don't feel safe	8.8829	2.03314	598
Q12_14 I don't feel secure	8.0201	2.36946	598
Q12_15 My life is not very stable, predictable or reassuring	8.0987	2.37420	598
Q12_16 The fundamentals of my life are dependable and reliable	7.3244	2.35147	598
Q12_17 I am sometimes subject to threat, danger or injury	8.7090	2.08342	598
Q12_18 I can't rely on the important people in my life	8.4314	2.28193	598
Q12_19 I don't have a secure or reliable income	8.1171	2.72460	598
Q12_20 My family makes me feel safe and secure	7.6656	2.63691	598
Q12_21 I have enough money to meet my needs	6.8311	2.70861	598
Q12_22 I feel financially insecure	7.0936	2.84342	598

Inter-Item Correlation Matrix

	Q12_13 I don't feel safe	Q12_14 I don't feel secure	Q12_15 My life is not very stable, predictable or reassuring
Q12_13 I don't feel safe	1.000	.543	.365
Q12_14 I don't feel secure	.543	1.000	.475
Q12_15 My life is not very stable, predictable or reassuring	.365	.475	1.000
Q12_16 The fundamentals of my life are dependable and reliable	.346	.466	.361
Q12_17 I am sometimes subject to threat, danger or injury	.457	.316	.292
Q12_18 I can't rely on the important people in my life	.341	.391	.223
Q12_19 I don't have a secure or reliable income	.306	.378	.334
Q12_20 My family makes me feel safe and secure	.304	.363	.286
Q12_21 I have enough money to meet my needs	.226	.328	.277
Q12_22 I feel financially insecure	.212	.354	.301

Inter-Item Correlation Matrix

	Q12_16 The fundamentals of my life are dependable and reliable	Q12_17 I am sometimes subject to threat, danger or injury	Q12_18 I can't rely on the important people in my life
Q12_13 I don't feel safe	.346	.457	.341
Q12_14 I don't feel secure	.466	.316	.391
Q12_15 My life is not very stable, predictable or reassuring	.361	.292	.223
Q12_16 The fundamentals of my life are dependable and reliable	1.000	.226	.274
Q12_17 I am sometimes subject to threat, danger or injury	.226	1.000	.234
Q12_18 I can't rely on the important people in my life	.274	.234	1.000
Q12_19 I don't have a secure or reliable income	.266	.195	.220
Q12_20 My family makes me feel safe and secure	.440	.201	.362
Q12_21 I have enough money to meet my needs	.445	.197	.234
Q12_22 I feel financially insecure	.287	.139	.218

Inter-Item Correlation Matrix

	Q12_19 I don't have a secure or reliable income	Q12_20 My family makes me feel safe and secure	Q12_21 I have enough money to meet my needs
Q12_13 I don't feel safe	.306	.304	.226
Q12_14 I don't feel secure	.378	.363	.328
Q12_15 My life is not very stable, predictable or reassuring	.334	.286	.277
Q12_16 The fundamentals of my life are dependable and reliable	.266	.440	.445
Q12_17 I am sometimes subject to threat, danger or injury	.195	.201	.197
Q12_18 I can't rely on the important people in my life	.220	.362	.234
Q12_19 I don't have a secure or reliable income	1.000	.180	.394
Q12_20 My family makes me feel safe and secure	.180	1.000	.256
Q12_21 I have enough money to meet my needs	.394	.256	1.000
Q12_22 I feel financially insecure	.407	.120	.442

Inter-Item Correlation Matrix

	Q12_22 I feel financially insecure
Q12_13 I don't feel safe	.212
Q12_14 I don't feel secure	.354
Q12_15 My life is not very stable, predictable or reassuring	.301
Q12_16 The fundamentals of my life are dependable and reliable	.287
Q12_17 I am sometimes subject to threat, danger or injury	.139
Q12_18 I can't rely on the important people in my life	.218
Q12_19 I don't have a secure or reliable income	.407
Q12_20 My family makes me feel safe and secure	.120
Q12_21 I have enough money to meet my needs	.442
Q12_22 I feel financially insecure	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_13 I don't feel safe	70.2910	191.104	.546
Q12_14 I don't feel secure	71.1538	178.821	.655

Q12_15 My life is not very stable, predictable or reassuring	71.0753	186.569	.520
Q12_16 The fundamentals of my life are dependable and reliable	71.8495	184.322	.565
Q12_17 I am sometimes subject to threat, danger or injury	70.4649	198.963	.385
Q12_18 I can't rely on the important people in my life	70.7425	192.942	.438
Q12_19 I don't have a secure or reliable income	71.0569	182.834	.484
Q12_20 My family makes me feel safe and secure	71.5084	187.527	.435
Q12_21 I have enough money to meet my needs	72.3428	181.261	.512
Q12_22 I feel financially insecure	72.0803	183.327	.448

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_13 I don't feel safe	.411	.795
Q12_14 I don't feel secure	.481	.781
Q12_15 My life is not very stable, predictable or reassuring	.303	.796
Q12_16 The fundamentals of my life are dependable and reliable	.385	.791
Q12_17 I am sometimes subject to threat, danger or injury	.236	.809
Q12_18 I can't rely on the important people in my life	.236	.804
Q12_19 I don't have a secure or reliable income	.287	.800
Q12_20 My family makes me feel safe and secure	.284	.805
Q12_21 I have enough money to meet my needs	.345	.797
Q12_22 I feel financially insecure	.299	.805

Scale: Original Growth

Item Statistics

	Mean	Std. Deviation	N
Q12_23 I am always learning something new or useful	7.1054	2.42625	598
Q12_24 My life is not improving	8.0552	2.44442	598
Q12_25 I am developing a lot as a person	6.8645	2.43922	598
Q12_26 I am not growing as a person	8.1304	2.39829	598
Q12_27 My understanding and effectiveness is always growing	7.0334	2.26670	598
Q12_28 I feel like I am moving forward	6.7408	2.58290	598
Q12_29 My life is not expanding - it is stagnant	7.6087	2.64177	598
Q12_30 I am making progress	7.0368	2.38687	598
Q12_31 My life is getting better	6.7358	2.49900	598
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	7.5870	2.53649	598
Q12_33 I am moving towards the things I value	7.1522	2.34222	598
Q12_34 My life has a sense of direction and meaning to it	6.8645	2.68753	598
Q12_35 I lead a purposeful and interesting life	6.8110	2.50415	598
Q12_36 I am not realising my potential	6.3997	2.81878	598
Q12_37 I make good use of my strengths, (talents,abilities and interests	6.7425	2.35477	598
Q12_38 I don't adapt well to change	7.2057	2.57994	598
Q12_39 I am engaged and interested in my daily activities	6.8010	2.43623	598
Q12_40 I am continually learning and growing	7.4181	2.41973	598

Inter-Item Correlation Matrix

	Q12_23 I am always learning something new or useful	Q12_24 My life is not improving	Q12_25 I am developing a lot as a person

Q12_23 I am always learning something new or useful	1.000	.409	.585
Q12_24 My life is not improving	.409	1.000	.490
Q12_25 I am developing a lot as a person	.585	.490	1.000
Q12_26 I am not growing as a person	.444	.536	.528
Q12_27 My understanding and effectiveness is always growing	.633	.472	.708
Q12_28 I feel like I am moving forward	.585	.603	.700
Q12_29 My life is not expanding - it is stagnant	.434	.599	.539
Q12_30 I am making progress	.553	.537	.705
Q12_31 My life is getting better	.518	.589	.644
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.236	.433	.319
Q12_33 I am moving towards the things I value	.577	.523	.666
Q12_34 My life has a sense of direction and meaning to it	.547	.529	.633
Q12_35 I lead a purposeful and interesting life	.600	.531	.627
Q12_36 I am not realising my potential	.323	.458	.382
Q12_37 I make good use of my strengths, (talents,abilities and interests	.571	.411	.609
Q12_38 I don't adapt well to change	.281	.308	.262
Q12_39 I am engaged and interested in my daily activities	.561	.479	.527
Q12_40 I am continually learning and growing	.703	.478	.700

Inter-Item Correlation Matrix

	Q12_26 I am not growing as a person	Q12_27 My understanding and effectiveness is always growing	Q12_28 I feel like I am moving forward
Q12_23 I am always learning something new or useful	.444	.633	.585
Q12_24 My life is not improving	.536	.472	.603
Q12_25 I am developing a lot as a person	.528	.708	.700
Q12_26 I am not growing as a person	1.000	.502	.518
Q12_27 My understanding and effectiveness is always growing	.502	1.000	.693
Q12_28 I feel like I am moving forward	.518	.693	1.000
Q12_29 My life is not expanding - it is stagnant	.553	.489	.621
Q12_30 I am making progress	.532	.706	.779
Q12_31 My life is getting better	.462	.623	.747
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.389	.270	.387
Q12_33 I am moving towards the things I value	.477	.699	.760
Q12_34 My life has a sense of direction and meaning to it	.464	.602	.726
Q12_35 I lead a purposeful and interesting life	.511	.646	.729
Q12_36 I am not realising my potential	.421	.352	.473
Q12_37 I make good use of my strengths, (talents,abilities and interests	.413	.599	.612
Q12_38 I don't adapt well to change	.291	.343	.311
Q12_39 I am engaged and interested in my daily activities	.447	.592	.607
Q12_40 I am continually learning and growing	.517	.715	.661

Inter-Item Correlation Matrix

	Q12_29 My life is not expanding - it is stagnant	Q12_30 I am making progress	Q12_31 My life is getting better
Q12_23 I am always learning something new or useful	.434	.553	.518
Q12_24 My life is not improving	.599	.537	.589
Q12_25 I am developing a lot as a person	.539	.705	.644
Q12_26 I am not growing as a person	.553	.532	.462

Q12_27 My understanding and effectiveness is always growing	.489	.706	.623
Q12_28 I feel like I am moving forward	.621	.779	.747
Q12_29 My life is not expanding - it is stagnant	1.000	.524	.500
Q12_30 I am making progress	.524	1.000	.695
Q12_31 My life is getting better	.500	.695	1.000
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.460	.316	.307
Q12_33 I am moving towards the things I value	.512	.717	.656
Q12_34 My life has a sense of direction and meaning to it	.550	.668	.622
Q12_35 I lead a purposeful and interesting life	.533	.659	.619
Q12_36 I am not realising my potential	.493	.409	.366
Q12_37 I make good use of my strengths, (talents,abilities and interests	.456	.579	.530
Q12_38 I don't adapt well to change	.304	.263	.273
Q12_39 I am engaged and interested in my daily activities	.505	.535	.532
Q12_40 I am continually learning and growing	.484	.679	.612

Inter-Item Correlation Matrix

	Q12_32 My life is not really consistent with my personal values (what I think is important in life)	Q12_33 I am moving towards the things I value	Q12_34 My life has a sense of direction and meaning to it
Q12_23 I am always learning something new or useful	.236	.577	.547
Q12_24 My life is not improving	.433	.523	.529
Q12_25 I am developing a lot as a person	.319	.666	.633
Q12_26 I am not growing as a person	.389	.477	.464
Q12_27 My understanding and effectiveness is always growing	.270	.699	.602
Q12_28 I feel like I am moving forward	.387	.760	.726
Q12_29 My life is not expanding - it is stagnant	.460	.512	.550
Q12_30 I am making progress	.316	.717	.668
Q12_31 My life is getting better	.307	.656	.622
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	1.000	.356	.415
Q12_33 I am moving towards the things I value	.356	1.000	.680
Q12_34 My life has a sense of direction and meaning to it	.415	.680	1.000
Q12_35 I lead a purposeful and interesting life	.356	.688	.726
Q12_36 I am not realising my potential	.389	.404	.500
Q12_37 I make good use of my strengths, (talents,abilities and interests	.320	.615	.603
Q12_38 I don't adapt well to change	.251	.254	.302
Q12_39 I am engaged and interested in my daily activities	.396	.568	.606
Q12_40 I am continually learning and growing	.289	.664	.606

Inter-Item Correlation Matrix

	Q12_35 I lead a purposeful and interesting life	Q12_36 I am not realising my potential	Q12_37 I make good use of my strengths, (talents,abilities and interests
Q12_23 I am always learning something new or useful	.600	.323	.571
Q12_24 My life is not improving	.531	.458	.411
Q12_25 I am developing a lot as a person	.627	.382	.609
Q12_26 I am not growing as a person	.511	.421	.413

Q12_27 My understanding and effectiveness is always growing	.646	.352	.599
Q12_28 I feel like I am moving forward	.729	.473	.612
Q12_29 My life is not expanding - it is stagnant	.533	.493	.456
Q12_30 I am making progress	.659	.409	.579
Q12_31 My life is getting better	.619	.366	.530
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.356	.389	.320
Q12_33 I am moving towards the things I value	.688	.404	.615
Q12_34 My life has a sense of direction and meaning to it	.726	.500	.603
Q12_35 I lead a purposeful and interesting life	1.000	.464	.653
Q12_36 I am not realising my potential	.464	1.000	.464
Q12_37 I make good use of my strengths, (talents,abilities and interests	.653	.464	1.000
Q12_38 I don't adapt well to change	.351	.258	.285
Q12_39 I am engaged and interested in my daily activities	.675	.455	.606
Q12_40 I am continually learning and growing	.636	.360	.576

Inter-Item Correlation Matrix

	Q12_38 I don't adapt well to change	Q12_39 I am engaged and interested in my daily activities	Q12_40 I am continually learning and growing
Q12_23 I am always learning something new or useful	.281	.561	.703
Q12_24 My life is not improving	.308	.479	.478
Q12_25 I am developing a lot as a person	.262	.527	.700
Q12_26 I am not growing as a person	.291	.447	.517
Q12_27 My understanding and effectiveness is always growing	.343	.592	.715
Q12_28 I feel like I am moving forward	.311	.607	.661
Q12_29 My life is not expanding - it is stagnant	.304	.505	.484
Q12_30 I am making progress	.263	.535	.679
Q12_31 My life is getting better	.273	.532	.612
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.251	.396	.289
Q12_33 I am moving towards the things I value	.254	.568	.664
Q12_34 My life has a sense of direction and meaning to it	.302	.606	.606
Q12_35 I lead a purposeful and interesting life	.351	.675	.636
Q12_36 I am not realising my potential	.258	.455	.360
Q12_37 I make good use of my strengths, (talents,abilities and interests	.285	.606	.576
Q12_38 I don't adapt well to change	1.000	.309	.254
Q12_39 I am engaged and interested in my daily activities	.309	1.000	.521
Q12_40 I am continually learning and growing	.254	.521	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_23 I am always learning something new or useful	121.1873	968.541	.680
Q12_24 My life is not improving	120.2375	969.049	.671
Q12_25 I am developing a lot as a person	121.4281	955.033	.771
Q12_26 I am not growing as a person	120.1622	975.898	.637
Q12_27 My understanding and effectiveness is always growing	121.2592	963.392	.772
Q12_28 I feel like I am moving forward	121.5518	936.311	.849
Q12_29 My life is not expanding - it is stagnant	120.6839	958.160	.685

Q12_30 I am making progress	121.2559	954.713	.792
Q12_31 My life is getting better	121.5569	955.962	.744
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	120.7057	996.175	.466
Q12_33 I am moving towards the things I value	121.1405	957.451	.788
Q12_34 My life has a sense of direction and meaning to it	121.4281	940.218	.787
Q12_35 I lead a purposeful and interesting life	121.4816	946.743	.806
Q12_36 I am not realising my potential	121.8930	972.035	.553
Q12_37 I make good use of my strengths, (talents,abilities and interests	121.5502	967.363	.712
Q12_38 I don't adapt well to change	121.0870	1007.788	.383
Q12_39 I am engaged and interested in my daily activities	121.4916	963.232	.714
Q12_40 I am continually learning and growing	120.8746	958.120	.756

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_23 I am always learning something new or useful	.577	.946
Q12_24 My life is not improving	.531	.947
Q12_25 I am developing a lot as a person	.662	.945
Q12_26 I am not growing as a person	.465	.947
Q12_27 My understanding and effectiveness is always growing	.688	.945
Q12_28 I feel like I am moving forward	.780	.943
Q12_29 My life is not expanding - it is stagnant	.542	.946
Q12_30 I am making progress	.710	.945
Q12_31 My life is getting better	.636	.945
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.320	.950
Q12_33 I am moving towards the things I value	.684	.945
Q12_34 My life has a sense of direction and meaning to it	.660	.944
Q12_35 I lead a purposeful and interesting life	.696	.944
Q12_36 I am not realising my potential	.390	.949
Q12_37 I make good use of my strengths, (talents,abilities and interests	.566	.946
Q12_38 I don't adapt well to change	.192	.952
Q12_39 I am engaged and interested in my daily activities	.570	.946
Q12_40 I am continually learning and growing	.683	.945

Scale: Original Contentment

Item Statistics

	Mean	Std. Deviation	N
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	6.9114	2.71922	598
Q12_42 I am competent and capable in the areas of life which are important to me	7.1923	2.25096	598
Q12_43 I don't feel good about my appearance or my body	6.5385	2.70511	598
Q12_44 I like most aspects of my personality	7.0351	2.21774	598
Q12_45 On the whole I am satisfied with myself	6.7258	2.61903	598
Q12_46 I feel that I don't have that many good qualities	8.3562	2.00966	598
Q12_47 I take a positive attitude towards myself	6.7324	2.52332	598
Q12_48 I am proud of who I have become	7.1020	2.42985	598
Q12_49 I have a strong sense of self respect	7.0669	2.51072	598
Q12_50 I wish I could have more respect for myself	6.9515	3.00853	598
Q12_51 In general I feel confident and positive about myself	6.7759	2.57418	598
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	6.5686	2.62723	598

Q12_53 When I compare myself to others, I do not feel so good about myself	7.2023	2.73525	598
Q12_54 I think of myself as a good and strong person	7.4365	2.27251	598
Q12_55 My belief in myself gets me through hard times	6.5385	2.66267	598

Inter-Item Correlation Matrix

	Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	Q12_42 I am competent and capable in the areas of life which are important to me	Q12_43 I don't feel good about my appearance or my body
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	1.000	.449	.442
Q12_42 I am competent and capable in the areas of life which are important to me	.449	1.000	.339
Q12_43 I don't feel good about my appearance or my body	.442	.339	1.000
Q12_44 I like most aspects of my personality	.408	.536	.271
Q12_45 On the whole I am satisfied with myself	.520	.717	.393
Q12_46 I feel that I don't have that many good qualities	.485	.366	.360
Q12_47 I take a positive attitude towards myself	.535	.678	.442
Q12_48 I am proud of who I have become	.428	.640	.303
Q12_49 I have a strong sense of self respect	.504	.577	.360
Q12_50 I wish I could have more respect for myself	.531	.427	.457
Q12_51 In general I feel confident and positive about myself	.579	.724	.416
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.420	.625	.277
Q12_53 When I compare myself to others, I do not feel so good about myself	.570	.508	.485
Q12_54 I think of myself as a good and strong person	.377	.600	.257
Q12_55 My belief in myself gets me through hard times	.483	.566	.349

Inter-Item Correlation Matrix

	Q12_44 I like most aspects of my personality	Q12_45 On the whole I am satisfied with myself	Q12_46 I feel that I don't have that many good qualities
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.408	.520	.485
Q12_42 I am competent and capable in the areas of life which are important to me	.536	.717	.366
Q12_43 I don't feel good about my appearance or my body	.271	.393	.360
Q12_44 I like most aspects of my personality	1.000	.623	.446
Q12_45 On the whole I am satisfied with myself	.623	1.000	.450
Q12_46 I feel that I don't have that many good qualities	.446	.450	1.000
Q12_47 I take a positive attitude towards myself	.588	.742	.433
Q12_48 I am proud of who I have become	.618	.734	.436
Q12_49 I have a strong sense of self respect	.621	.643	.450
Q12_50 I wish I could have more respect for myself	.425	.541	.433
Q12_51 In general I feel confident and positive about myself	.622	.792	.447
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.486	.726	.347
Q12_53 When I compare myself to others, I do not feel so good about myself	.473	.579	.493
Q12_54 I think of myself as a good and strong person	.630	.637	.425

Q12_55 My belief in myself gets me through hard times	.596	.561	.414

Inter-Item Correlation Matrix

	Q12_47 I take a positive attitude towards myself	Q12_48 I am proud of who I have become	Q12_49 I have a strong sense of self respect
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.535	.428	.504
Q12_42 I am competent and capable in the areas of life which are important to me	.678	.640	.577
Q12_43 I don't feel good about my appearance or my body	.442	.303	.360
Q12_44 I like most aspects of my personality	.588	.618	.621
Q12_45 On the whole I am satisfied with myself	.742	.734	.643
Q12_46 I feel that I don't have that many good qualities	.433	.436	.450
Q12_47 I take a positive attitude towards myself	1.000	.635	.680
Q12_48 I am proud of who I have become	.635	1.000	.627
Q12_49 I have a strong sense of self respect	.680	.627	1.000
Q12_50 I wish I could have more respect for myself	.517	.478	.555
Q12_51 In general I feel confident and positive about myself	.783	.687	.686
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.599	.638	.550
Q12_53 When I compare myself to others, I do not feel so good about myself	.561	.526	.521
Q12_54 I think of myself as a good and strong person	.620	.637	.601
Q12_55 My belief in myself gets me through hard times	.631	.563	.585

Inter-Item Correlation Matrix

	Q12_50 I wish I could have more respect for myself	Q12_51 In general I feel confident and positive about myself	Q12_52 When I look at the story of my life, I am pleased with how things have turned out
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.531	.579	.420
Q12_42 I am competent and capable in the areas of life which are important to me	.427	.724	.625
Q12_43 I don't feel good about my appearance or my body	.457	.416	.277
Q12_44 I like most aspects of my personality	.425	.622	.486
Q12_45 On the whole I am satisfied with myself	.541	.792	.726
Q12_46 I feel that I don't have that many good qualities	.433	.447	.347
Q12_47 I take a positive attitude towards myself	.517	.783	.599
Q12_48 I am proud of who I have become	.478	.687	.638
Q12_49 I have a strong sense of self respect	.555	.686	.550
Q12_50 I wish I could have more respect for myself	1.000	.547	.376
Q12_51 In general I feel confident and positive about myself	.547	1.000	.669
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.376	.669	1.000
Q12_53 When I compare myself to others, I do not feel so good about myself	.533	.567	.456
Q12_54 I think of myself as a good and strong person	.399	.594	.533
Q12_55 My belief in myself gets me through hard times	.451	.621	.462

Inter-Item Correlation Matrix

	Q12_53 When I compare myself to others, I do not feel so good about myself	Q12_54 I think of myself as a good and strong person	Q12_55 My belief in myself gets me through hard times
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.570	.377	.483
Q12_42 I am competent and capable in the areas of life which are important to me	.508	.600	.566
Q12_43 I don't feel good about my appearance or my body	.485	.257	.349
Q12_44 I like most aspects of my personality	.473	.630	.596
Q12_45 On the whole I am satisfied with myself	.579	.637	.561
Q12_46 I feel that I don't have that many good qualities	.493	.425	.414
Q12_47 I take a positive attitude towards myself	.561	.620	.631
Q12_48 I am proud of who I have become	.526	.637	.563
Q12_49 I have a strong sense of self respect	.521	.601	.585
Q12_50 I wish I could have more respect for myself	.533	.399	.451
Q12_51 In general I feel confident and positive about myself	.567	.594	.621
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.456	.533	.462
Q12_53 When I compare myself to others, I do not feel so good about myself	1.000	.415	.483
Q12_54 I think of myself as a good and strong person	.415	1.000	.599
Q12_55 My belief in myself gets me through hard times	.483	.599	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	98.2224	699.004	.643
Q12_42 I am competent and capable in the areas of life which are important to me	97.9415	705.074	.742
Q12_43 I don't feel good about my appearance or my body	98.5953	720.704	.488
Q12_44 I like most aspects of my personality	98.0987	711.476	.697
Q12_45 On the whole I am satisfied with myself	98.4080	678.081	.835
Q12_46 I feel that I don't have that many good qualities	96.7776	733.111	.567
Q12_47 I take a positive attitude towards myself	98.4013	684.921	.814
Q12_48 I am proud of who I have become	98.0318	695.575	.760
Q12_49 I have a strong sense of self respect	98.0669	691.724	.763
Q12_50 I wish I could have more respect for myself	98.1823	689.362	.636
Q12_51 In general I feel confident and positive about myself	98.3579	678.910	.845
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	98.5652	697.569	.680
Q12_53 When I compare myself to others, I do not feel so good about myself	97.9314	692.607	.686
Q12_54 I think of myself as a good and strong person	97.6973	709.709	.693
Q12_55 My belief in myself gets me through hard times	98.5953	693.575	.700

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.491	.940
Q12_42 I am competent and capable in the areas of life which are important to me	.623	.937
Q12_43 I don't feel good about my appearance or my body	.337	.944
Q12_44 I like most aspects of my personality	.564	.938
Q12_45 On the whole I am satisfied with myself	.768	.935
Q12_46 I feel that I don't have that many good qualities	.372	.941
Q12_47 I take a positive attitude towards myself	.708	.935
Q12_48 I am proud of who I have become	.643	.937
Q12_49 I have a strong sense of self respect	.613	.937
Q12_50 I wish I could have more respect for myself	.471	.940
Q12_51 In general I feel confident and positive about myself	.766	.934
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.581	.939
Q12_53 When I compare myself to others, I do not feel so good about myself	.521	.939
Q12_54 I think of myself as a good and strong person	.584	.938
Q12_55 My belief in myself gets me through hard times	.540	.938

Scale: Original Connection

Item Statistics

	Mean	Std. Deviation	N
Q12_56 I get on well with the important people in my life	8.1120	2.01564	598
Q12_57 Maintaining close relationships has been difficult and frustrating for me	7.4465	2.66430	598
Q12_58 My social relationships are close, supportive and rewarding	7.0033	2.50226	598
Q12_59 I feel appreciated and valued	6.9649	2.39914	598
Q12_60 I feel understood and accepted	6.7358	2.41792	598
Q12_61 I feel lonely	7.5602	2.67419	598
Q12_62 I have good friends I can count on	7.5970	2.49686	598
Q12_63 I have a good family life	8.0585	2.45528	598
Q12_64 I feel loved	8.0719	2.32599	598
Q12_65 I have a mutually satisfying loving relationship	6.5669	3.41168	598
Q12_66 I feel left out or excluded	7.8980	2.29805	598
Q12_67 I feel like I belong	6.6806	2.65996	598
Q12_68 I feel respected	7.1639	2.29410	598
Q12_69 I feel isolated from others	7.7508	2.54207	598

Inter-Item Correlation Matrix

	Q12_56 I get on well with the important people in my life	Q12_57 Maintaining close relationships has been difficult and frustrating for me	Q12_58 My social relationships are close, supportive and rewarding
Q12_56 I get on well with the important people in my life	1.000	.333	.561
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.333	1.000	.457

Q12_58 My social relationships are close, supportive and rewarding	.561	.457	1.000
Q12_59 I feel appreciated and valued	.582	.384	.684
Q12_60 I feel understood and accepted	.551	.424	.642
Q12_61 I feel lonely	.367	.518	.481
Q12_62 I have good friends I can count on	.482	.372	.726
Q12_63 I have a good family life	.554	.327	.515
Q12_64 I feel loved	.601	.448	.616
Q12_65 I have a mutually satisfying loving relationship	.337	.394	.357
Q12_66 I feel left out or excluded	.339	.469	.476
Q12_67 I feel like I belong	.531	.451	.591
Q12_68 I feel respected	.565	.442	.591
Q12_69 I feel isolated from others	.324	.573	.533

Inter-Item Correlation Matrix

	Q12_59 I feel appreciated and valued	Q12_60 I feel understood and accepted	Q12_61 I feel lonely
Q12_56 I get on well with the important people in my life	.582	.551	.367
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.384	.424	.518
Q12_58 My social relationships are close, supportive and rewarding	.684	.642	.481
Q12_59 I feel appreciated and valued	1.000	.714	.495
Q12_60 I feel understood and accepted	.714	1.000	.510
Q12_61 I feel lonely	.495	.510	1.000
Q12_62 I have good friends I can count on	.604	.580	.390
Q12_63 I have a good family life	.534	.480	.378
Q12_64 I feel loved	.686	.587	.591
Q12_65 I have a mutually satisfying loving relationship	.419	.381	.485
Q12_66 I feel left out or excluded	.525	.510	.532
Q12_67 I feel like I belong	.663	.668	.579
Q12_68 I feel respected	.740	.686	.492
Q12_69 I feel isolated from others	.481	.509	.641

Inter-Item Correlation Matrix

	Q12_62 I have good friends I can count on	Q12_63 I have a good family life	Q12_64 I feel loved
Q12_56 I get on well with the important people in my life	.482	.554	.601
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.372	.327	.448
Q12_58 My social relationships are close, supportive and rewarding	.726	.515	.616
Q12_59 I feel appreciated and valued	.604	.534	.686
Q12_60 I feel understood and accepted	.580	.480	.587
Q12_61 I feel lonely	.390	.378	.591
Q12_62 I have good friends I can count on	1.000	.378	.490
Q12_63 I have a good family life	.378	1.000	.591
Q12_64 I feel loved	.490	.591	1.000
Q12_65 I have a mutually satisfying loving relationship	.223	.422	.584
Q12_66 I feel left out or excluded	.467	.329	.457
Q12_67 I feel like I belong	.511	.501	.624
Q12_68 I feel respected	.554	.443	.595
Q12_69 I feel isolated from others	.460	.319	.475

Inter-Item Correlation Matrix

	Q12_65 I have a mutually satisfying loving relationship	Q12_66 I feel left out or excluded	Q12_67 I feel like I belong
Q12_56 I get on well with the important people in my life	.337	.339	.531
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.394	.469	.451
Q12_58 My social relationships are close, supportive and rewarding	.357	.476	.591
Q12_59 I feel appreciated and valued	.419	.525	.663
Q12_60 I feel understood and accepted	.381	.510	.668
Q12_61 I feel lonely	.485	.532	.579
Q12_62 I have good friends I can count on	.223	.467	.511
Q12_63 I have a good family life	.422	.329	.501
Q12_64 I feel loved	.584	.457	.624
Q12_65 I have a mutually satisfying loving relationship	1.000	.283	.400
Q12_66 I feel left out or excluded	.283	1.000	.490
Q12_67 I feel like I belong	.400	.490	1.000
Q12_68 I feel respected	.368	.476	.632
Q12_69 I feel isolated from others	.342	.632	.550

Inter-Item Correlation Matrix

	Q12_68 I feel respected	Q12_69 I feel isolated from others
Q12_56 I get on well with the important people in my life	.565	.324
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.442	.573
Q12_58 My social relationships are close, supportive and rewarding	.591	.533
Q12_59 I feel appreciated and valued	.740	.481
Q12_60 I feel understood and accepted	.686	.509
Q12_61 I feel lonely	.492	.641
Q12_62 I have good friends I can count on	.554	.460
Q12_63 I have a good family life	.443	.319
Q12_64 I feel loved	.595	.475
Q12_65 I have a mutually satisfying loving relationship	.368	.342
Q12_66 I feel left out or excluded	.476	.632
Q12_67 I feel like I belong	.632	.550
Q12_68 I feel respected	1.000	.459
Q12_69 I feel isolated from others	.459	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_56 I get on well with the important people in my life	95.4983	589.436	.635
Q12_57 Maintaining close relationships has been difficult and frustrating for me	96.1639	573.886	.585
Q12_58 My social relationships are close, supportive and rewarding	96.6070	559.659	.758
Q12_59 I feel appreciated and valued	96.6455	560.209	.790
Q12_60 I feel understood and accepted	96.8746	562.592	.760
Q12_61 I feel lonely	96.0502	561.863	.683
Q12_62 I have good friends I can count on	96.0134	572.650	.642
Q12_63 I have a good family life	95.5518	578.891	.599
Q12_64 I feel loved	95.5385	563.991	.781
Q12_65 I have a mutually satisfying loving relationship	97.0435	560.584	.516
Q12_66 I feel left out or excluded	95.7124	581.237	.624

Q12_67 I feel like I belong	96.9298	553.878	.756
Q12_68 I feel respected	96.4465	569.665	.737
Q12_69 I feel isolated from others	95.8595	568.972	.662

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_56 I get on well with the important people in my life	.505	.926
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.427	.928
Q12_58 My social relationships are close, supportive and rewarding	.678	.922
Q12_59 I feel appreciated and valued	.721	.921
Q12_60 I feel understood and accepted	.636	.922
Q12_61 I feel lonely	.568	.924
Q12_62 I have good friends I can count on	.579	.926
Q12_63 I have a good family life	.450	.927
Q12_64 I feel loved	.672	.922
Q12_65 I have a mutually satisfying loving relationship	.408	.933
Q12_66 I feel left out or excluded	.491	.926
Q12_67 I feel like I belong	.604	.922
Q12_68 I feel respected	.635	.923
Q12_69 I feel isolated from others	.596	.925

Scale: Original Achievement

Item Statistics

	Mean	Std. Deviation	N
Q12_70 I feel like many of the people I know have gotten more out of life than I have	7.0569	2.74794	598
Q12_71 I've been pretty successful in life	6.7575	2.37443	598
Q12_72 I am not achieving the things that are important to me	7.3896	2.47135	598
Q12_73 I am meeting the goals I set for myself	6.2742	2.42026	598
Q12_74 I don't feel that good about what I accomplish each day	7.3746	2.53620	598
Q12_75 I take pride in my achievements	7.5100	2.26674	598
Q12_76 I derive a sense of accomplishment from my activities	7.1371	2.32630	598
Q12_77 I am successfully meeting my needs, goals and expectations	6.3361	2.43833	598
Q12_78 I have responded successfully to the demands and opportunities of life	6.8077	2.34141	598
Q12_79 I am mastering the things that are important to me	6.6689	2.42490	598
Q12_80 I am doing more than just surviving - I am thriving	6.1003	2.76554	598
Q12_81 I have not made the most of the opportunities life presents	6.7793	2.65519	598
Q12_82 I am realising my dreams and satisfying my deepest yearnings	5.5769	2.71665	598
Q12_83 In many ways I feel disappointed about my achievement in life	7.6873	2.50778	598
Q12_84 I feel proud of what I have done in life	7.1957	2.40884	598
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	6.5619	2.56089	598

Inter-Item Correlation Matrix

	Q12_70 I feel like many of the people I know have gotten more out of life than I have	Q12_71 I've been pretty successful in life	Q12_72 I am not achieving the things that are important to me
Q12_70 I feel like many of the people I know have gotten more out of life than I have	1.000	.463	.492
Q12_71 I've been pretty successful in life	.463	1.000	.401
Q12_72 I am not achieving the things that are important to me	.492	.401	1.000
Q12_73 I am meeting the goals I set for myself	.481	.658	.509
Q12_74 I don't feel that good about what I accomplish each day	.483	.356	.529
Q12_75 I take pride in my achievements	.415	.605	.400
Q12_76 I derive a sense of accomplishment from my activities	.427	.599	.429
Q12_77 I am successfully meeting my needs, goals and expectations	.523	.664	.558
Q12_78 I have responded successfully to the demands and opportunities of life	.470	.691	.392
Q12_79 I am mastering the things that are important to me	.442	.628	.503
Q12_80 I am doing more than just surviving - I am thriving	.503	.584	.561
Q12_81 I have not made the most of the opportunities life presents	.442	.388	.384
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.453	.574	.529
Q12_83 In many ways I feel disappointed about my achievement in life	.561	.545	.615
Q12_84 I feel proud of what I have done in life	.483	.716	.444
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.205	.447	.242

Inter-Item Correlation Matrix

	Q12_73 I am meeting the goals I set for myself	Q12_74 I don't feel that good about what I accomplish each day	Q12_75 I take pride in my achievements
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.481	.483	.415
Q12_71 I've been pretty successful in life	.658	.356	.605
Q12_72 I am not achieving the things that are important to me	.509	.529	.400
Q12_73 I am meeting the goals I set for myself	1.000	.492	.627
Q12_74 I don't feel that good about what I accomplish each day	.492	1.000	.437
Q12_75 I take pride in my achievements	.627	.437	1.000
Q12_76 I derive a sense of accomplishment from my activities	.670	.462	.682
Q12_77 I am successfully meeting my needs, goals and expectations	.776	.555	.664
Q12_78 I have responded successfully to the demands and opportunities of life	.649	.412	.609
Q12_79 I am mastering the things that are important to me	.727	.488	.654
Q12_80 I am doing more than just surviving - I am thriving	.662	.502	.556
Q12_81 I have not made the most of the opportunities life presents	.366	.342	.348
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.710	.476	.557

Q12_83 In many ways I feel disappointed about my achievement in life	.508	.514	.526
Q12_84 I feel proud of what I have done in life	.645	.440	.699
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.468	.277	.409

Inter-Item Correlation Matrix

	Q12_76 I derive a sense of accomplishment from my activities	Q12_77 I am successfully meeting my needs, goals and expectations	Q12_78 I have responded successfully to the demands and opportunities of life
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.427	.523	.470
Q12_71 I've been pretty successful in life	.599	.664	.691
Q12_72 I am not achieving the things that are important to me	.429	.558	.392
Q12_73 I am meeting the goals I set for myself	.670	.776	.649
Q12_74 I don't feel that good about what I accomplish each day	.462	.555	.412
Q12_75 I take pride in my achievements	.682	.664	.609
Q12_76 I derive a sense of accomplishment from my activities	1.000	.714	.607
Q12_77 I am successfully meeting my needs, goals and expectations	.714	1.000	.670
Q12_78 I have responded successfully to the demands and opportunities of life	.607	.670	1.000
Q12_79 I am mastering the things that are important to me	.641	.742	.676
Q12_80 I am doing more than just surviving - I am thriving	.588	.737	.618
Q12_81 I have not made the most of the opportunities life presents	.329	.410	.390
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.606	.724	.594
Q12_83 In many ways I feel disappointed about my achievement in life	.472	.592	.524
Q12_84 I feel proud of what I have done in life	.653	.691	.711
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.463	.464	.456

Inter-Item Correlation Matrix

	Q12_79 I am mastering the things that are important to me	Q12_80 I am doing more than just surviving - I am thriving	Q12_81 I have not made the most of the opportunities life presents
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.442	.503	.442
Q12_71 I've been pretty successful in life	.628	.584	.388
Q12_72 I am not achieving the things that are important to me	.503	.561	.384
Q12_73 I am meeting the goals I set for myself	.727	.662	.366
Q12_74 I don't feel that good about what I accomplish each day	.488	.502	.342
Q12_75 I take pride in my achievements	.654	.556	.348
Q12_76 I derive a sense of accomplishment from my activities	.641	.588	.329
Q12_77 I am successfully meeting my needs, goals and expectations	.742	.737	.410
Q12_78 I have responded successfully to the demands and opportunities of life	.676	.618	.390
Q12_79 I am mastering the things that are important to me	1.000	.674	.356

Q12_80 I am doing more than just surviving - I am thriving	.674	1.000	.378
Q12_81 I have not made the most of the opportunities life presents	.356	.378	1.000
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.691	.704	.382
Q12_83 In many ways I feel disappointed about my achievement in life	.534	.510	.520
Q12_84 I feel proud of what I have done in life	.639	.621	.426
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.438	.445	.221

Inter-Item Correlation Matrix

	Q12_82 I am realising my dreams and satisfying my deepest yearnings	Q12_83 In many ways I feel disappointed about my achievement in life	Q12_84 I feel proud of what I have done in life
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.453	.561	.483
Q12_71 I've been pretty successful in life	.574	.545	.716
Q12_72 I am not achieving the things that are important to me	.529	.615	.444
Q12_73 I am meeting the goals I set for myself	.710	.508	.645
Q12_74 I don't feel that good about what I accomplish each day	.476	.514	.440
Q12_75 I take pride in my achievements	.557	.526	.699
Q12_76 I derive a sense of accomplishment from my activities	.606	.472	.653
Q12_77 I am successfully meeting my needs, goals and expectations	.724	.592	.691
Q12_78 I have responded successfully to the demands and opportunities of life	.594	.524	.711
Q12_79 I am mastering the things that are important to me	.691	.534	.639
Q12_80 I am doing more than just surviving - I am thriving	.704	.510	.621
Q12_81 I have not made the most of the opportunities life presents	.382	.520	.426
Q12_82 I am realising my dreams and satisfying my deepest yearnings	1.000	.512	.609
Q12_83 In many ways I feel disappointed about my achievement in life	.512	1.000	.595
Q12_84 I feel proud of what I have done in life	.609	.595	1.000
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.455	.208	.446

Inter-Item Correlation Matrix

	Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.205
Q12_71 I've been pretty successful in life	.447
Q12_72 I am not achieving the things that are important to me	.242
Q12_73 I am meeting the goals I set for myself	.468
Q12_74 I don't feel that good about what I accomplish each day	.277
Q12_75 I take pride in my achievements	.409
Q12_76 I derive a sense of accomplishment from my activities	.463
Q12_77 I am successfully meeting my needs, goals and expectations	.464
Q12_78 I have responded successfully to the demands and opportunities of life	.456

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Q12_79 I am mastering the things that are important to me	.438
Q12_80 I am doing more than just surviving - I am thriving	.445
Q12_81 I have not made the most of the opportunities life presents	.221
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.455
Q12_83 In many ways I feel disappointed about my achievement in life	.208
Q12_84 I feel proud of what I have done in life	.446
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_70 I feel like many of the people I know have gotten more out of life than I have	102.1572	781.841	.607
Q12_71 I've been pretty successful in life	102.4565	778.651	.743
Q12_72 I am not achieving the things that are important to me	101.8244	789.984	.623
Q12_73 I am meeting the goals I set for myself	102.9398	768.871	.804
Q12_74 I don't feel that good about what I accomplish each day	101.8395	790.617	.601
Q12_75 I take pride in my achievements	101.7040	784.902	.730
Q12_76 I derive a sense of accomplishment from my activities	102.0769	780.490	.745
Q12_77 I am successfully meeting my needs, goals and expectations	102.8779	761.431	.857
Q12_78 I have responded successfully to the demands and opportunities of life	102.4064	778.255	.758
Q12_79 I am mastering the things that are important to me	102.5452	770.145	.793
Q12_80 I am doing more than just surviving - I am thriving	103.1137	756.851	.777
Q12_81 I have not made the most of the opportunities life presents	102.4348	800.521	.500
Q12_82 I am realising my dreams and satisfying my deepest yearnings	103.6371	760.004	.770
Q12_83 In many ways I feel disappointed about my achievement in life	101.5268	779.663	.691
Q12_84 I feel proud of what I have done in life	102.0184	771.191	.790
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	102.6522	804.572	.493

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.443	.945
Q12_71 I've been pretty successful in life	.635	.941
Q12_72 I am not achieving the things that are important to me	.517	.944
Q12_73 I am meeting the goals I set for myself	.703	.940
Q12_74 I don't feel that good about what I accomplish each day	.434	.944
Q12_75 I take pride in my achievements	.616	.942
Q12_76 I derive a sense of accomplishment from my activities	.622	.941
Q12_77 I am successfully meeting my needs, goals and expectations	.767	.939
Q12_78 I have responded successfully to the demands and opportunities of life	.642	.941
Q12_79 I am mastering the things that are important to me	.681	.940
Q12_80 I am doing more than just surviving - I am thriving	.651	.940
Q12_81 I have not made the most of the opportunities life presents	.323	.947

Q12_82 I am realising my dreams and satisfying my deepest yearnings	.646	.941
Q12_83 In many ways I feel disappointed about my achievement in life	.608	.942
Q12_84 I feel proud of what I have done in life	.695	.940
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.338	.947

Appendix K: Factor Analysis using Principal Axis Factoring – 5 Factors

Communalities

	Initial	Extraction
Q12_1 I don't get enough restful sleep to enable me to function at my best	.375	.270
Q12_2 My body doesn't get what it needs to function at its best	.570	.494
Q12_3 My physical state or health interferes with my ability to function well	.709	.531
Q12_4 I eat well	.622	.514
Q12_5 My living conditions don't allow me to function at my best	.394	.283
Q12_6 I don't take very good care of myself	.613	.548
Q12_7 I am not physically active enough to be really fit, health and energetic	.469	.401
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs	.193	.046
Q12_9 My physical and health needs are met	.592	.551
Q12_10 My physical state or health disrupts my life	.718	.514
Q12_11 My need for touch and physical contact isn't really being met.	.510	.344
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)	.518	.380
Q12_13 I don't feel safe	.562	.389
Q12_14 I don't feel secure	.616	.497
Q12_15 My life is not very stable, predictable or reassuring	.449	.309
Q12_16 The fundamentals of my life are dependable and reliable	.603	.512
Q12_17 I am sometimes subject to threat, danger or injury	.435	.213
Q12_18 I can't rely on the important people in my life	.392	.291
Q12_19 I don't have a secure or reliable income	.402	.177
Q12_20 My family makes me feel safe and secure	.668	.500
Q12_21 I have enough money to meet my needs	.517	.237
Q12_22 I feel financially insecure	.429	.175
Q12_23 I am always learning something new or useful	.655	.526
Q12_24 My life is not improving	.646	.573
Q12_25 I am developing a lot as a person	.716	.635
Q12_26 I am not growing as a person	.571	.459
Q12_27 My understanding and effectiveness is always growing	.753	.656
Q12_28 I feel like I am moving forward	.818	.779
Q12_29 My life is not expanding - it is stagnant	.627	.584
Q12_30 I am making progress	.754	.694
Q12_31 My life is getting better	.710	.639
Q12_32 My life is not really consistent with my personal values (what I think is important in life)	.483	.391
Q12_33 I am moving towards the things I value	.734	.683
Q12_34 My life has a sense of direction and meaning to it	.773	.692
Q12_35 I lead a purposeful and interesting life	.777	.721
Q12_36 I am not realising my potential	.561	.457
Q12_37 I make good use of my strengths, (talents,abilities and interests	.706	.603
Q12_38 I don't adapt well to change	.318	.204
Q12_39 I am engaged and interested in my daily activities	.685	.564
Q12_40 I am continually learning and growing	.735	.636

Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.596	.491
Q12_42 I am competent and capable in the areas of life which are important to me	.746	.657
Q12_43 I don't feel good about my appearance or my body	.529	.413
Q12_44 I like most aspects of my personality	.643	.560
Q12_45 On the whole I am satisfied with myself	.810	.742
Q12_46 I feel that I don't have that many good qualities	.531	.399
Q12_47 I take a positive attitude towards myself	.764	.700
Q12_48 I am proud of who I have become	.768	.676
Q12_49 I have a strong sense of self respect	.687	.645
Q12_50 I wish I could have more respect for myself	.592	.526
Q12_51 In general I feel confident and positive about myself	.813	.738
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.729	.618
Q12_53 When I compare myself to others, I do not feel so good about myself	.627	.576
Q12_54 I think of myself as a good and strong person	.668	.555
Q12_55 My belief in myself gets me through hard times	.624	.553
Q12_56 I get on well with the important people in my life	.612	.530
Q12_57 Maintaining close relationships has been difficult and frustrating for me	.544	.454
Q12_58 My social relationships are close, supportive and rewarding	.747	.616
Q12_59 I feel appreciated and valued	.791	.711
Q12_60 I feel understood and accepted	.709	.647
Q12_61 I feel lonely	.703	.595
Q12_62 I have good friends I can count on	.651	.464
Q12_63 I have a good family life	.701	.517
Q12_64 I feel loved	.735	.678
Q12_65 I have a mutually satisfying loving relationship	.578	.371
Q12_66 I feel left out or excluded	.582	.481
Q12_67 I feel like I belong	.675	.631
Q12_68 I feel respected	.735	.659
Q12_69 I feel isolated from others	.670	.568
Q12_70 I feel like many of the people I know have gotten more out of life than I have	.570	.512
Q12_71 I've been pretty successful in life	.709	.586
Q12_72 I am not achieving the things that are important to me	.628	.535
Q12_73 I am meeting the goals I set for myself	.751	.682
Q12_74 I don't feel that good about what I accomplish each day	.591	.506
Q12_75 I take pride in my achievements	.714	.607
Q12_76 I derive a sense of accomplishment from my activities	.695	.620
Q12_77 I am successfully meeting my needs, goals and expectations	.834	.783
Q12_78 I have responded successfully to the demands and opportunities of life	.728	.658
Q12_79 I am mastering the things that are important to me	.762	.702
Q12_80 I am doing more than just surviving - I am thriving	.749	.674
Q12_81 I have not made the most of the opportunities life presents	.495	.336
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.742	.659
Q12_83 In many ways I feel disappointed about my achievement in life	.705	.634

		.778	.673
Q12_84 I feel proud of what I have done in life		.778	.673
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing		.458	.332

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	35.128	41.328	41.328	34.719	40.846	40.846	28.542
2	4.823	5.674	47.001	4.311	5.072	45.918	16.830
3	2.845	3.347	50.348	2.340	2.753	48.671	13.970
4	2.324	2.734	53.082	1.844	2.169	50.840	15.434
5	2.153	2.533	55.615	1.723	2.027	52.867	16.133
6	1.687	1.985	57.600				
7	1.411	1.660	59.260				
8	1.298	1.527	60.788				
9	1.176	1.383	62.171				
10	1.143	1.345	63.516				
11	1.050	1.235	64.751				
12	1.003	1.180	65.931				
13	.984	1.158	67.089				
14	.918	1.080	68.169				
15	.878	1.033	69.202				
16	.844	.993	70.195				
17	.829	.976	71.170				
18	.802	.943	72.114				
19	.752	.885	72.999				
20	.731	.860	73.859				
21	.700	.823	74.683				
22	.676	.795	75.478				
23	.660	.776	76.254				
24	.629	.740	76.994				
25	.607	.714	77.708				
26	.589	.693	78.401				
27	.568	.668	79.069				
28	.565	.664	79.733				
29	.557	.656	80.389				
30	.544	.640	81.028				
31	.530	.623	81.652				
32	.515	.606	82.257				
33	.502	.590	82.848				
34	.491	.577	83.425				
35	.485	.570	83.995				
36	.462	.543	84.539				
37	.457	.538	85.077				
38	.451	.530	85.607				
39	.442	.520	86.127				
40	.425	.500	86.627				
41	.417	.490	87.117				
42	.406	.478	87.595				

43	.395	.465	88.059					
44	.390	.459	88.519					
45	.385	.453	88.972					
46	.377	.443	89.415					
47	.366	.430	89.845					
48	.359	.422	90.267					
49	.356	.418	90.685					
50	.340	.400	91.086					
51	.334	.393	91.478					
52	.322	.379	91.857					
53	.315	.371	92.228					
54	.310	.365	92.593					
55	.302	.355	92.948					
56	.286	.336	93.284					
57	.283	.333	93.617					
58	.280	.329	93.946					
59	.268	.315	94.261					
60	.263	.309	94.571					
61	.254	.299	94.869					
62	.250	.294	95.163					
63	.245	.288	95.452					
64	.239	.281	95.732					
65	.234	.275	96.007					
66	.223	.262	96.270					
67	.219	.257	96.527					
68	.210	.247	96.774					
69	.209	.245	97.020					
70	.205	.241	97.260					
71	.200	.235	97.495					
72	.195	.229	97.725					
73	.192	.225	97.950					
74	.181	.212	98.162					
75	.171	.202	98.364					
76	.170	.200	98.564					
77	.161	.189	98.753					
78	.159	.187	98.940					
79	.150	.177	99.117					
80	.142	.167	99.284					
81	.133	.156	99.440					
82	.130	.153	99.593					
83	.123	.145	99.738					
84	.115	.135	99.873					
85	.108	.127	100.000					

Extraction Method: Principal Axis Factoring.
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix^a

	Factor				
	1	2	3	4	5
Q12_1 I don't get enough restful sleep to enable me to function at my best				.499	

Item	1	2	3	4	5
Q12_2 My body doesn't get what it needs to function at its best				.728	
Q12_3 My physical state or health interferes with my ability to function well				.699	
Q12_4 I eat well			.307	.517	
Q12_5 My living conditions don't allow me to function at my best		.375			
Q12_6 I don't take very good care of myself				.708	
Q12_7 I am not physically active enough to be really fit, health and energetic				.682	
Q12_8 If I am honest with myself, I probably overuse alcohol or other drugs					
Q12_9 My physical and health needs are met				.596	
Q12_10 My physical state or health disrupts my life				.637	
Q12_11 My need for touch and physical contact isn't really being met.		.564			
Q12_12 I don't have the right level of variety and stimulation in my life (I'm either bored or overloaded)		.376			
Q12_13 I don't feel safe		.466			
Q12_14 I don't feel secure		.494			
Q12_15 My life is not very stable, predictable or reassuring		.497			
Q12_16 The fundamentals of my life are dependable and reliable	.308		.391		
Q12_17 I am sometimes subject to threat, danger or injury		.365			
Q12_18 I can't rely on the important people in my life		.419			
Q12_19 I don't have a secure or reliable income		.371			
Q12_20 My family makes me feel safe and secure			.573		
Q12_21 I have enough money to meet my needs					
Q12_22 I feel financially insecure		.401			
Q12_23 I am always learning something new or useful	.736				
Q12_24 My life is not improving	.475	.493			
Q12_25 I am developing a lot as a person	.784				
Q12_26 I am not growing as a person	.465	.342			
Q12_27 My understanding and effectiveness is always growing	.742				
Q12_28 I feel like I am moving forward	.800				
Q12_29 My life is not expanding - it is stagnant	.525	.473			
Q12_30 I am making progress	.843				
Q12_31 My life is getting better	.758				
Q12_32 My life is not really consistent with my personal values (what I think is important in life)		.488			
Q12_33 I am moving towards the things I value	.751				
Q12_34 My life has a sense of direction and meaning to it	.618				
Q12_35 I lead a purposeful and interesting life	.629				
Q12_36 I am not realising my potential		.362			
Q12_37 I make good use of my strengths, (talents,abilities and interests	.636				
Q12_38 I don't adapt well to change					
Q12_39 I am engaged and interested in my daily activities	.546				

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Item	1	2	3	4	5
Q12_40 I am continually learning and growing	.859				
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves					-.436
Q12_42 I am competent and capable in the areas of life which are important to me	.533				
Q12_43 I don't feel good about my appearance or my body				.463	-.301
Q12_44 I like most aspects of my personality					-.469
Q12_45 On the whole I am satisfied with myself	.478				-.316
Q12_46 I feel that I don't have that many good qualities					-.350
Q12_47 I take a positive attitude towards myself	.349				-.450
Q12_48 I am proud of who I have become	.500				-.328
Q12_49 I have a strong sense of self respect					-.529
Q12_50 I wish I could have more respect for myself					-.566
Q12_51 In general I feel confident and positive about myself	.403				-.429
Q12_52 When I look at the story of my life, I am pleased with how things have turned out	.485				
Q12_53 When I compare myself to others, I do not feel so good about myself					-.499
Q12_54 I think of myself as a good and strong person	.391				-.330
Q12_55 My belief in myself gets me through hard times					-.448
Q12_56 I get on well with the important people in my life			.560		
Q12_57 Maintaining close relationships has been difficult and frustrating for me		.500			
Q12_58 My social relationships are close, supportive and rewarding			.514		
Q12_59 I feel appreciated and valued			.509		
Q12_60 I feel understood and accepted			.429		
Q12_61 I feel lonely		.573			
Q12_62 I have good friends I can count on			.428		
Q12_63 I have a good family life			.563		
Q12_64 I feel loved		.316	.535		
Q12_65 I have a mutually satisfying loving relationship		.380	.358		
Q12_66 I feel left out or excluded		.478			
Q12_67 I feel like I belong			.365		
Q12_68 I feel respected			.407		-.341
Q12_69 I feel isolated from others		.553			
Q12_70 I feel like many of the people I know have gotten more out of life than I have		.433			
Q12_71 I've been pretty successful in life	.516				
Q12_72 I am not achieving the things that are important to me	.334	.491			
Q12_73 I am meeting the goals I set for myself	.704				
Q12_74 I don't feel that good about what I accomplish each day	.318	.343			
Q12_75 I take pride in my achievements	.545				
Q12_76 I derive a sense of accomplishment from my activities	.666				
Q12_77 I am successfully meeting my needs, goals and expectations	.665				

	1	2	3	4	5
Q12_78 I have responded successfully to the demands and opportunities of life	.504				-.309
Q12_79 I am mastering the things that are important to me	.638				
Q12_80 I am doing more than just surviving - I am thriving	.581				
Q12_81 I have not made the most of the opportunities life presents		.329			
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.710				
Q12_83 In many ways I feel disappointed about my achievement in life	.310	.498			
Q12_84 I feel proud of what I have done in life	.560				-.346
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.513				

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.[a]
a. Rotation converged in 22 iterations.

Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	.397	.455	.415	-.494
2	.397	1.000	.290	.483	-.301
3	.455	.290	1.000	.243	-.229
4	.415	.483	.243	1.000	-.368
5	-.494	-.301	-.229	-.368	1.000

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

Appendix L: Reliability Analysis – Positive Affect, Negative Affect, Satisfaction

with Life, and the Revised 5-Factor Thrive Survive Survey

Scale: Positive Affect

Item Statistics

	Mean	Std. Deviation	N
Positive	3.75	.921	598
Good	3.79	.872	598
Pleasant	3.82	.835	598
Happy	3.73	.974	598
Joyful	3.37	1.093	598
Contented	3.53	1.116	598

Inter-Item Correlation Matrix

	Positive	Good	Pleasant	Happy	Joyful	Contented
Positive	1.000	.780	.668	.771	.689	.669
Good	.780	1.000	.673	.756	.667	.642
Pleasant	.668	.673	1.000	.682	.647	.620
Happy	.771	.756	.682	1.000	.769	.680
Joyful	.689	.667	.647	.769	1.000	.665
Contented	.669	.642	.620	.680	.665	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Positive	18.24	17.807	.826
Good	18.20	18.281	.810
Pleasant	18.17	18.928	.751
Happy	18.26	17.238	.852
Joyful	18.62	16.782	.793
Contented	18.46	16.956	.748

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Positive	.708	.910
Good	.687	.913
Pleasant	.566	.920
Happy	.738	.906
Joyful	.648	.915
Contented	.561	.922

Scale: Negative Affect

Item Statistics

	Mean	Std. Deviation	N
Negative	2.90	1.029	598
Bad	2.48	1.060	598
Unpleasant	2.40	.969	598
Sad	2.61	1.086	598
Afraid	1.95	1.079	598
Angry	2.61	1.016	598

Inter-Item Correlation Matrix

	Negative	Bad	Unpleasant	Sad	Afraid	Angry
Negative	1.000	.666	.648	.637	.489	.435
Bad	.666	1.000	.656	.574	.411	.390
Unpleasant	.648	.656	1.000	.562	.451	.428
Sad	.637	.574	.562	1.000	.475	.438
Afraid	.489	.411	.451	.475	1.000	.361
Angry	.435	.390	.428	.438	.361	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Negative	12.06	15.725	.755
Bad	12.47	15.918	.698
Unpleasant	12.55	16.402	.715
Sad	12.34	15.761	.697
Afraid	13.01	16.911	.549
Angry	12.35	17.564	.511

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Negative	.594	.818
Bad	.547	.828
Unpleasant	.540	.826
Sad	.495	.828
Afraid	.310	.856
Angry	.265	.861

Scale: SWLS

Item Statistics

	Mean	Std. Deviation	N
Q10_1 - In most ways, m	4.96	1.626	598
Q10_2 - The conditions	5.33	1.557	598
Q10_3 - I am satisfied	5.18	1.644	598
Q10_4 - So far I have g	5.54	1.426	598
Q10_5 - If I could live	4.25	1.871	598

Inter-Item Correlation Matrix

	Q10_1 - In most ways, m	Q10_2 - The conditions	Q10_3 - I am satisfied	Q10_4 - So far I have g
Q10_1 - In most ways, m	1.000	.706	.816	.645
Q10_2 - The conditions	.706	1.000	.720	.582
Q10_3 - I am satisfied	.816	.720	1.000	.708
Q10_4 - So far I have g	.645	.582	.708	1.000
Q10_5 - If I could live	.547	.480	.560	.522

Inter-Item Correlation Matrix

	Q10_5 - If I could live
Q10_1 - In most ways, m	.547
Q10_2 - The conditions	.480
Q10_3 - I am satisfied	.560
Q10_4 - So far I have g	.522
Q10_5 - If I could live	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q10_1 - In most ways, m	20.30	29.289	.810
Q10_2 - The conditions	19.93	31.116	.728
Q10_3 - I am satisfied	20.08	28.666	.841
Q10_4 - So far I have g	19.72	32.467	.719
Q10_5 - If I could live	21.01	30.320	.600

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q10_1 - In most ways, m	.705	.848
Q10_2 - The conditions	.567	.867
Q10_3 - I am satisfied	.749	.840
Q10_4 - So far I have g	.536	.870
Q10_5 - If I could live	.365	.902

Scale: Revised Physical

Item Statistics

	Mean	Std. Deviation	N
Q12_1 I don't get enough restful sleep to enable me to function at my best	6.4732	2.96464	598
Q12_2 My body doesn't get what it needs to function at its best	7.2258	2.61631	598
Q12_3 My physical state or health interferes with my ability to function well	7.6990	2.70176	598
Q12_4 I eat well	6.9766	2.40730	598
Q12_6 I don't take very good care of myself	7.5452	2.40194	598
Q12_7 I am not physically active enough to be really fit, health and energetic	6.5418	2.99426	598
Q12_9 My physical and health needs are met	6.7993	2.60778	598
Q12_10 My physical state or health disrupts my life	7.7492	2.68577	598

	Q12_1 I don't get enough restful sleep to enable me to function at my best	Q12_2 My body doesn't get what it needs to function at its best	Q12_3 My physical state or health interferes with my ability to function well
Q12_1 I don't get enough restful sleep to enable me to function at my best	1.000	.427	.321
Q12_2 My body doesn't get what it needs to function at its best	.427	1.000	.447
Q12_3 My physical state or health interferes with my ability to function well	.321	.447	1.000
Q12_4 I eat well	.249	.445	.367
Q12_6 I don't take very good care of myself	.382	.499	.447
Q12_7 I am not physically active enough to be really fit, health and energetic	.278	.416	.431
Q12_9 My physical and health needs are met	.260	.423	.506
Q12_10 My physical state or health disrupts my life	.337	.459	.778

	Q12_4 I eat well	Q12_6 I don't take very good care of myself	Q12_7 I am not physically active enough to be really fit, health and energetic
Q12_1 I don't get enough restful sleep to enable me to function at my best	.249	.382	.278
Q12_2 My body doesn't get what it needs to function at its best	.445	.499	.416
Q12_3 My physical state or health interferes with my ability to function well	.367	.447	.431
Q12_4 I eat well	1.000	.534	.299
Q12_6 I don't take very good care of myself	.534	1.000	.549
Q12_7 I am not physically active enough to be really fit, health and energetic	.299	.549	1.000
Q12_9 My physical and health needs are met	.551	.454	.425
Q12_10 My physical state or health disrupts my life	.348	.418	.374

	Q12_9 My physical and health needs are met	Q12_10 My physical state or health disrupts my life
Q12_1 I don't get enough restful sleep to enable me to function at my best	.260	.337
Q12_2 My body doesn't get what it needs to function at its best	.423	.459
Q12_3 My physical state or health interferes with my ability to function well	.506	.778
Q12_4 I eat well	.551	.348
Q12_6 I don't take very good care of myself	.454	.418
Q12_7 I am not physically active enough to be really fit, health and energetic	.425	.374
Q12_9 My physical and health needs are met	1.000	.466
Q12_10 My physical state or health disrupts my life	.466	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_1 I don't get enough restful sleep to enable me to function at my best	50.5368	181.646	.439
Q12_2 My body doesn't get what it needs to function at its best	49.7843	175.148	.629
Q12_3 My physical state or health interferes with my ability to function well	49.3110	170.788	.672
Q12_4 I eat well	50.0334	183.885	.549
Q12_6 I don't take very good care of myself	49.4649	177.103	.667
Q12_7 I am not physically active enough to be really fit, health and energetic	50.4682	173.271	.549
Q12_9 My physical and health needs are met	50.2107	176.056	.617
Q12_10 My physical state or health disrupts my life	49.2609	172.766	.645

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_1 I don't get enough restful sleep to enable me to function at my best	.234	.854
Q12_2 My body doesn't get what it needs to function at its best	.408	.829

Q12_3 My physical state or health interferes with my ability to function well	.646	.824
Q12_4 I eat well	.429	.839
Q12_6 I don't take very good care of myself	.501	.826
Q12_7 I am not physically active enough to be really fit, health and energetic	.378	.840
Q12_9 My physical and health needs are met	.444	.831
Q12_10 My physical state or health disrupts my life	.627	.827

Scale: Revised Security

Item Statistics

	Mean	Std. Deviation	N
Q12_13 I don't feel safe	8.8829	2.03314	598
Q12_14 I don't feel secure	8.0201	2.36946	598
Q12_15 My life is not very stable, predictable or reassuring	8.0987	2.37420	598
Q12_17 I am sometimes subject to threat, danger or injury	8.7090	2.08342	598
Q12_18 I can't rely on the important people in my life	8.4314	2.28193	598
Q12_19 I don't have a secure or reliable income	8.1171	2.72460	598
Q12_22 I feel financially insecure	7.0936	2.84342	598

Inter-Item Correlation Matrix

	Q12_13 I don't feel safe	Q12_14 I don't feel secure	Q12_15 My life is not very stable, predictable or reassuring
Q12_13 I don't feel safe	1.000	.543	.365
Q12_14 I don't feel secure	.543	1.000	.475
Q12_15 My life is not very stable, predictable or reassuring	.365	.475	1.000
Q12_17 I am sometimes subject to threat, danger or injury	.457	.316	.292
Q12_18 I can't rely on the important people in my life	.341	.391	.223
Q12_19 I don't have a secure or reliable income	.306	.378	.334
Q12_22 I feel financially insecure	.212	.354	.301

	Q12_17 I am sometimes subject to threat, danger or injury	Q12_18 I can't rely on the important people in my life	Q12_19 I don't have a secure or reliable income
Q12_13 I don't feel safe	.457	.341	.306
Q12_14 I don't feel secure	.316	.391	.378
Q12_15 My life is not very stable, predictable or reassuring	.292	.223	.334
Q12_17 I am sometimes subject to threat, danger or injury	1.000	.234	.195
Q12_18 I can't rely on the important people in my life	.234	1.000	.220
Q12_19 I don't have a secure or reliable income	.195	.220	1.000
Q12_22 I feel financially insecure	.139	.218	.407

	Q12_22 I feel financially insecure
Q12_13 I don't feel safe	.212
Q12_14 I don't feel secure	.354
Q12_15 My life is not very stable, predictable or reassuring	.301
Q12_17 I am sometimes subject to threat, danger or injury	.139
Q12_18 I can't rely on the important people in my life	.218
Q12_19 I don't have a secure or reliable income	.407
Q12_22 I feel financially insecure	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_13 I don't feel safe	48.4699	90.276	.560
Q12_14 I don't feel secure	49.3328	82.872	.639
Q12_15 My life is not very stable, predictable or reassuring	49.2542	87.862	.506
Q12_17 I am sometimes subject to threat, danger or injury	48.6438	95.734	.392
Q12_18 I can't rely on the important people in my life	48.9214	93.245	.399
Q12_19 I don't have a secure or reliable income	49.2358	84.773	.475
Q12_22 I feel financially insecure	50.2592	85.884	.419

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_13 I don't feel safe	.405	.717
Q12_14 I don't feel secure	.449	.696
Q12_15 My life is not very stable, predictable or reassuring	.284	.725
Q12_17 I am sometimes subject to threat, danger or injury	.232	.747
Q12_18 I can't rely on the important people in my life	.188	.747
Q12_19 I don't have a secure or reliable income	.255	.733
Q12_22 I feel financially insecure	.227	.748

Scale: Revised AchGr

Item Statistics

	Mean	Std. Deviation	N
Q12_23 I am always learning something new or useful	7.1054	2.42625	598
Q12_25 I am developing a lot as a person	6.8645	2.43922	598
Q12_26 I am not growing as a person	8.1304	2.39829	598
Q12_27 My understanding and effectiveness is always growing	7.0334	2.26670	598
Q12_28 I feel like I am moving forward	6.7408	2.58290	598
Q12_30 I am making progress	7.0368	2.38687	598
Q12_31 My life is getting better	6.7358	2.49900	598
Q12_33 I am moving towards the things I value	7.1522	2.34222	598
Q12_34 My life has a sense of direction and meaning to it	6.8645	2.68753	598
Q12_35 I lead a purposeful and interesting life	6.8110	2.50415	598
Q12_37 I make good use of my strengths, (talents,abilities and interests	6.7425	2.35477	598
Q12_39 I am engaged and interested in my daily activities	6.8010	2.43623	598
Q12_40 I am continually learning and growing	7.4181	2.41973	598
Q12_71 I've been pretty successful in life	6.7575	2.37443	598
Q12_73 I am meeting the goals I set for myself	6.2742	2.42026	598
Q12_75 I take pride in my achievements	7.5100	2.26674	598

Q12_76 I derive a sense of accomplishment from my activities	7.1371	2.32630	598
Q12_77 I am successfully meeting my needs, goals and expectations	6.3361	2.43833	598
Q12_78 I have responded successfully to the demands and opportunities of life	6.8077	2.34141	598
Q12_79 I am mastering the things that are important to me	6.6689	2.42490	598
Q12_80 I am doing more than just surviving - I am thriving	6.1003	2.76554	598
Q12_82 I am realising my dreams and satisfying my deepest yearnings	5.5769	2.71665	598
Q12_84 I feel proud of what I have done in life	7.1957	2.40884	598
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	6.5619	2.56089	598

Inter-Item Correlation Matrix

	Q12_23 I am always learning something new or useful	Q12_25 I am developing a lot as a person	Q12_26 I am not growing as a person	Q12_27 My understanding and effectiveness is always growing
Q12_23 I am always learning something new or useful	1.000	.585	.444	.633
Q12_25 I am developing a lot as a person	.585	1.000	.528	.708
Q12_26 I am not growing as a person	.444	.528	1.000	.502
Q12_27 My understanding and effectiveness is always growing	.633	.708	.502	1.000
Q12_28 I feel like I am moving forward	.585	.700	.518	.693
Q12_30 I am making progress	.553	.705	.532	.706
Q12_31 My life is getting better	.518	.644	.462	.623
Q12_33 I am moving towards the things I value	.577	.666	.477	.699
Q12_34 My life has a sense of direction and meaning to it	.547	.633	.464	.602
Q12_35 I lead a purposeful and interesting life	.600	.627	.511	.646
Q12_37 I make good use of my strengths, (talents,abilities and interests	.571	.609	.413	.599
Q12_39 I am engaged and interested in my daily activities	.561	.527	.447	.592
Q12_40 I am continually learning and growing	.703	.700	.517	.715
Q12_71 I've been pretty successful in life	.498	.518	.333	.563
Q12_73 I am meeting the goals I set for myself	.580	.596	.432	.618
Q12_75 I take pride in my achievements	.528	.580	.433	.559
Q12_76 I derive a sense of accomplishment from my activities	.569	.556	.429	.609
Q12_77 I am successfully meeting my needs, goals and expectations	.590	.640	.483	.654
Q12_78 I have responded successfully to the demands and opportunities of life	.542	.562	.428	.624
Q12_79 I am mastering the things that are important to me	.582	.635	.478	.644
Q12_80 I am doing more than just surviving - I am thriving	.524	.643	.448	.625
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.533	.642	.427	.605
Q12_84 I feel proud of what I have done in life	.526	.585	.444	.612
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.489	.397	.219	.415

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Inter-Item Correlation Matrix

	Q12_28 I feel like I am moving forward	Q12_30 I am making progress	Q12_31 My life is getting better	Q12_33 I am moving towards the things I value
Q12_23 I am always learning something new or useful	.585	.553	.518	.577
Q12_25 I am developing a lot as a person	.700	.705	.644	.666
Q12_26 I am not growing as a person	.518	.532	.462	.477
Q12_27 My understanding and effectiveness is always growing	.693	.706	.623	.699
Q12_28 I feel like I am moving forward	1.000	.779	.747	.760
Q12_30 I am making progress	.779	1.000	.695	.717
Q12_31 My life is getting better	.747	.695	1.000	.656
Q12_33 I am moving towards the things I value	.760	.717	.656	1.000
Q12_34 My life has a sense of direction and meaning to it	.726	.668	.622	.680
Q12_35 I lead a purposeful and interesting life	.729	.659	.619	.688
Q12_37 I make good use of my strengths, (talents,abilities and interests	.612	.579	.530	.615
Q12_39 I am engaged and interested in my daily activities	.607	.535	.532	.568
Q12_40 I am continually learning and growing	.661	.679	.612	.664
Q12_71 I've been pretty successful in life	.625	.579	.524	.596
Q12_73 I am meeting the goals I set for myself	.721	.658	.627	.673
Q12_75 I take pride in my achievements	.592	.585	.524	.608
Q12_76 I derive a sense of accomplishment from my activities	.647	.598	.597	.622
Q12_77 I am successfully meeting my needs, goals and expectations	.777	.687	.673	.687
Q12_78 I have responded successfully to the demands and opportunities of life	.631	.587	.529	.603
Q12_79 I am mastering the things that are important to me	.698	.678	.608	.696
Q12_80 I am doing more than just surviving - I am thriving	.721	.643	.622	.649
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.726	.663	.658	.666
Q12_84 I feel proud of what I have done in life	.621	.609	.528	.583
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.418	.410	.401	.445

Inter-Item Correlation Matrix

	Q12_34 My life has a sense of direction and meaning to it	Q12_35 I lead a purposeful and interesting life	Q12_37 I make good use of my strengths, (talents,abilities and interests	Q12_39 I am engaged and interested in my daily activities
Q12_23 I am always learning something new or useful	.547	.600	.571	.561
Q12_25 I am developing a lot as a person	.633	.627	.609	.527
Q12_26 I am not growing as a person	.464	.511	.413	.447
Q12_27 My understanding and effectiveness is always growing	.602	.646	.599	.592
Q12_28 I feel like I am moving forward	.726	.729	.612	.607

Q12_30 I am making progress	.668	.659	.579	.535
Q12_31 My life is getting better	.622	.619	.530	.532
Q12_33 I am moving towards the things I value	.680	.688	.615	.568
Q12_34 My life has a sense of direction and meaning to it	1.000	.726	.603	.606
Q12_35 I lead a purposeful and interesting life	.726	1.000	.653	.675
Q12_37 I make good use of my strengths, (talents,abilities and interests	.603	.653	1.000	.606
Q12_39 I am engaged and interested in my daily activities	.606	.675	.606	1.000
Q12_40 I am continually learning and growing	.606	.636	.576	.521
Q12_71 I've been pretty successful in life	.634	.628	.574	.505
Q12_73 I am meeting the goals I set for myself	.731	.714	.655	.625
Q12_75 I take pride in my achievements	.599	.605	.633	.531
Q12_76 I derive a sense of accomplishment from my activities	.612	.647	.654	.626
Q12_77 I am successfully meeting my needs, goals and expectations	.750	.756	.682	.666
Q12_78 I have responded successfully to the demands and opportunities of life	.606	.677	.624	.592
Q12_79 I am mastering the things that are important to me	.686	.700	.656	.621
Q12_80 I am doing more than just surviving - I am thriving	.704	.738	.603	.623
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.704	.712	.625	.604
Q12_84 I feel proud of what I have done in life	.617	.647	.628	.548
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.396	.470	.465	.475

Inter-Item Correlation Matrix

	Q12_40 I am continually learning and growing	Q12_71 I've been pretty successful in life	Q12_73 I am meeting the goals I set for myself	Q12_75 I take pride in my achievements
Q12_23 I am always learning something new or useful	.703	.498	.580	.528
Q12_25 I am developing a lot as a person	.700	.518	.596	.580
Q12_26 I am not growing as a person	.517	.333	.432	.433
Q12_27 My understanding and effectiveness is always growing	.715	.563	.618	.559
Q12_28 I feel like I am moving forward	.661	.625	.721	.592
Q12_30 I am making progress	.679	.579	.658	.585
Q12_31 My life is getting better	.612	.524	.627	.524
Q12_33 I am moving towards the things I value	.664	.596	.673	.608
Q12_34 My life has a sense of direction and meaning to it	.606	.634	.731	.599
Q12_35 I lead a purposeful and interesting life	.636	.628	.714	.605
Q12_37 I make good use of my strengths, (talents,abilities and interests	.576	.574	.655	.633
Q12_39 I am engaged and interested in my daily activities	.521	.505	.625	.531
Q12_40 I am continually learning and growing	1.000	.551	.569	.561
Q12_71 I've been pretty successful in life	.551	1.000	.658	.605
Q12_73 I am meeting the goals I set for myself	.569	.658	1.000	.627

Q12_75 I take pride in my achievements	.561	.605	.627	1.000
Q12_76 I derive a sense of accomplishment from my activities	.579	.599	.670	.682
Q12_77 I am successfully meeting my needs, goals and expectations	.607	.664	.776	.664
Q12_78 I have responded successfully to the demands and opportunities of life	.556	.691	.649	.609
Q12_79 I am mastering the things that are important to me	.608	.628	.727	.654
Q12_80 I am doing more than just surviving - I am thriving	.543	.584	.662	.556
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.555	.574	.710	.557
Q12_84 I feel proud of what I have done in life	.590	.716	.645	.699
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.442	.447	.468	.409

Inter-Item Correlation Matrix

	Q12_76 I derive a sense of accomplishment from my activities	Q12_77 I am successfully meeting my needs, goals and expectations	Q12_78 I have responded successfully to the demands and opportunities of life	Q12_79 I am mastering the things that are important to me
Q12_23 I am always learning something new or useful	.569	.590	.542	.582
Q12_25 I am developing a lot as a person	.556	.640	.562	.635
Q12_26 I am not growing as a person	.429	.483	.428	.478
Q12_27 My understanding and effectiveness is always growing	.609	.654	.624	.644
Q12_28 I feel like I am moving forward	.647	.777	.631	.698
Q12_30 I am making progress	.598	.687	.587	.678
Q12_31 My life is getting better	.597	.673	.529	.608
Q12_33 I am moving towards the things I value	.622	.687	.603	.696
Q12_34 My life has a sense of direction and meaning to it	.612	.750	.606	.686
Q12_35 I lead a purposeful and interesting life	.647	.756	.677	.700
Q12_37 I make good use of my strengths, (talents, abilities and interests	.654	.682	.624	.656
Q12_39 I am engaged and interested in my daily activities	.626	.666	.592	.621
Q12_40 I am continually learning and growing	.579	.607	.556	.608
Q12_71 I've been pretty successful in life	.599	.664	.691	.628
Q12_73 I am meeting the goals I set for myself	.670	.776	.649	.727
Q12_75 I take pride in my achievements	.682	.664	.609	.654
Q12_76 I derive a sense of accomplishment from my activities	1.000	.714	.607	.641
Q12_77 I am successfully meeting my needs, goals and expectations	.714	1.000	.670	.742
Q12_78 I have responded successfully to the demands and opportunities of life	.607	.670	1.000	.676
Q12_79 I am mastering the things that are important to me	.641	.742	.676	1.000
Q12_80 I am doing more than just surviving - I am thriving	.588	.737	.618	.674

Q12_82 I am realising my dreams and satisfying my deepest yearnings	.606	.724	.594	.691
Q12_84 I feel proud of what I have done in life	.653	.691	.711	.639
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.463	.464	.456	.438

Inter-Item Correlation Matrix

	Q12_80 I am doing more than just surviving - I am thriving	Q12_82 I am realising my dreams and satisfying my deepest yearnings	Q12_84 I feel proud of what I have done in life	Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing
Q12_23 I am always learning something new or useful	.524	.533	.526	.489
Q12_25 I am developing a lot as a person	.643	.642	.585	.397
Q12_26 I am not growing as a person	.448	.427	.444	.219
Q12_27 My understanding and effectiveness is always growing	.625	.605	.612	.415
Q12_28 I feel like I am moving forward	.721	.726	.621	.418
Q12_30 I am making progress	.643	.663	.609	.410
Q12_31 My life is getting better	.622	.658	.528	.401
Q12_33 I am moving towards the things I value	.649	.666	.583	.445
Q12_34 My life has a sense of direction and meaning to it	.704	.704	.617	.396
Q12_35 I lead a purposeful and interesting life	.738	.712	.647	.470
Q12_37 I make good use of my strengths, (talents,abilities and interests	.603	.625	.628	.465
Q12_39 I am engaged and interested in my daily activities	.623	.604	.548	.475
Q12_40 I am continually learning and growing	.543	.555	.590	.442
Q12_71 I've been pretty successful in life	.584	.574	.716	.447
Q12_73 I am meeting the goals I set for myself	.662	.710	.645	.468
Q12_75 I take pride in my achievements	.556	.557	.699	.409
Q12_76 I derive a sense of accomplishment from my activities	.588	.606	.653	.463
Q12_77 I am successfully meeting my needs, goals and expectations	.737	.724	.691	.464
Q12_78 I have responded successfully to the demands and opportunities of life	.618	.594	.711	.456
Q12_79 I am mastering the things that are important to me	.674	.691	.639	.438
Q12_80 I am doing more than just surviving - I am thriving	1.000	.704	.621	.445
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.704	1.000	.609	.455
Q12_84 I feel proud of what I have done in life	.621	.609	1.000	.446
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.445	.455	.446	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_23 I am always learning something new or useful	157.2575	1977.997	.707
Q12_25 I am developing a lot as a person	157.4983	1963.229	.774
Q12_26 I am not growing as a person	156.2324	2008.815	.567
Q12_27 My understanding and effectiveness is always growing	157.3294	1972.617	.788
Q12_28 I feel like I am moving forward	157.6221	1936.460	.850
Q12_30 I am making progress	157.3261	1960.756	.804
Q12_31 My life is getting better	157.6271	1964.110	.750
Q12_33 I am moving towards the things I value	157.2107	1962.991	.809
Q12_34 My life has a sense of direction and meaning to it	157.4983	1938.518	.806
Q12_35 I lead a purposeful and interesting life	157.5518	1945.219	.837
Q12_37 I make good use of my strengths, (talents,abilities and interests	157.6204	1971.861	.760
Q12_39 I am engaged and interested in my daily activities	157.5619	1972.789	.729
Q12_40 I am continually learning and growing	156.9448	1967.670	.759
Q12_71 I've been pretty successful in life	157.6054	1975.944	.733
Q12_73 I am meeting the goals I set for myself	158.0886	1954.841	.821
Q12_75 I take pride in my achievements	156.8528	1982.209	.738
Q12_76 I derive a sense of accomplishment from my activities	157.2258	1971.569	.772
Q12_77 I am successfully meeting my needs, goals and expectations	158.0268	1945.014	.862
Q12_78 I have responded successfully to the demands and opportunities of life	157.5552	1971.909	.765
Q12_79 I am mastering the things that are important to me	157.6940	1954.575	.821
Q12_80 I am doing more than just surviving - I am thriving	158.2625	1936.057	.792
Q12_82 I am realising my dreams and satisfying my deepest yearnings	158.7860	1938.648	.796
Q12_84 I feel proud of what I have done in life	157.1672	1965.865	.771
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	157.8010	2005.439	.542

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_23 I am always learning something new or useful	.592	.972
Q12_25 I am developing a lot as a person	.675	.972
Q12_26 I am not growing as a person	.401	.973
Q12_27 My understanding and effectiveness is always growing	.688	.972
Q12_28 I feel like I am moving forward	.786	.971
Q12_30 I am making progress	.715	.972
Q12_31 My life is getting better	.634	.972
Q12_33 I am moving towards the things I value	.694	.971
Q12_34 My life has a sense of direction and meaning to it	.697	.971
Q12_35 I lead a purposeful and interesting life	.731	.971
Q12_37 I make good use of my strengths, (talents,abilities and interests	.614	.972
Q12_39 I am engaged and interested in my daily activities	.590	.972
Q12_40 I am continually learning and growing	.699	.972
Q12_71 I've been pretty successful in life	.642	.972
Q12_73 I am meeting the goals I set for myself	.719	.971
Q12_75 I take pride in my achievements	.629	.972
Q12_76 I derive a sense of accomplishment from my activities	.650	.972
Q12_77 I am successfully meeting my needs, goals and expectations	.781	.971

Q12_78 I have responded successfully to the demands and opportunities of life	.655	.972
Q12_79 I am mastering the things that are important to me	.697	.971
Q12_80 I am doing more than just surviving - I am thriving	.685	.972
Q12_82 I am realising my dreams and satisfying my deepest yearnings	.684	.972
Q12_84 I feel proud of what I have done in life	.696	.972
Q12_85 I often find myself completely immersed, engaged or absorbed in what I am doing	.370	.974

Scale: Revised Content

Item Statistics

	Mean	Std. Deviation	N
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	6.9114	2.71922	598
Q12_44 I like most aspects of my personality	7.0351	2.21774	598
Q12_49 I have a strong sense of self respect	7.0669	2.51072	598
Q12_50 I wish I could have more respect for myself	6.9515	3.00853	598
Q12_53 When I compare myself to others, I do not feel so good about myself	7.2023	2.73525	598
Q12_55 My belief in myself gets me through hard times	6.5385	2.66267	598

Inter-Item Correlation Matrix

	Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	Q12_44 I like most aspects of my personality	Q12_49 I have a strong sense of self respect
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	1.000	.408	.504
Q12_44 I like most aspects of my personality	.408	1.000	.621
Q12_49 I have a strong sense of self respect	.504	.621	1.000
Q12_50 I wish I could have more respect for myself	.531	.425	.555
Q12_53 When I compare myself to others, I do not feel so good about myself	.570	.473	.521
Q12_55 My belief in myself gets me through hard times	.483	.596	.585

Inter-Item Correlation Matrix

	Q12_50 I wish I could have more respect for myself	Q12_53 When I compare myself to others, I do not feel so good about myself	Q12_55 My belief in myself gets me through hard times
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.531	.570	.483
Q12_44 I like most aspects of my personality	.425	.473	.596
Q12_49 I have a strong sense of self respect	.555	.521	.585
Q12_50 I wish I could have more respect for myself	1.000	.533	.451
Q12_53 When I compare myself to others, I do not feel so good about myself	.533	1.000	.483
Q12_55 My belief in myself gets me through hard times	.451	.483	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	34.7943	106.596	.641
Q12_44 I like most aspects of my personality	34.6706	114.761	.637
Q12_49 I have a strong sense of self respect	34.6388	106.489	.717
Q12_50 I wish I could have more respect for myself	34.7542	102.169	.637
Q12_53 When I compare myself to others, I do not feel so good about myself	34.5033	105.299	.662
Q12_55 My belief in myself gets me through hard times	35.1672	106.753	.656

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_41 My attitude to myself is probably not as positive as most people feel about themselves	.435	.841
Q12_44 I like most aspects of my personality	.479	.843
Q12_49 I have a strong sense of self respect	.541	.828
Q12_50 I wish I could have more respect for myself	.428	.844
Q12_53 When I compare myself to others, I do not feel so good about myself	.452	.837
Q12_55 My belief in myself gets me through hard times	.471	.838

Scale: Revised Connect

Item Statistics

	Mean	Std. Deviation	N
Q12_56 I get on well with the important people in my life	8.11	2.016	598
Q12_58 My social relationships are close, supportive and rewarding	7.00	2.502	598
Q12_59 I feel appreciated and valued	6.96	2.399	598
Q12_60 I feel understood and accepted	6.74	2.418	598
Q12_62 I have good friends I can count on	7.60	2.497	598
Q12_63 I have a good family life	8.06	2.455	598
Q12_64 I feel loved	8.07	2.326	598
Q12_67 I feel like I belong	6.68	2.660	598
Q12_68 I feel respected	7.16	2.294	598

Inter-Item Correlation Matrix

	Q12_56 I get on well with the important people in my life	Q12_58 My social relationships are close, supportive and rewarding	Q12_59 I feel appreciated and valued
Q12_56 I get on well with the important people in my life	1.000	.561	.582
Q12_58 My social relationships are close, supportive and rewarding	.561	1.000	.684
Q12_59 I feel appreciated and valued	.582	.684	1.000
Q12_60 I feel understood and accepted	.551	.642	.714
Q12_62 I have good friends I can count on	.482	.726	.604
Q12_63 I have a good family life	.554	.515	.534

	.601	.616	.686
Q12_64 I feel loved	.601	.616	.686
Q12_67 I feel like I belong	.531	.591	.663
Q12_68 I feel respected	.565	.591	.740

Inter-Item Correlation Matrix

	Q12_60 I feel understood and accepted	Q12_62 I have good friends I can count on	Q12_63 I have a good family life
Q12_56 I get on well with the important people in my life	.551	.482	.554
Q12_58 My social relationships are close, supportive and rewarding	.642	.726	.515
Q12_59 I feel appreciated and valued	.714	.604	.534
Q12_60 I feel understood and accepted	1.000	.580	.480
Q12_62 I have good friends I can count on	.580	1.000	.378
Q12_63 I have a good family life	.480	.378	1.000
Q12_64 I feel loved	.587	.490	.591
Q12_67 I feel like I belong	.668	.511	.501
Q12_68 I feel respected	.686	.554	.443

Inter-Item Correlation Matrix

	Q12_64 I feel loved	Q12_67 I feel like I belong	Q12_68 I feel respected
Q12_56 I get on well with the important people in my life	.601	.531	.565
Q12_58 My social relationships are close, supportive and rewarding	.616	.591	.591
Q12_59 I feel appreciated and valued	.686	.663	.740
Q12_60 I feel understood and accepted	.587	.668	.686
Q12_62 I have good friends I can count on	.490	.511	.554
Q12_63 I have a good family life	.591	.501	.443
Q12_64 I feel loved	1.000	.624	.595
Q12_67 I feel like I belong	.624	1.000	.632
Q12_68 I feel respected	.595	.632	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
Q12_56 I get on well with the important people in my life	58.28	246.214	.688
Q12_58 My social relationships are close, supportive and rewarding	59.38	228.689	.778
Q12_59 I feel appreciated and valued	59.42	228.141	.827
Q12_60 I feel understood and accepted	59.65	231.021	.775
Q12_62 I have good friends I can count on	58.79	235.968	.673
Q12_63 I have a good family life	58.33	241.065	.613
Q12_64 I feel loved	58.32	234.826	.752
Q12_67 I feel like I belong	59.71	227.356	.740
Q12_68 I feel respected	59.22	235.390	.755

Item-Total Statistics

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q12_56 I get on well with the important people in my life	.495	.921
Q12_58 My social relationships are close, supportive and rewarding	.665	.915
Q12_59 I feel appreciated and valued	.709	.912
Q12_60 I feel understood and accepted	.630	.915
Q12_62 I have good friends I can count on	.565	.922
Q12_63 I have a good family life	.440	.925
Q12_64 I feel loved	.598	.916
Q12_67 I feel like I belong	.570	.917

Q12_68 I feel respected		.626	.916

Appendix M: Regressions with Influential Cases Included

Correlations

Correlations

		PosAffTotal	NegAffTotal	SWLSTotal	PhysicalTotal
PosAffTotal	Pearson Correlation	1	-.710**	.699**	.503**
	Sig. (2-tailed)		.000	.000	.000
	N	598	598	598	598
NegAffTotal	Pearson Correlation	-.710**	1	-.552**	-.447**
	Sig. (2-tailed)	.000		.000	.000
	N	598	598	598	598
SWLSTotal	Pearson Correlation	.699**	-.552**	1	.448**
	Sig. (2-tailed)	.000	.000		.000
	N	598	598	598	598
PhysicalTotal	Pearson Correlation	.503**	-.447**	.448**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	598	598	598	598
SecurityTotal	Pearson Correlation	.509**	-.525**	.566**	.464**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
AchGrTotal	Pearson Correlation	.730**	-.567**	.719**	.514**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
ContentTotal	Pearson Correlation	.669**	-.619**	.607**	.523**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
ConnectTotal	Pearson Correlation	.715**	-.575**	.726**	.490**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598

Correlations

		SecurityTotal	AchGrTotal	ContentTotal	ConnectTotal
PosAffTotal	Pearson Correlation	.509	.730**	.669**	.715**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
NegAffTotal	Pearson Correlation	-.525**	-.567	-.619**	-.575**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
SWLSTotal	Pearson Correlation	.566**	.719**	.607	.726**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
PhysicalTotal	Pearson Correlation	.464**	.514**	.523**	.490
	Sig. (2-tailed)	.000	.000	.000	.000
	N	598	598	598	598
SecurityTotal	Pearson Correlation	1**	.466**	.489**	.539**
	Sig. (2-tailed)		.000	.000	.000
	N	598	598	598	598
AchGrTotal	Pearson Correlation	.466**	1**	.734**	.795**
	Sig. (2-tailed)	.000		.000	.000
	N	598	598	598	598
ContentTotal	Pearson Correlation	.489**	.734**	1**	.685**
	Sig. (2-tailed)	.000	.000		.000
	N	598	598	598	598
ConnectTotal	Pearson Correlation	.539**	.795**	.685**	1**
	Sig. (2-tailed)	.000	.000	.000	
	N	598	598	598	598

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786[a]	.618	.615	3.10839

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: PosAffTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9249.968	5	1849.994	191.469	.000[b]
	Residual	5719.972	592	9.662		
	Total	14969.940	597			

a. Dependent Variable: PosAffTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.266	.722		5.908	.000
	PhysicalTotal	.026	.011	.079	2.492	.013
	SecurityTotal	.049	.015	.105	3.317	.001
	AchGrTotal	.033	.005	.309	6.598	.000
	ContentTotal	.072	.016	.177	4.425	.000
	ConnectTotal	.074	.013	.254	5.646	.000

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations			Collinearity Statistics
		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1	(Constant)	2.848	5.684				
	PhysicalTotal	.006	.047	.503	.102	.063	.646
	SecurityTotal	.020	.078	.509	.135	.084	.645
	AchGrTotal	.023	.043	.730	.262	.168	.295
	ContentTotal	.040	.104	.669	.179	.112	.405
	ConnectTotal	.048	.100	.715	.226	.143	.320

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	PhysicalTotal	1.548
	SecurityTotal	1.549
	AchGrTotal	3.393
	ContentTotal	2.468
	ConnectTotal	3.128

a. Dependent Variable: PosAffTotal

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N

Predicted Value	7.9334	28.7328	21.9900	3.93625	598
Std. Predicted Value	-3.571	1.713	.000	1.000	598
Standard Error of Predicted Value	.154	.884	.296	.098	598
Adjusted Predicted Value	7.9945	28.7239	21.9893	3.93519	598
Residual	-11.72191	8.94931	.00000	3.09535	598
Std. Residual	-3.771	2.879	.000	.996	598
Stud. Residual	-3.783	2.894	.000	1.002	598
Deleted Residual	-11.79668	9.04256	.00070	3.13487	598
Stud. Deleted Residual	-3.826	2.912	.000	1.005	598
Mahal. Distance	.463	47.334	4.992	4.535	598
Cook's Distance	.000	.088	.002	.006	598
Centered Leverage Value	.001	.079	.008	.008	598

a. Dependent Variable: PosAffTotal

Charts

Histogram

Dependent Variable: PosAffTotal

Mean = -2.92E-16
Std. Dev. = 0.996
N = 598

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PosAffTotal

Scatterplot

Dependent Variable: PosAffTotal
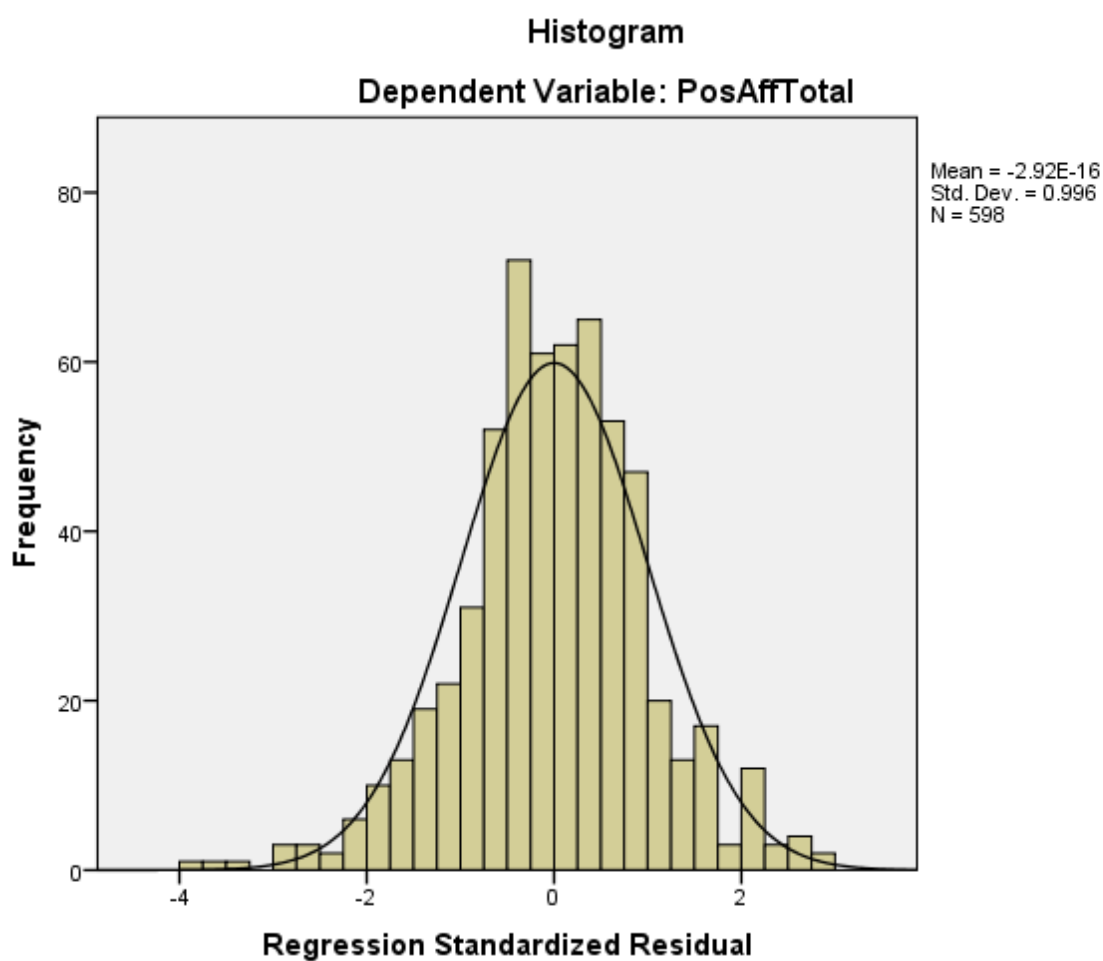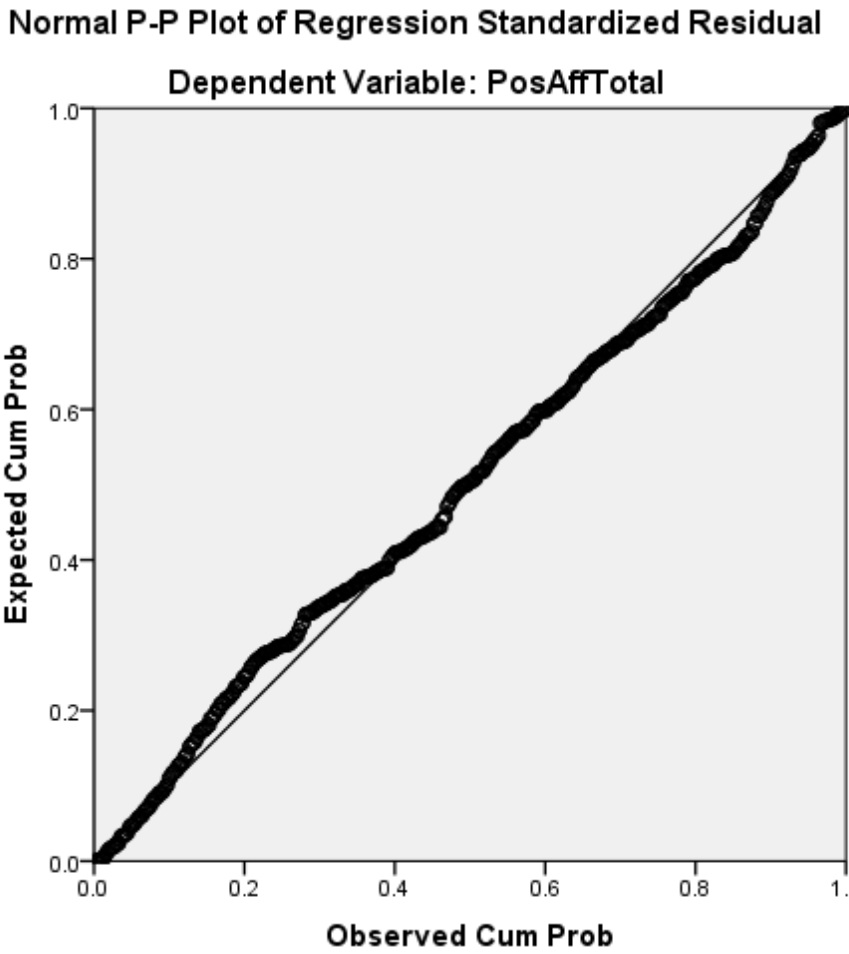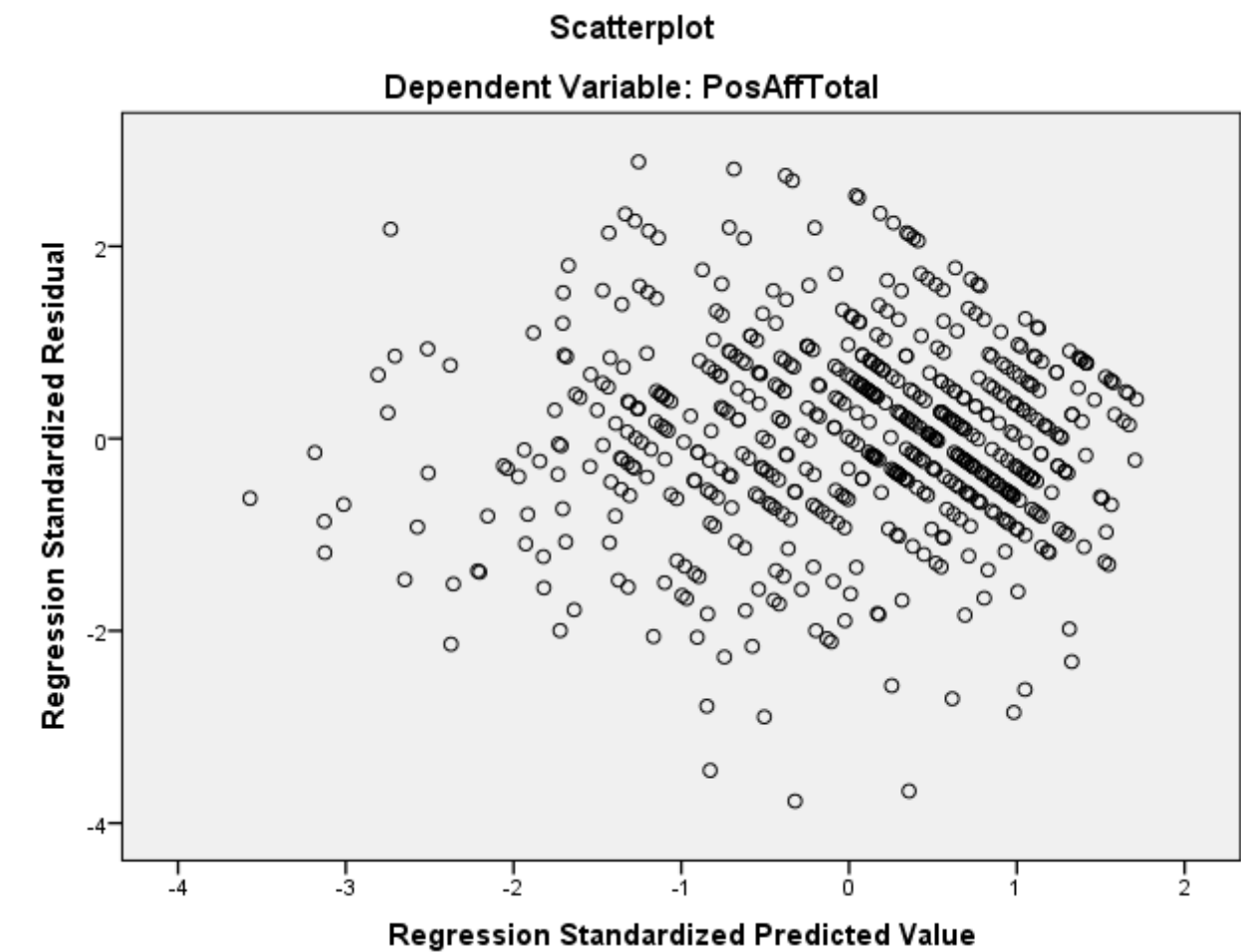
Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687[a]	.472	.468	3.49552

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: NegAffTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6465.414	5	1293.083	105.828	.000[b]
	Residual	7233.455	592	12.219		
	Total	13698.870	597			

a. Dependent Variable: NegAffTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	31.085	.812		38.280	.000
	PhysicalTotal	-.021	.012	-.065	-1.753	.080
	SecurityTotal	-.101	.017	-.226	-6.089	.000
	AchGrTotal	-.009	.006	-.090	-1.633	.103
	ContentTotal	-.124	.018	-.318	-6.773	.000
	ConnectTotal	-.037	.015	-.132	-2.508	.012

Coefficients^a

Model		95.0% Confidence Interval for B		Correlations			Collinearity Statistics
		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1	(Constant)	29.490	32.680				
	PhysicalTotal	-.044	.003	-.447	-.072	-.052	.646
	SecurityTotal	-.133	-.068	-.525	-.243	-.182	.645
	AchGrTotal	-.021	.002	-.567	-.067	-.049	.295
	ContentTotal	-.160	-.088	-.619	-.268	-.202	.405
	ConnectTotal	-.066	-.008	-.575	-.103	-.075	.320

Coefficients^a

Model		Collinearity Statistics
		VIF
1	(Constant)	
	PhysicalTotal	1.548
	SecurityTotal	1.549
	AchGrTotal	3.393
	ContentTotal	2.468
	ConnectTotal	3.128

a. Dependent Variable: NegAffTotal

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	9.4162	27.5482	14.9565	3.29087	598
Std. Predicted Value	-1.684	3.826	.000	1.000	598
Standard Error of Predicted Value	.173	.995	.332	.110	598
Adjusted Predicted Value	9.4121	27.4708	14.9557	3.29002	598
Residual	-11.20459	11.98852	.00000	3.48085	598
Std. Residual	-3.205	3.430	.000	.996	598
Stud. Residual	-3.224	3.438	.000	1.002	598
Deleted Residual	-11.33612	12.04788	.00084	3.52357	598
Stud. Deleted Residual	-3.250	3.470	.000	1.004	598
Mahal. Distance	.463	47.334	4.992	4.535	598
Cook's Distance	.000	.154	.002	.007	598
Centered Leverage Value	.001	.079	.008	.008	598

a. Dependent Variable: NegAffTotal

Charts

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: NegAffTotal

Scatterplot

Dependent Variable: NegAffTotal
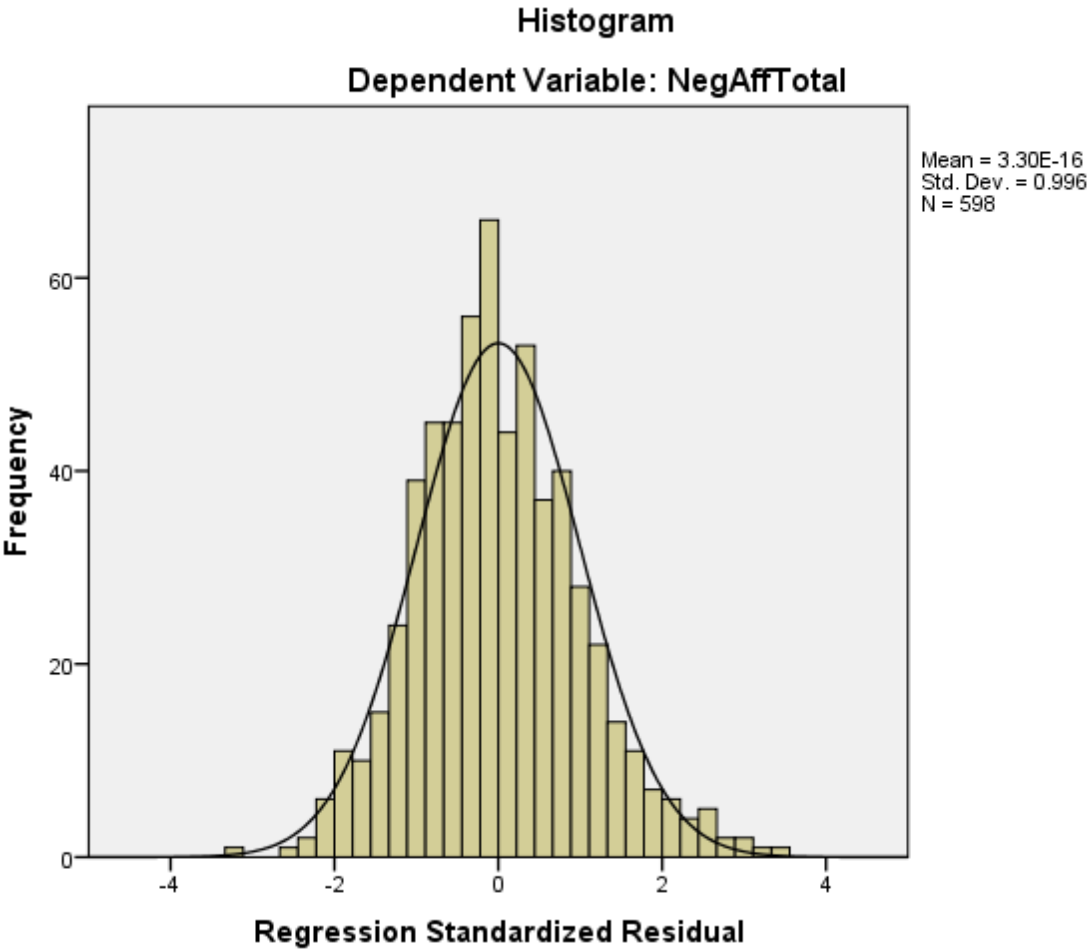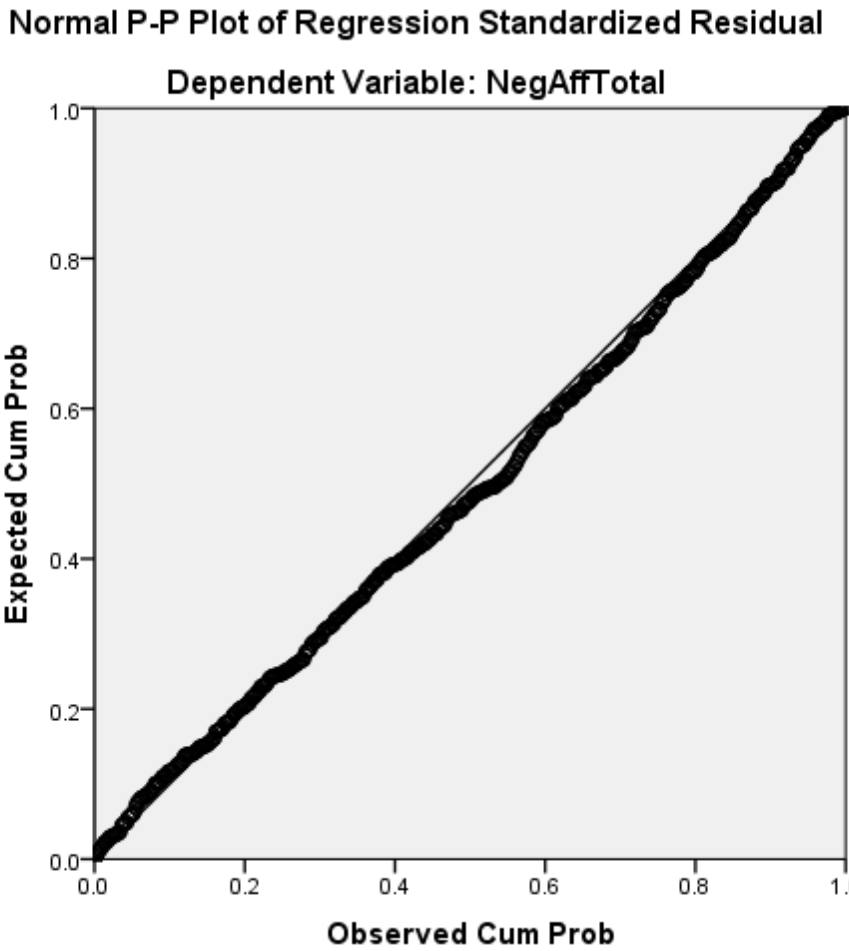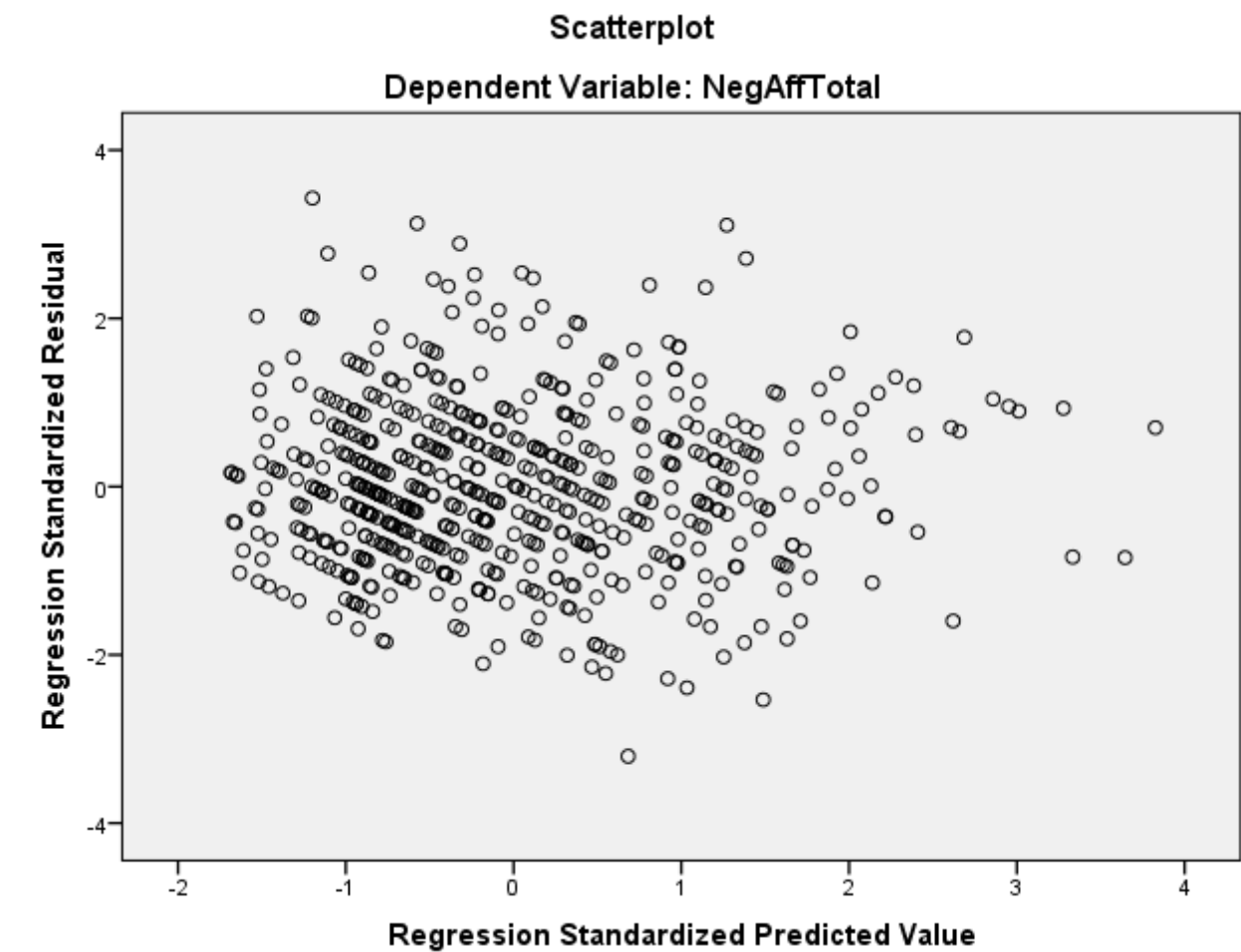
Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.787[a]	.619	.615	4.21407

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: SWLSTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17058.808	5	3411.762	192.121	.000[b]
	Residual	10512.973	592	17.758		
	Total	27571.781	597			

a. Dependent Variable: SWLSTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.

	B	Std. Error	Beta		
(Constant)	-.012	.979		-.012	.990
PhysicalTotal	-.001	.014	-.003	-.088	.930
SecurityTotal	.141	.020	.223	7.057	.000
1 AchGrTotal	.051	.007	.345	7.383	.000
ContentTotal	.019	.022	.034	.857	.392
ConnectTotal	.123	.018	.310	6.897	.000

Coefficients[a]

Model	95.0% Confidence Interval for B		Correlations			Collinearity Statistics
	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
(Constant)	-1.935	1.911				
PhysicalTotal	-.029	.027	.448	-.004	-.002	.646
SecurityTotal	.101	.180	.566	.279	.179	.645
1 AchGrTotal	.037	.064	.719	.290	.187	.295
ContentTotal	-.024	.062	.607	.035	.022	.405
ConnectTotal	.088	.158	.726	.273	.175	.320

Coefficients[a]

Model	Collinearity Statistics
	VIF
(Constant)	
PhysicalTotal	1.548
SecurityTotal	1.549
1 AchGrTotal	3.393
ContentTotal	2.468
ConnectTotal	3.128

a. Dependent Variable: SWLSTotal

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.0985	34.0995	25.2625	5.34549	598
Std. Predicted Value	-3.772	1.653	.000	1.000	598
Standard Error of Predicted Value	.208	1.199	.401	.133	598
Adjusted Predicted Value	5.1016	34.1186	25.2635	5.34231	598
Residual	-13.23612	18.44678	.00000	4.19639	598
Std. Residual	-3.141	4.377	.000	.996	598
Stud. Residual	-3.170	4.428	.000	1.002	598
Deleted Residual	-13.48213	18.87861	-.00096	4.25230	598
Stud. Deleted Residual	-3.195	4.500	.000	1.005	598
Mahal. Distance	.463	47.334	4.992	4.535	598
Cook's Distance	.000	.099	.002	.007	598
Centered Leverage Value	.001	.079	.008	.008	598

a. Dependent Variable: SWLSTotal

Charts

Histogram

Dependent Variable: SWLSTotal

Mean = -4.61E-16
Std. Dev. = 0.996
N = 598

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: SWLSTotal

Scatterplot

Dependent Variable: SWLSTotal
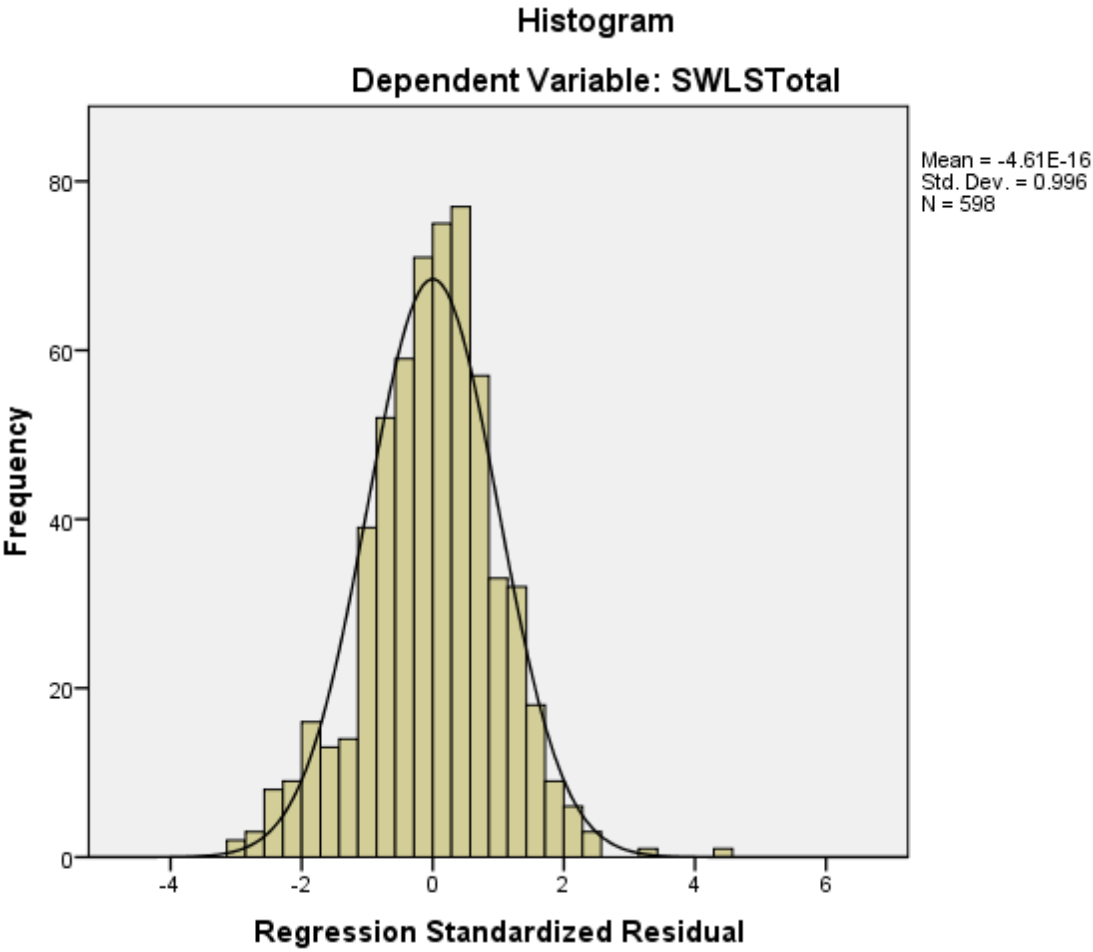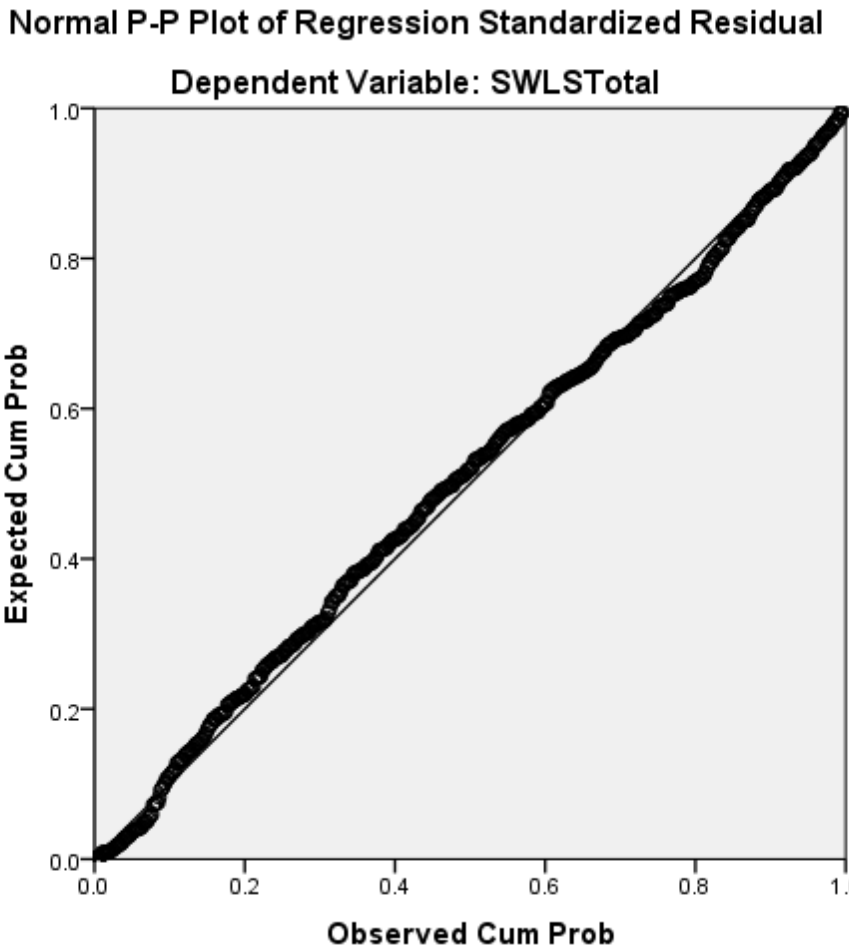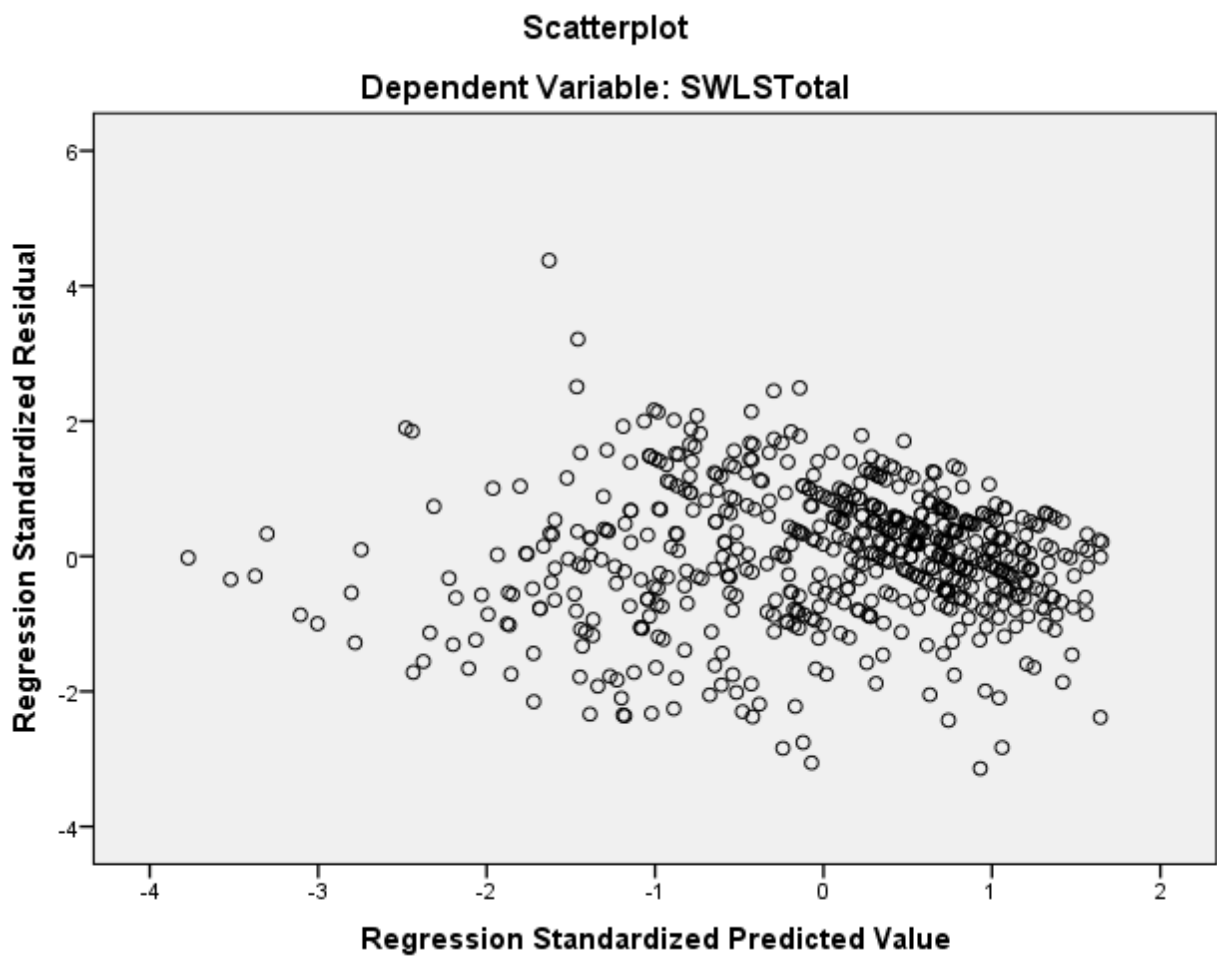
Appendix N: Regressions with Influential Cases Excluded

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834[a]	.695	.692	2.68845

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: PosAffTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9381.049	5	1876.210	259.584	.000[b]
	Residual	4119.824	570	7.228		
	Total	13500.873	575			

a. Dependent Variable: PosAffTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.766	.638		5.899	.000
	PhysicalTotal	.035	.009	.108	3.727	.000
	SecurityTotal	.051	.013	.112	3.836	.000
	AchGrTotal	.029	.005	.276	6.333	.000
	ContentTotal	.075	.015	.191	5.164	.000
	ConnectTotal	.082	.012	.293	7.068	.000

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations			Collinearity Statistics
		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1	(Constant)	2.512	5.020				
	PhysicalTotal	.017	.054	.559	.154	.086	.633
	SecurityTotal	.025	.077	.561	.159	.089	.628
	AchGrTotal	.020	.038	.766	.256	.147	.283
	ContentTotal	.047	.104	.714	.211	.119	.393
	ConnectTotal	.060	.105	.764	.284	.164	.311

Coefficients[a]

Model		Collinearity Statistics
		VIF
1	(Constant)	
	PhysicalTotal	1.579
	SecurityTotal	1.593
	AchGrTotal	3.538
	ContentTotal	2.543
	ConnectTotal	3.219

a. Dependent Variable: PosAffTotal

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	7.6387	28.8870	22.0608	4.03917	576
Std. Predicted Value	-3.571	1.690	.000	1.000	576
Standard Error of Predicted Value	.137	.583	.261	.085	576
Adjusted Predicted Value	7.6923	28.8791	22.0595	4.03877	576
Residual	-6.61664	7.28821	.00000	2.67674	576
Std. Residual	-2.461	2.711	.000	.996	576
Stud. Residual	-2.483	2.745	.000	1.002	576
Deleted Residual	-6.73313	7.47129	.00127	2.71020	576
Stud. Deleted Residual	-2.494	2.761	.000	1.004	576
Mahal. Distance	.484	26.031	4.991	4.268	576
Cook's Distance	.000	.034	.002	.004	576
Centered Leverage Value	.001	.045	.009	.007	576

a. Dependent Variable: PosAffTotal

Charts

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: PosAffTotal

Scatterplot

Dependent Variable: PosAffTotal
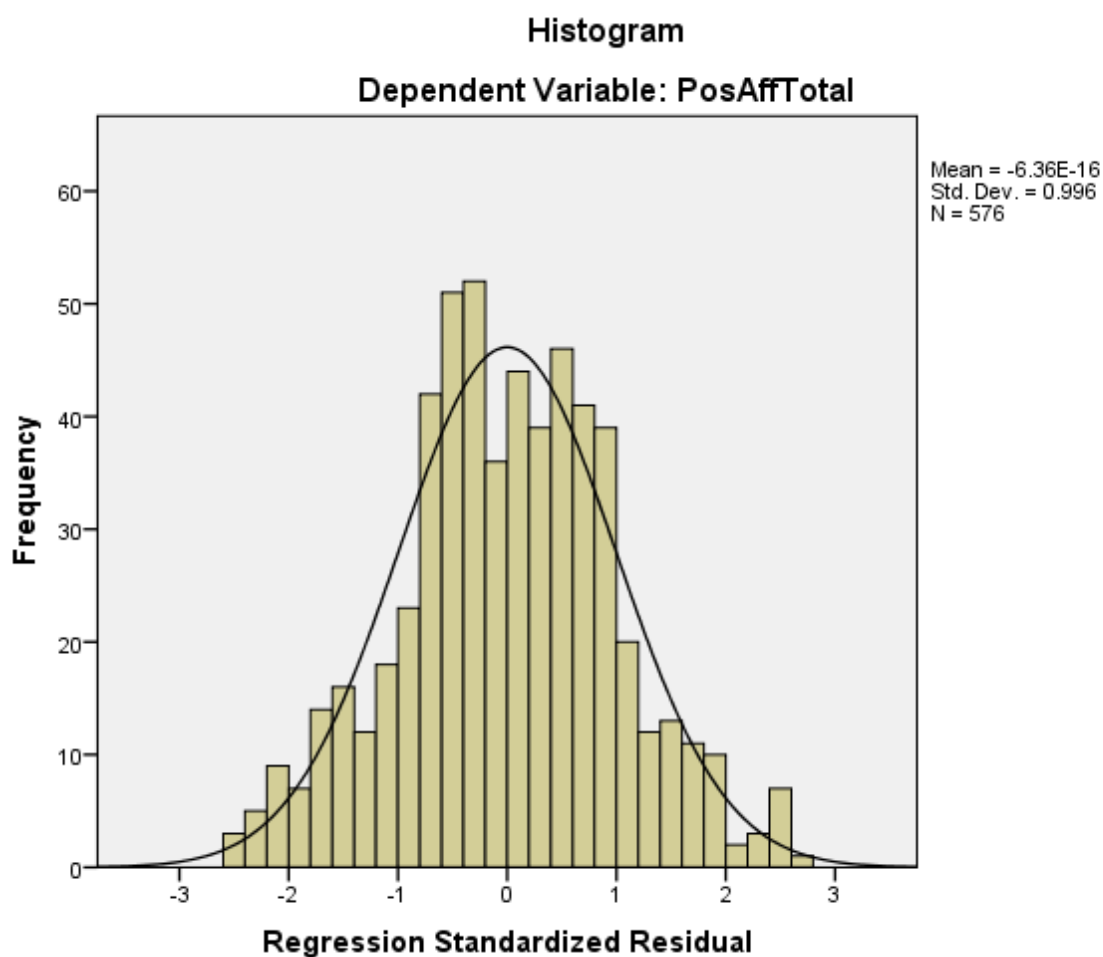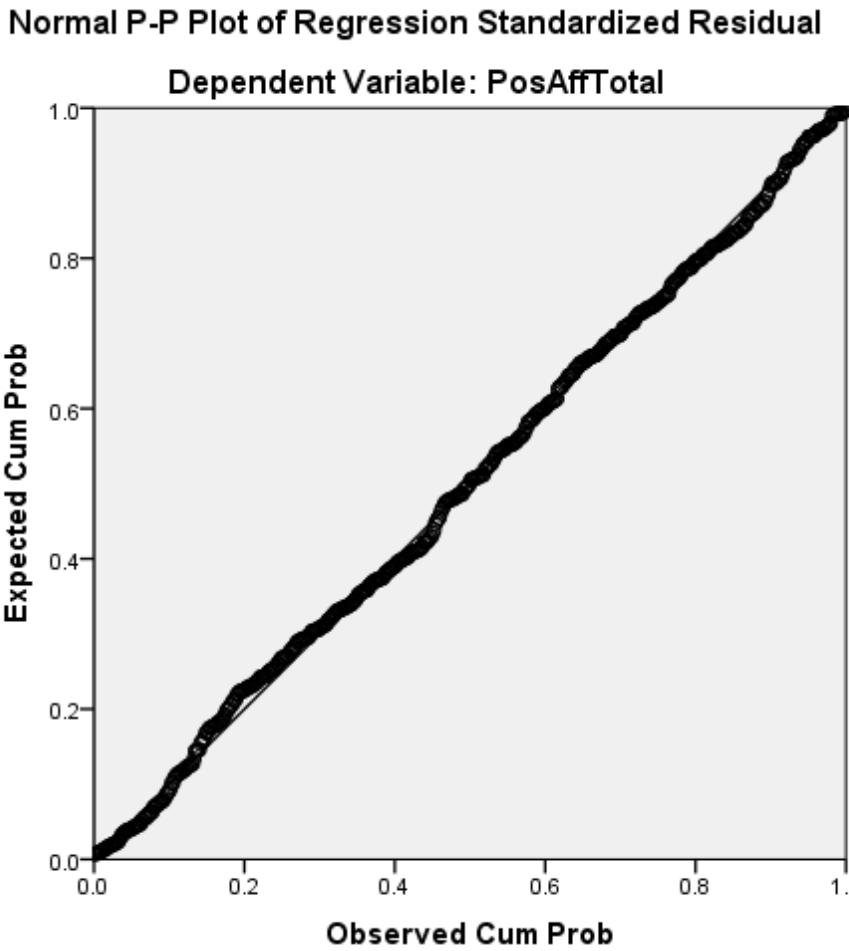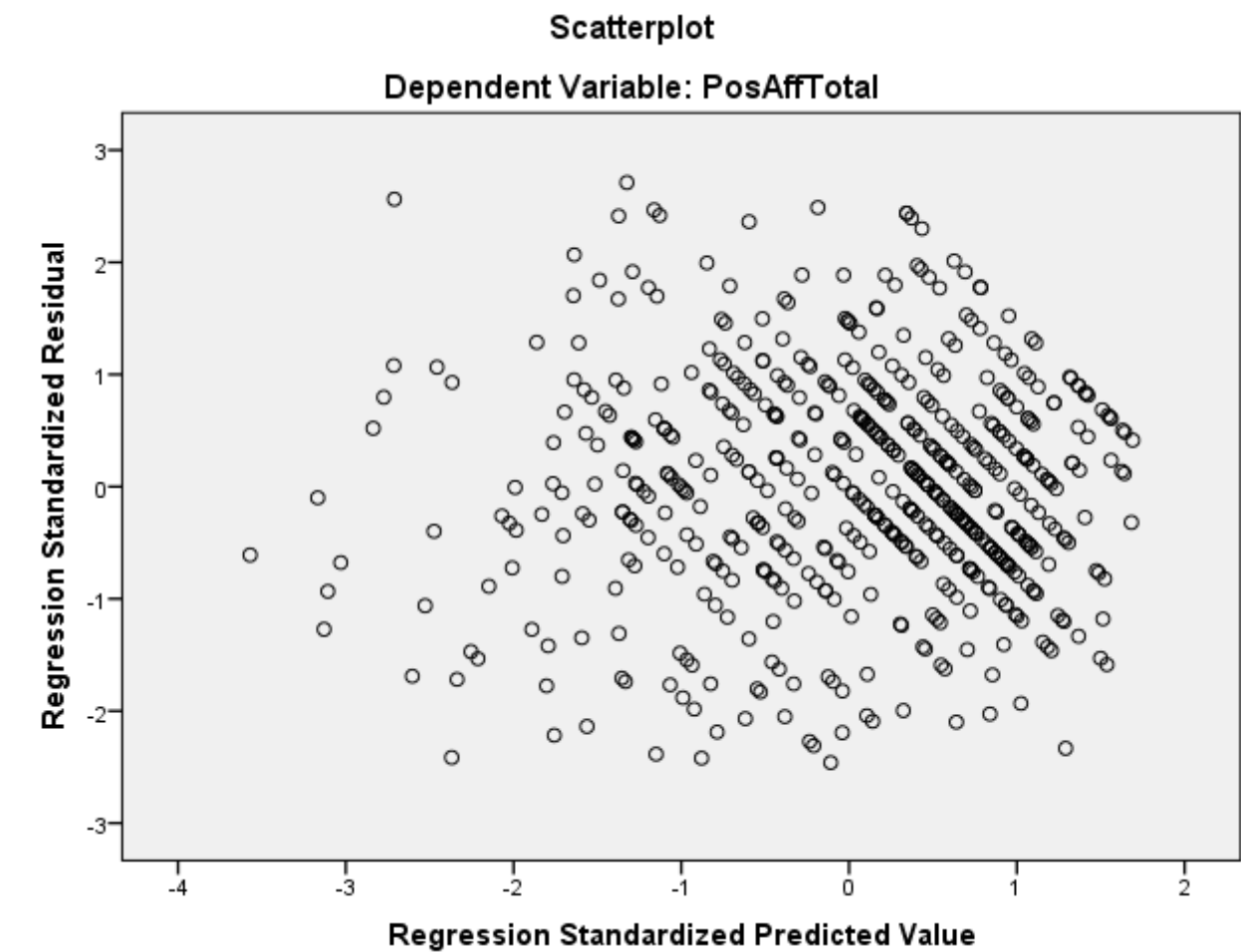
Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.738[a]	.545	.541	3.10962

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: NegAffTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6636.415	5	1327.283	137.262	.000[b]
	Residual	5540.760	573	9.670		
	Total	12177.174	578			

a. Dependent Variable: NegAffTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

	B	Std. Error	Beta		
(Constant)	30.899	.746		41.434	.000
PhysicalTotal	-.009	.011	-.029	-.829	.407
SecurityTotal	-.093	.015	-.214	-6.038	.000
1 AchGrTotal	-.012	.005	-.125	-2.340	.020
ContentTotal	-.127	.017	-.340	-7.512	.000
ConnectTotal	-.045	.013	-.167	-3.310	.001

Coefficients^a

Model	95.0% Confidence Interval for B		Correlations			Collinearity Statistics
	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
(Constant)	29.434	32.364				
PhysicalTotal	-.030	.012	-.458	-.035	-.023	.643
SecurityTotal	-.123	-.063	-.553	-.245	-.170	.634
1 AchGrTotal	-.023	-.002	-.633	-.097	-.066	.280
ContentTotal	-.160	-.094	-.672	-.299	-.212	.388
ConnectTotal	-.071	-.018	-.636	-.137	-.093	.311

Coefficients^a

Model	Collinearity Statistics
	VIF
(Constant)	
PhysicalTotal	1.556
SecurityTotal	1.577
1 AchGrTotal	3.572
ContentTotal	2.575
ConnectTotal	3.212

a. Dependent Variable: NegAffTotal

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	9.1079	27.6097	14.7547	3.38846	579
Std. Predicted Value	-1.666	3.794	.000	1.000	579
Standard Error of Predicted Value	.158	.669	.301	.098	579
Adjusted Predicted Value	9.1015	27.5305	14.7554	3.38885	579
Residual	-8.18375	7.66444	.00000	3.09614	579
Std. Residual	-2.632	2.465	.000	.996	579
Stud. Residual	-2.662	2.505	.000	1.001	579
Deleted Residual	-8.37299	7.91635	-.00062	3.13074	579
Stud. Deleted Residual	-2.676	2.517	.000	1.003	579
Mahal. Distance	.485	25.728	4.991	4.276	579
Cook's Distance	.000	.034	.002	.003	579
Centered Leverage Value	.001	.045	.009	.007	579

a. Dependent Variable: NegAffTotal

Charts

Histogram

Dependent Variable: NegAffTotal

Mean = 2.42E-16
Std. Dev. = 0.996
N = 579

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: NegAffTotal

Scatterplot
Dependent Variable: NegAffTotal
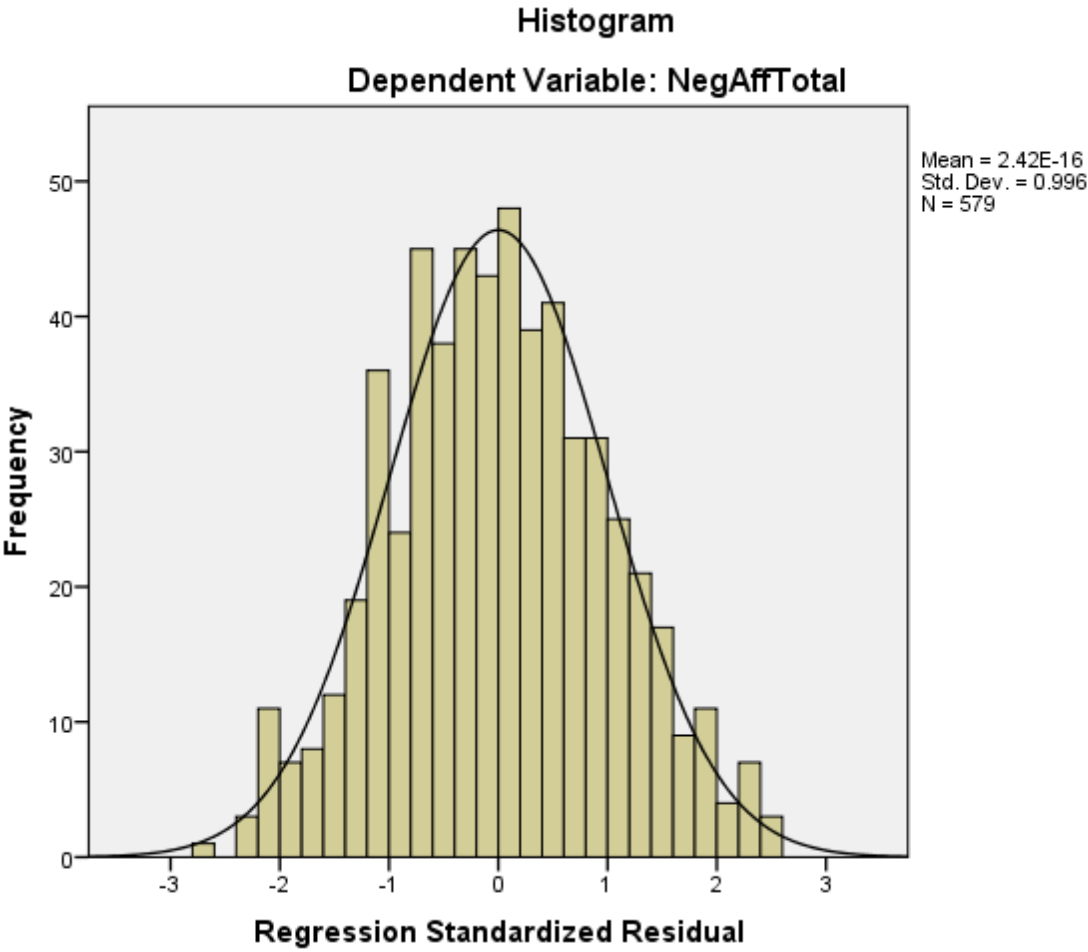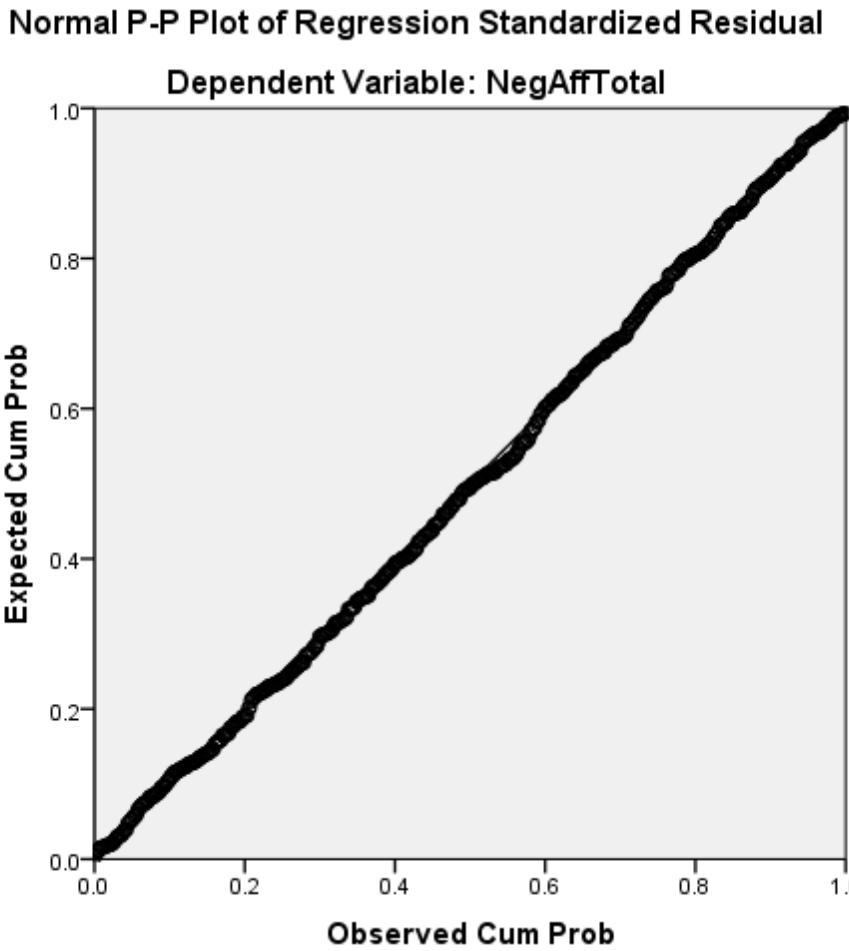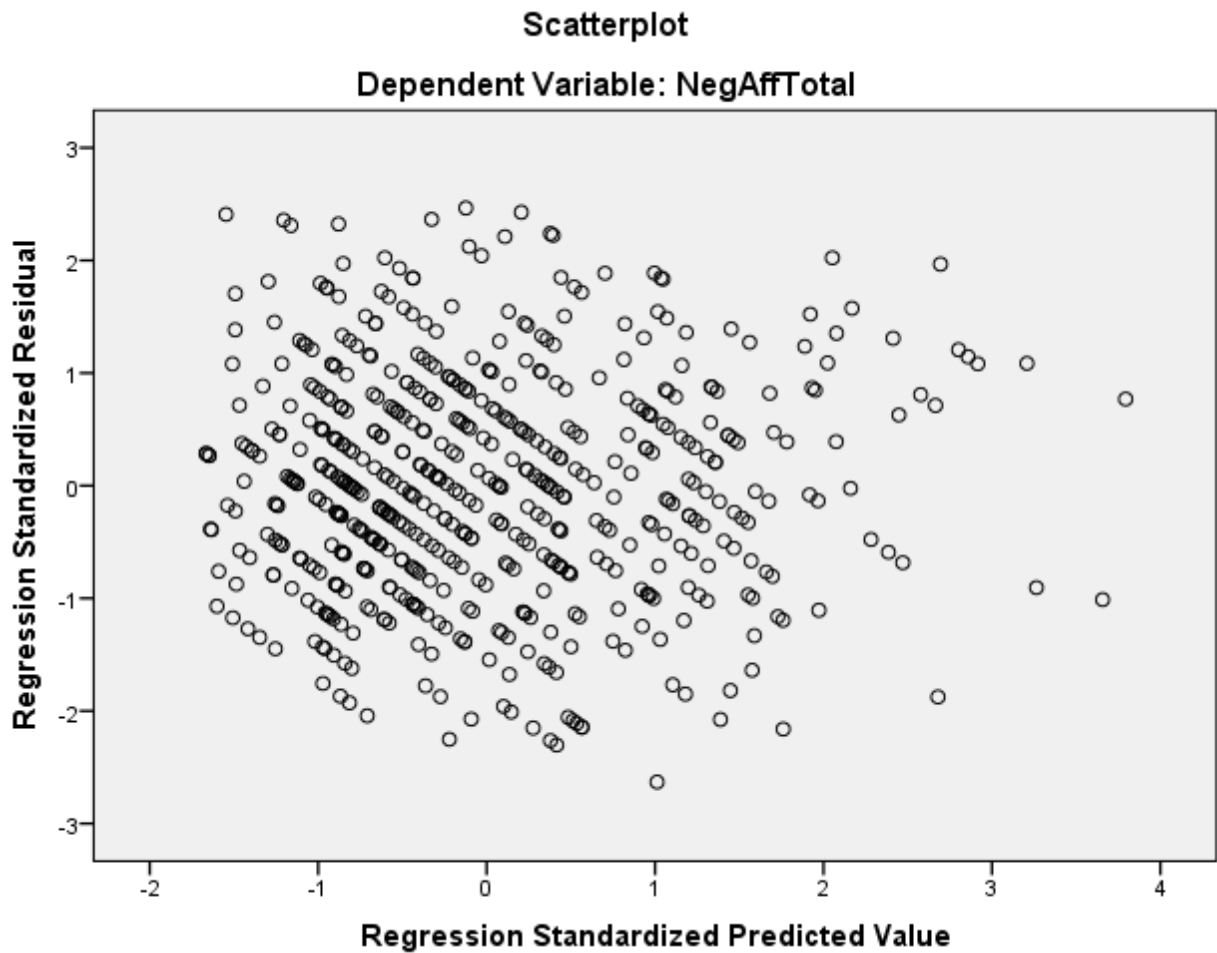
Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825[a]	.681	.678	3.76381

a. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal
b. Dependent Variable: SWLSTotal

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17328.361	5	3465.672	244.642	.000[b]
	Residual	8131.451	574	14.166		
	Total	25459.812	579			

a. Dependent Variable: SWLSTotal
b. Predictors: (Constant), ConnectTotal, PhysicalTotal, SecurityTotal, ContentTotal, AchGrTotal

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.981	.904		-1.086	.278
	PhysicalTotal	.001	.013	.002	.084	.933
	SecurityTotal	.159	.019	.253	8.530	.000
	AchGrTotal	.050	.006	.348	7.991	.000
	ContentTotal	.024	.021	.044	1.167	.244
	ConnectTotal	.119	.016	.308	7.368	.000

Coefficientsᵃ

Model		95.0% Confidence Interval for B		Correlations			Collinearity Statistics
		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1	(Constant)	-2.756	.794				
	PhysicalTotal	-.025	.027	.474	.004	.002	.642
	SecurityTotal	.122	.195	.617	.335	.201	.632
	AchGrTotal	.038	.062	.750	.316	.188	.293
	ContentTotal	-.017	.065	.647	.049	.028	.385
	ConnectTotal	.088	.151	.758	.294	.174	.318

Coefficientsᵃ

Model		Collinearity Statistics
		VIF
1	(Constant)	
	PhysicalTotal	1.558
	SecurityTotal	1.583
	AchGrTotal	3.412
	ContentTotal	2.594
	ConnectTotal	3.144

a. Dependent Variable: SWLSTotal

Residuals Statisticsᵃ

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.4607	34.4360	25.4259	5.47066	580
Std. Predicted Value	-3.832	1.647	.000	1.000	580
Standard Error of Predicted Value	.191	.810	.364	.117	580
Adjusted Predicted Value	4.4427	34.4320	25.4279	5.46668	580
Residual	-9.94159	9.23123	.00000	3.74753	580
Std. Residual	-2.641	2.453	.000	.996	580
Stud. Residual	-2.666	2.465	.000	1.002	580
Deleted Residual	-10.12813	9.32648	-.00199	3.79396	580
Stud. Deleted Residual	-2.680	2.476	.000	1.003	580
Mahal. Distance	.494	25.798	4.991	4.229	580
Cook's Distance	.000	.038	.002	.004	580
Centered Leverage Value	.001	.045	.009	.007	580

a. Dependent Variable: SWLSTotal

Charts

Histogram

Dependent Variable: SWLSTotal

Mean = -2.76E-16
Std. Dev. = 0.996
N = 580

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: SWLSTotal
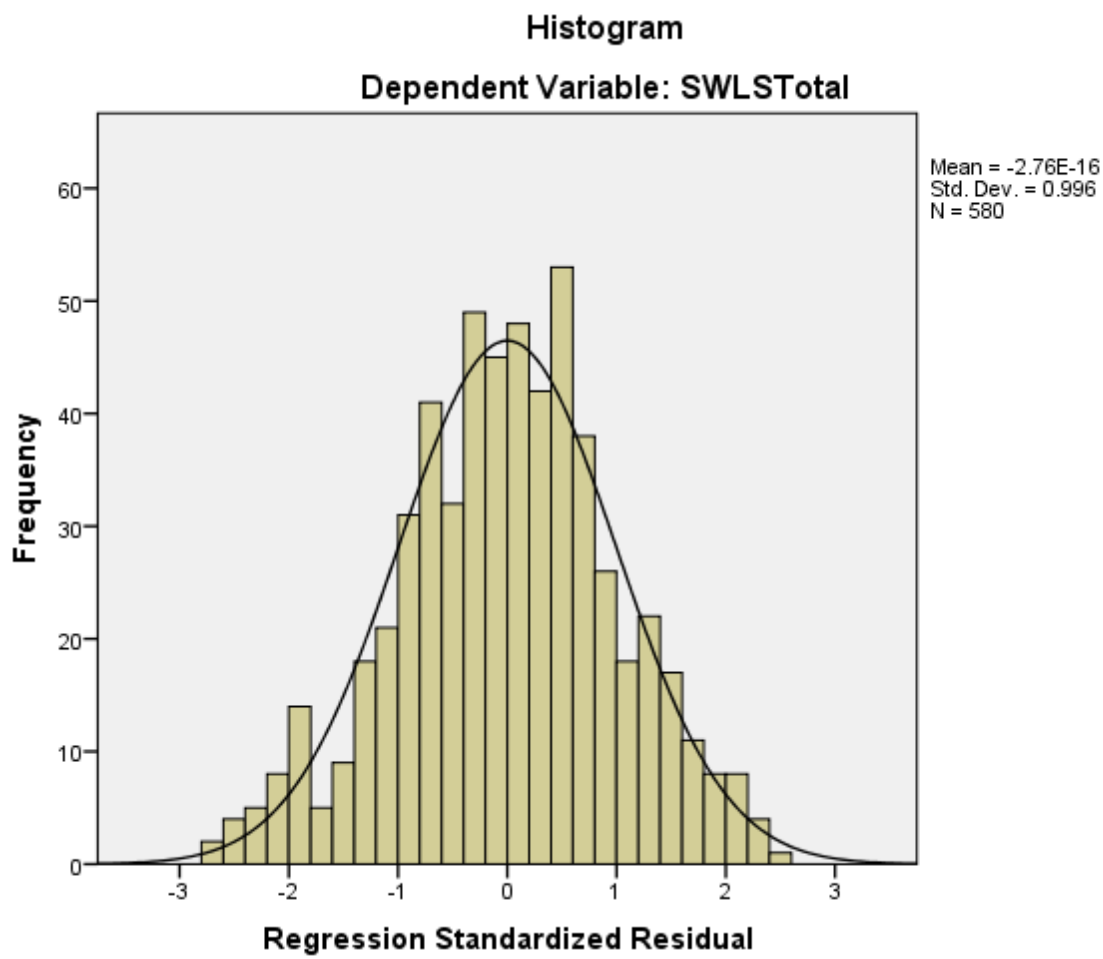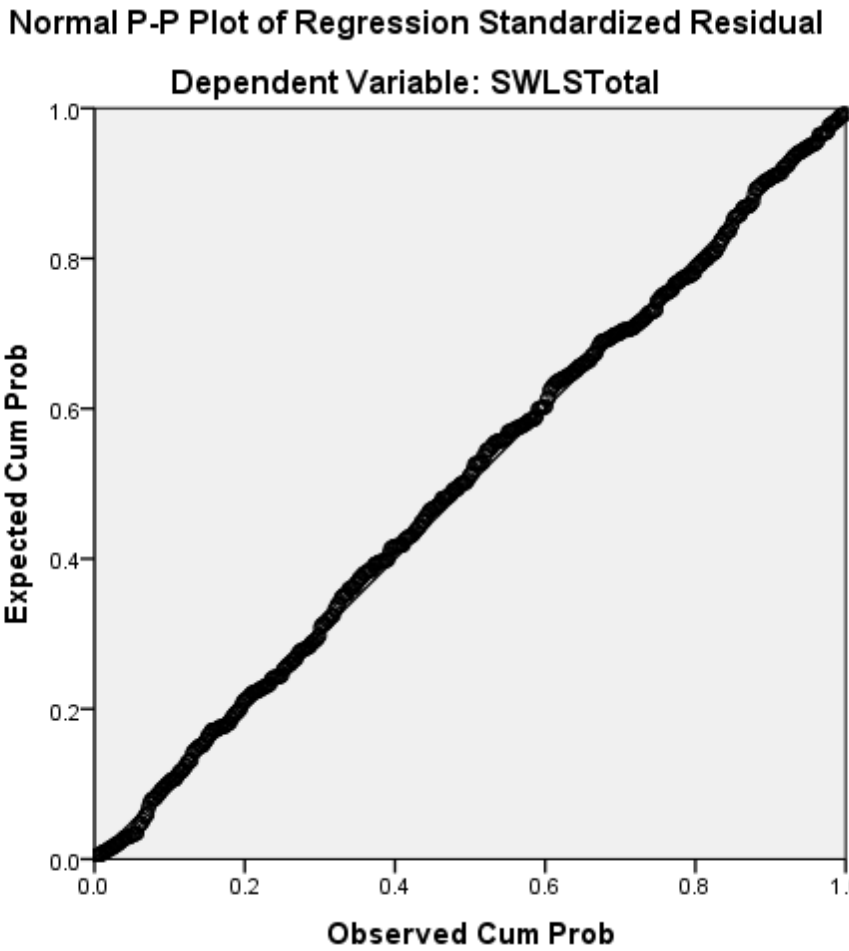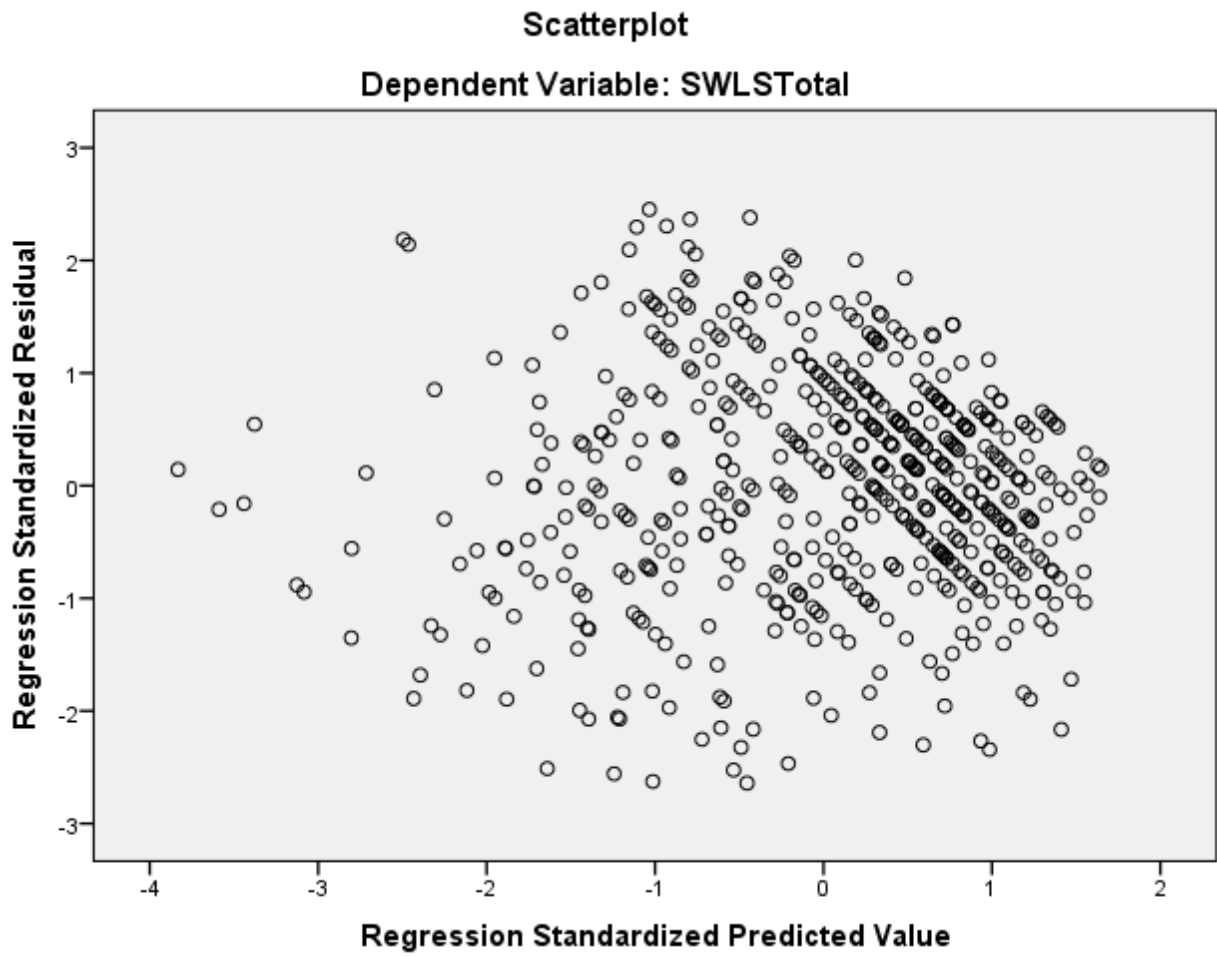
Appendix O: Ethics Approval Form

Office of the Deputy Vice-Chancellor
(Research)

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http://www.research.mq.edu.au/
ABN 90 952 801 237

MACQUARIE
University
SYDNEY·AUSTRALIA

11 December 2018

Mr Ben Stiel
Department of Psychology
Macquarie University

Dear Mr Stiel

Reference No: 5201200437

Title: *Psychological needs and subjective well-being*

This letter is to confirm that the ethics application cited above met the requirements set out in the *National Statement on Ethical Conduct in Human Research* (2007) (the *National Statement*).

The application received approval from the Macquarie University Human Research Ethics Committee (Human Sciences & Humanities) on **13 July 2012**.

The above project was conducted by under the supervision of Dr John Franklin.

Please do not hesitate to contact me if you have any questions.

Yours sincerely

Dr Karolyn White
Director, Research Ethics & Integrity
Chair, Macquarie University Human Research Ethics Committee

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research* (2007) and the *CPMP/ICH Note for Guidance on Good Clinical Practice.*

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