

**Student Well-Being: A Dimension of  
Subjective Well-Being?**

Elodie O'Connor

submitted in partial fulfillment of the requirements  
for the award of Bachelor of Arts (Honours) Degree  
School of Psychology

October 2005

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## Abstract

University students are often assumed to represent typical adults, but studies suggest that students' life satisfaction levels and salient domains of life may differ from those of working adults. A student well-being scale was designed to test the domains most salient to the university experience, and was used as an additional scale within the homeostatic model of subjective well-being. The participants were 201 full-time, first-year, on-campus university students from an Australian university, who completed an online questionnaire. It was predicted that student well-being would form a distinct factor, separate from personal well-being and neighbourhood well-being; that personal, student, and neighbourhood well-being would be significant predictors of life satisfaction and student life satisfaction; and that the homeostatic model of subjective well-being would be a better predictor of life satisfaction than multiple discrepancies theory. All analyses were tested using structural equation modelling. The first hypothesis was not supported, as student well-being did not form a dimension separate from personal and neighbourhood well-being. The second hypothesis gained some support, with findings that personal well-being and the general factor explained a significant proportion of the variance in life satisfaction, while neighbourhood well-being did not make a contribution. The student well-being scale alone measured student life satisfaction almost as well as the three-factor model. The third hypothesis also gained support, as the homeostatic model of subjective well-being explained more variance in life satisfaction than multiple discrepancies theory. However, problems were identified with the homeostatic model, as a number of variables did not significantly predict life satisfaction. Student life satisfaction was not as highly controlled by the homeostatic system, supporting a proposed proximal-distal hypothesis. It was concluded that while student well-being did not form a distinct scale within the homeostatic model of subjective well-being, it was a well-fitting measure used in isolation, and could be used within university settings as a brief measure of student life satisfaction. Further, it was concluded that the homeostatic model requires investigation of its measurement structure using structural equation modelling.

### **Student Well-Being: A Dimension of Subjective Well-Being?**

In studies of subjective well-being, young people attending university for the first time are generally assumed to be typical adults. However, this appears to be an inaccurate assumption. A number of studies have revealed that students report a significantly lower level of satisfaction with their lives than adults in the general population (Cummins, 2003; Stewart & Podbury, 2003; Vaez, Kristenson, & Laflamme, 2004). There is a need in the literature to proceed beyond this recognition of lower life satisfaction levels toward an understanding of how and why students' subjective well-being differs from other adults.

From a review of the literature, salient domains for the university experience were identified. A pilot study with 50 undergraduate students was conducted, confirming the salience of these domains. The nine identified domains were living situation (Clements & Turpin, 1996; Cummins, Davern, Okerstrom, Lo, & Eckersley, 2005); financial resources (Stewart & Podbury, 2003; Audin, Davy, & Barkham, 2003); transport and parking (Forward, 2003; New Zealand Public Health Advisory Committee, 2003); physical health (Vaez, et al., 2004; Cummins & Chambers, 2004); new friends and existing friends (Lee & Robbins, 1995; Lu, 1999); academic support and services and academic workload (Amenkhienan, Kogan, & Lori, 2004; Nelson & Williams, 2004); and family support (Cheng & Furnham, 2003; Noom, Dekovic, & Meeus, 1999; Lopez, Mauricio, Gormley, Simko, & Berger, 2001). However, these domains have not yet been tested empirically for their ability to predict the life satisfaction of university students.

To date, there has been little consideration of how university students' subjective well-being fits into general theoretical frameworks of subjective well-being, with most studies focussing on the student experience in isolation or in relation to theories of coping or attachment (Benjamin, 1994; Frazier & Schauben, 1994; Osman, Barrios, Longnecker, & Osman, 1994; Clements & Turpin, 1996; Beyers & Goossens, 2002). Cummins, Eckersley, Pallant, Van Vugt, and Misajon (2003) have introduced the concept of a proximal-distal hypothesis within the homeostatic model of subjective well-being, which provides a useful framework for the development of a student well-being dimension as part of a general well-being construct. The core assumption of this hypothesis is that the more self-relevant the well-being type, the more a homeostatic system influences and maintains an individual's set-point level of well-being (Cummins & Lau, 2004), which, for Western populations, is  $75 \pm 2.5\%$  (Cummins, 2003; Mellor, Cummins & Loquet, 1999). The model

assumes that personality factors help determine this original set-point (Cummins, Gullone & Lau, 2002), while a set of cognitive buffers (optimism, self-esteem, and perceived control) are activated when significant life events occur, which help to restore well-being levels back to their original set-point (Cummins & Nistico, 2002). Cummins and Chambers (2004) have reported three distinct dimensions of subjective well-being; personal well-being, neighbourhood well-being, and national well-being. Each dimension is measured using scales with items regarding satisfaction levels for salient domains; for example, health satisfaction as a domain of personal well-being. Life satisfaction, measured by a single item asking for a rating of satisfaction with life as a whole, represents an individual's general evaluation of their subjective well-being. The homeostatic model is depicted in Figure 1 below.

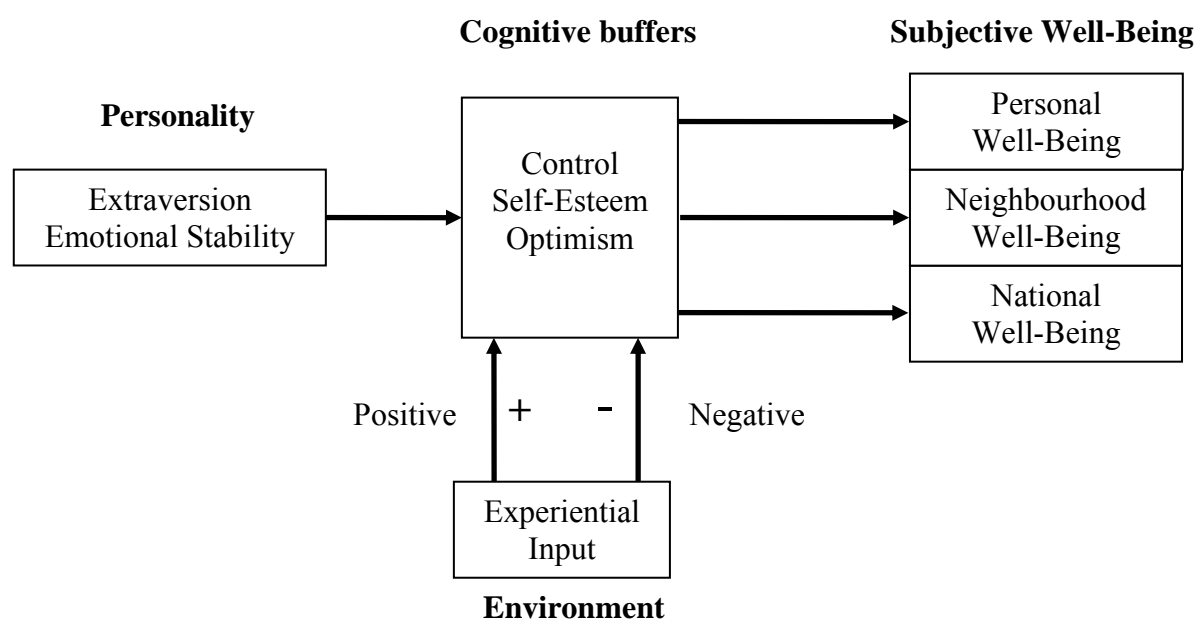
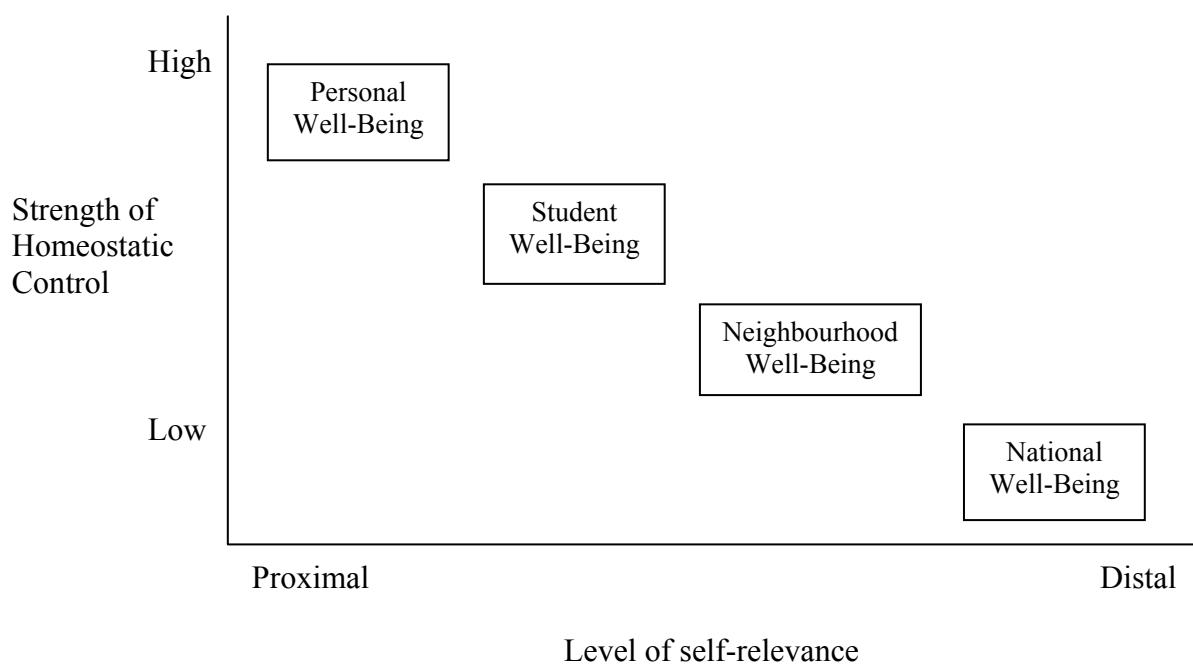


Figure 1. The homeostatic model of subjective well-being (adapted from Mellor, Cummins, Karlinski & Storer, 2003).

The model assumes that personal well-being is the most self-relevant well-being dimension to individuals and is thus under the strongest influence of a homeostatic system, followed by neighbourhood well-being and then national well-being. The model has been found to account for 59% of the variance in life satisfaction (Cummins & Chambers, 2004).

Consistent with this model, it would be assumed that, as shown in Figure 2, student well-being would fall in the conceptual space between personal well-being and neighbourhood well-being, being more self-relevant than neighbourhood life, but less self-relevant than personal life.



*Figure 2.* Levels of subjective well-being on the proximal-distal dimension (adapted from Cummins et al, 2003).

Another major theoretical approach to the investigation of subjective well-being is Michalos' (2003) multiple discrepancies theory. The basis of Michalos' theory is that people determine their own level of satisfaction by comparing their present selves to diverse standards such as what they need from life, and what they expect to have in the next five years. Michalos (1991) conducted an extensive study of the subjective well-being of university students in twenty countries, using a scale designed to test multiple discrepancies theory, and reported that the scale accounted for 53% of the variance in life satisfaction ratings. However, multiple discrepancies theory may not provide the most reliable way to measure student well-being, as the scale was developed to measure general adult life satisfaction and happiness, and the same scale has been used effectively to measure life satisfaction in rehabilitation clients as well as senior citizens (Mallard, Lance, & Michalos, 1997). Further, the scale fails to take into consideration factors such as experiential input and personality. Thus, it is believed that the homeostatic model will provide a more comprehensive framework than multiple discrepancies theory.

From this examination of the literature on subjective well-being and student life satisfaction, the current study was designed to test three predictions.



Firstly, student well-being will be a distinct type of subjective well-being, separate from personal well-being and neighbourhood well-being. The domains most salient to the university experience are anticipated to be distinct from the domains salient to personal and neighbourhood well-being.

Secondly, student well-being will make a contribution to the prediction of overall life satisfaction and student life satisfaction, along with personal and neighbourhood well-being.

Thirdly, personality, experiential input, and the cognitive buffers of the homeostatic model will contribute to the explanation of life satisfaction and student life satisfaction. Further, it is expected that the homeostatic model will explain more variance in the prediction of life satisfaction than multiple discrepancies theory.

## **Method**

### *Participants*

Participants consisted of 201 first-year, full-time, on-campus students, from an Australian university. There were 57 males, and 144 females; aged 17 to 25 years, with a mean age of 19.33 years. Participation was voluntary, and the response rate was 29.6%.

### *Measures*

A survey (Appendix B) was developed with demographic questions, measures of subjective well-being, predictors from the homeostatic model, multiple discrepancies theory, and a student well-being scale designed for this study. Measures of depression, stress, and loneliness were included for general description of the student sample. An 11-point end-defined scale was used for all items, both for response simplicity and scale sensitivity (Cummins & Gullone, 2000; Cummins, 2003). Appendix D1 gives evidence of reliability analyses.

*Demographic information* included such measures as age, gender, employment status, and living situation.

*Student life satisfaction* was measured by asking participants to rate how satisfied they were with their student life as a whole.

*Student well-being.* A nine-item scale was developed with an item measuring satisfaction in each of the domains identified earlier as salient to student life. The scale had a coefficient alpha of .78.

*Life Satisfaction* was measured by asking participants to rate how satisfied they were with their life as a whole.

*Personal well-being.* The Personal Wellbeing Index (International Wellbeing Group, 2005) measured satisfaction levels in the personal life domains of standard of living, health, achievements in life, personal relationships, safety, feeling part of the community, and future security. The scale has high internal consistency with Cronbach's alphas between .70 and .85 (International Wellbeing Group, 2005), and was .80 for the current study.

*Neighbourhood satisfaction* was measured by asking participants to rate how satisfied they were with their neighbourhood life as a whole.

*Neighbourhood well-being.* The Neighbourhood Well-Being Scale (Hollway, 2003) measured satisfaction levels in the neighbourhood life domains of trust, social participation, common goals, natural environment, public resources, and sharing. The scale has good internal reliability with a reported Cronbach's alpha of .89 (Hollway, 2003), while for the current study it was .86.

*Personality.* Extraversion and emotional stability were measured using four items from the Ten Item Personality Inventory (Gosling, Rentflow & Swann, 2003); a short inventory designed to measure the Big Five personality dimensions. Cronbach's alphas of .67 for extraversion and .73 for emotional stability were reported by Gosling et al. (2003). The corresponding alphas in the present study were .67 and .66 respectively.

*Self-esteem.* The ten-item Rosenberg Self-Esteem Scale (Rosenberg, 1979) was used, with the five negatively worded items reverse-coded. Rosenberg (1979) reported a scale reliability coefficient of .72, while the coefficient alpha was .88 in this study.

*Perceived control.* The nine-item scale developed as a measure of primary, secondary and relinquished control (Chambers, Hollway, Parsons, & Wallage, 2003) was used. Chambers, Cummins, Mellor, Firth and Stokes (2005) reported a coefficient alpha of .76 for the scale, and in this study an alpha of .60 was obtained.

*Optimism.* The three optimistically framed items of the Life Orientation Test - Revised (Carver & Scheier, 2003) were used, as they have been found to have a similar reliability to that of the full scale, with Chambers (personal communication, August 9<sup>th</sup>, 2005) reporting reliabilities of .75 for the three-item scale compared to .81 for the six-item scale. In this study, an alpha of .85 was obtained for the three-item scale.

*Experiential Input* was measured by asking participants whether anything had happened recently that cause them to 'feel happier or sadder than normal'. Participants were asked to respond 'yes, happier', 'yes, sadder', or 'no'.

*Multiple Discrepancies Theory*. Michalos' (1991) seven-item scale was adapted and rephrased to reduce overly long items and confusing scale anchors. Michalos does not report reliability for the scale; however, the coefficient alpha for this study was .79.

*Depression and stress*. The short version of the Depression, Anxiety and Stress Scales (DASS) was used (Lovibond & Lovibond, 1995), consisting of two seven-item scales. The authors report alphas of .81 for both subscales. In this study, alpha values of .92 for the depression subscale and .91 for the stress subscale were obtained.

*Loneliness*. Questions from the twenty-item UCLA Loneliness Scale (Russell, 1996) were used to measure loneliness, which has a reliability ranging from .89 to .94 (Russell, 1996). This study used a three-item version of the scale, which has been shown by Mellor to form a reliable measure of loneliness (personal communication, August 13<sup>th</sup>, 2005), and had a coefficient alpha of .88 in this study.

### *Procedure*

After gaining ethics approval (Appendix A1), students who met the study's selection criteria were sent an email by an administrative staff member inviting students to participate (Appendix A2). An active hyperlink was included in the brief letter, which took participants to the plain language statement (Appendix A3), offering them the option to agree or disagree to participate. Participants were given two weeks to complete the questionnaire. The survey responses were then made available to the author, with student identification removed.

### *Data Analytic Strategy*

The hypotheses were tested using structural equation modelling (SEM) with AMOS 5.0. All latent variables were scaled by constraining the variances to one, and, following Hu and Bentler's (1999) advice, model fit was assessed using a two-index strategy: SRMR (standardised root mean square residual); and IFI (incremental fit index). The latter index was developed to be less sensitive to sample size (Byrne, 2001), and so was appropriate for the relatively small sample ( $N = 201$ ) in this study. Good model fit was indicated by an IFI value close to .95 and an SRMR value less than .80.

## Results

### *Preliminary Data Analysis*

A missing values analysis within SPSS 12.0 found less than five percent of data to be missing across all scales, which appeared to be randomly distributed. Thus, mean substitution was used for all AMOS analyses, due to restrictions for data with missing values. A number of outliers were found, but the means and 5% trimmed means were similar, so outliers were retained (see Appendix D2). Skewness and kurtosis were violated, but as there were more than 200 participants, the risks from these violations were considered minimal (Tabachnick & Fidell, 2001). Using the Kolmogorov-Smirnov statistic, normality was violated for most variables (Appendix D2). However, life satisfaction measures are often negatively skewed, given that most people are generally satisfied with their lives. Thus, data were not transformed. Appendix C1 provides evidence for this preliminary data analysis.

### *Descriptive Analyses*

Demographics variables were examined for group differences on the subjective well-being measures. No consistently significant group differences were found, and most of the significant effects had violations of homogeneity of variance, due to small sample size (Appendix C2). A mean loneliness score of 39.05 was found, which is comparable to the mean level for students of 40.08 reported by Russell (1996), while 94.97% of depression scores and 91.23% of stress scores were in the normal range of 0 to 78 (Crawford & Henry, 2003). These results are presented in Appendix C3.

Table 1 presents the means, standard deviations, and significant correlations for scales used to test the hypotheses. The mean score for life satisfaction ( $M = 70.54$ ) falls below the normative range for Australians of 73.4 to 76.7% (International Wellbeing Group, 2005) indicating, as expected, that students have lower levels of life satisfaction than other adults. Personal well-being levels were higher than student well-being levels, while neighbourhood well-being levels were lowest, supporting the proximal-distal hypothesis. All correlations between scales were in the expected direction.

The means, standard deviations, and significant correlations between items of the three well-being scales are provided in Appendix C4. Several of the student well-being items were correlated with items with similar content on the personal and neighbourhood well-

being scales, supporting the validity of the items. However, further examination was required to determine whether these items formed three distinct scales.

Table 1  
*Correlation Matrix for Scales*

Scale	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Overall Life Satisfaction	70.54	19.16	1											
2. Student Life Satisfaction	65.10	18.94	.48	1										
3. Neighbour Life Satisfaction	67.91	20.48	.40	.40	1									
4. Personal Well-Being	70.10	14.34	.69	.51	.52	1								
5. Student Well-Being	65.93	14.18	.59	.63	.54	.70	1							
6. Neighbourhood Well-Being	60.53	17.49	.34	.37	.68	.48	.57	1						
7. Perceived Control	59.66	12.59	.32		.31	.34			1					
8. Experiential Input	2.04	.744								1				
9. Self-Esteem	67.92	17.75	.52	.36	.35	.50	.40	.39	.56	1				
10. Optimism	61.60	20.32	.42	.34	.36	.43	.44	.35	.56	.55	1			
11. Extraversion	57.90	23.37			.33			.35		.33	.36	1		
12. Emotional Stability	60.57	21.81	.38	.32		.40	.41	.34	.34	.53	.42		1	
13. Multiple Discrepancies	58.61	14.11	.51	.40	.33	.55	.45	.38	.33	.46	.47			1

Note: All correlations significant at the 0.01 level (2-tailed) are shown.

#### *Hypothesis One: The Factorability of Student Well-Being*

A preliminary factor analysis in SPSS indicated that the personal well-being physical health item and the student well-being academic support and services item were redundant domains explained entirely by other items in the scales; the pattern matrix indicated loadings of .99 for the physical health item and 1.02 for the academic support and services item. All subsequent analyses excluded these items. Initial factor analyses were conducted using SPSS, but the program was found to be unsuitable due to ambiguities in interpreting the factor structure of student well-being in relation to the other well-being scales. To allow for unrestricted factor analysis, structural equation modelling using AMOS was utilised instead.

Initially, the student well-being items were examined for their factor structure, and the model produced a  $\chi^2_{(19)} = 24.68$ ,  $p < .171$  and IFI = .98, SRMR = .04, indicating excellent fit. Further, standardised regression weights ranged from .43 to .62, confirming that all items contributed strongly. Subsequently, personal, student, and neighbourhood well-being were examined using a nested factors model, which allows each item to contribute variance to a general factor directly, rather than being dependent on the scale it has been specified to load onto (Gignac, 2005). The model is depicted in Figure 3, and consists of a first-order general ('g') factor, as well as three first-order group-level factors (personal well-being, student well-being, and neighbourhood well-being). The 'g' factor allowed each scale to

have specific variance associated with its well-being type, as well as general variance that is common to the three scales (Revelle, 2004). The model produced a  $\chi^2_{(150)} = 319.75$ ,

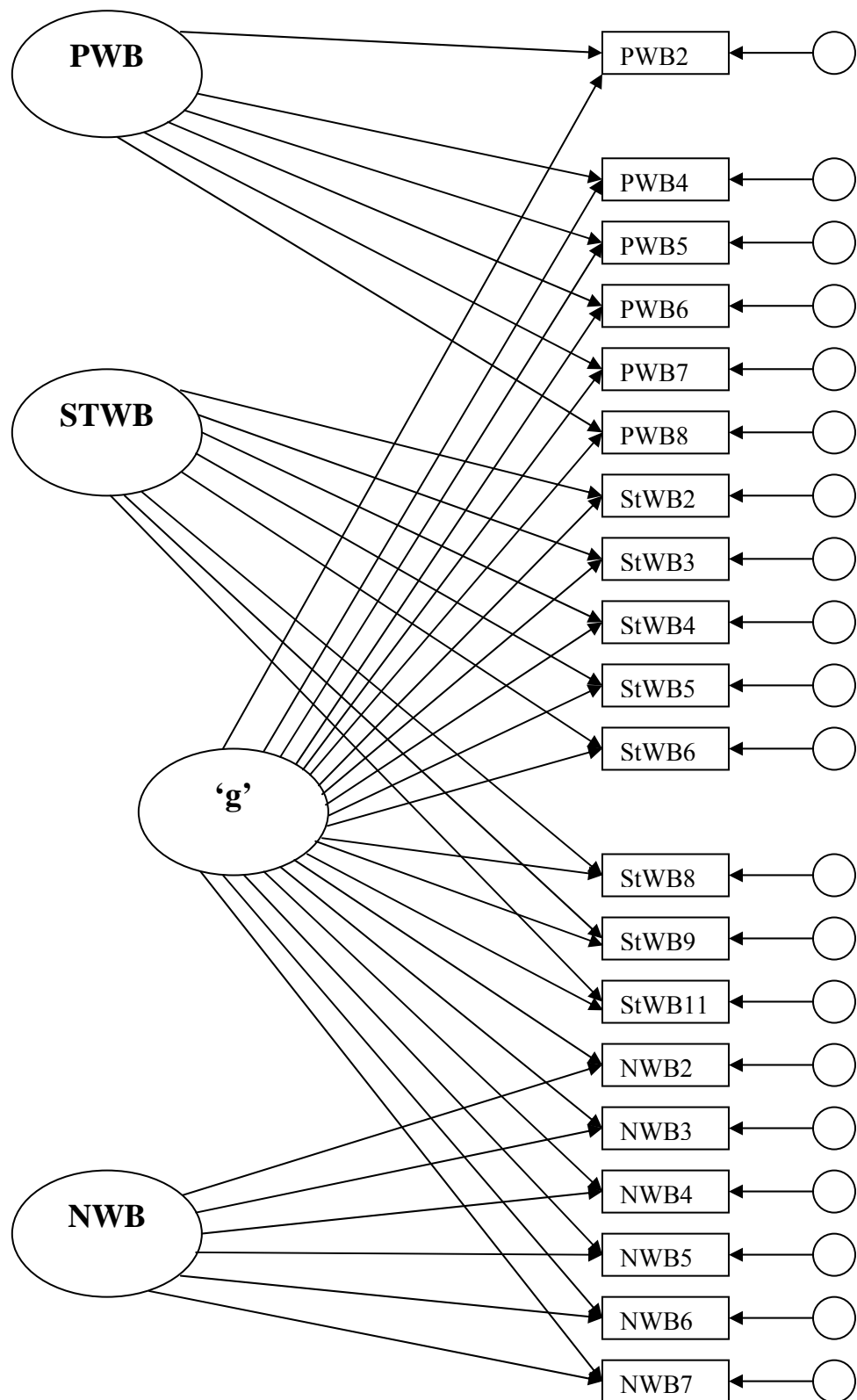


Figure 3. Structural equation model of subjective well-being.

$p < .001$  and  $IFI = .89$ ,  $SRMR = .06$ , indicating inadequate fit. The standardised parameter estimates presented in Table 2 (Model A) indicate that the student well-being factor does not make an independent contribution to the model, with most of the factor loadings falling around .1 or less. In contrast, the neighbourhood well-being items contributed strongly to the model, with loadings ranging from .31 to .72, while personal well-being items had intermediate loadings, ranging from .02 to .55. The personal well-being item representing standard of living (PWB2) did not contribute sufficiently to the model. Further, an examination of the modification index values indicated that the personal well-being community item (PWB7) was highly related to the neighbourhood well-being factor, with a value of 29.80. Both items were thus omitted from further analyses.

Table 2

*Standard Parameter Estimates for the Subjective Well-being Model*

	Model A				Model B		
	'g'	PWB	StWB	NWB	'g'	PWB	NWB
PWB2	.55	-.02			PWB2		
PWB4	.57	-.23			PWB4	.59	-.23
PWB5	.49	-.55			PWB5	.48	-.72
PWB6	.57	-.45			PWB6	.58	-.34
PWB7	.63	-.30			PWB7		
PWB8	.56	-.24			PWB8	.58	-.19
StWB2	.59		-.01		StWB2	.58	
StWB3	.44		-.07		StWB3	.47	
StWB4	.63		-1.0		StWB4	.61	
StWB5	.48		-.11		StWB5	.50	
StWB6	.50		.12		StWB6	.48	
StWB8	.55		.06		StWB8	.57	
StWB9	.56		.01		StWB9	.59	
StWB11	.52		.14		StWB11	.51	
NWB2	.60			-.50	NWB2	.60	-.52
NWB3	.48			-.62	NWB3	.45	-.64
NWB4	.49			-.72	NWB4	.47	-.72
NWB5	.47			-.38	NWB5	.46	-.41
NWB6	.42			-.31	NWB6	.41	-.34
NWB7	.50			-.59	NWB7	.45	-.64

*Note:* See Appendix F for item descriptions. 'g' = general well-being, PWB = personal well-being, NWB = neighbourhood well-being, StWB = student well-being.

The student well-being items did, however, load strongly onto the 'g' factor, and appeared to be measuring the same general factor as personal well-being and neighbourhood well-being items. Consequently, the student well-being factor was removed, while the student well-being items remained, and the analysis was run again. This new model produced a  $\chi^2_{(125)} = 220.63$ ,  $p < .001$  and  $IFI = .92$ ,  $SRMR = .05$ , indicating adequate fit. The

standardised parameter estimates are detailed in Table 2 (Model B), showing that the personal well-being items, while loading highly on the ‘g’ factor, still did not load strongly onto the personal well-being scale. These results suggest rejection of the first hypothesis, as student well-being does not form a distinct factor within this nested factors model, but also reveals some problems within the personal well-being scale.

*Hypothesis Two: Predictors of Life Satisfaction and Student Life Satisfaction*

The next analysis tested personal well-being, neighbourhood well-being, and the ‘g’ factor (with student well-being items included) as predictors of life satisfaction. Preliminary analysis indicated the need for a covariance between the two neighbourhood well-being items regarding social participation and natural environment, which was added, although it is theoretically unclear why this was required. The results in Table 3 indicate that the model fits the data, with most of the variance in life satisfaction accounted for by the ‘g’ factor. Personal well-being made a moderate contribution, while neighbourhood well-being made a very weak contribution. Subsequently, the model was tested again, but this time the student well-being items were removed from the analysis. The results of this model, shown in Table 3, indicate that the model fit the data very well, but when the standardised parameter estimates are examined, it appears that the personal well-being factor is over-compensating for the lack of a third factor in the model. Again, neighbourhood well-being explained little variance.

Table 3  
*Predictors of Life Satisfaction and Student Life Satisfaction*

Model	$\chi^2$	df	p	IFI	SRMR	Standardised parameter estimates			
						‘g’ → LS	PWB → LS	NWB → LS	StWB → StLS
‘g’, PWB, NWB → LS	262.22	139	.000	.91	.05	.66	.39	.03	
‘g’, PWB, NWB (no StWB) → LS	61.69	32	.001	.97	.04	.34	.73	.13	
‘g’, PWB, NWB → StLS	242.43	139	.000	.92	.06	.71	.18	.07	
StWB → StLS	56.82	27	.001	.92	.05				.70

*Note:* PWB = personal well-being, NWB = neighbourhood well-being, StWB = student well-being, LS = life satisfaction, StLS = student life satisfaction.

With these results in mind, the relationship between personal well-being, neighbourhood well-being, the ‘g’ factor, and student life satisfaction were examined. This model also fit the data, and the results are given in Table 3. Examination of the standardised parameter estimates found that the ‘g’ factor accounted for most of the variance in student life



satisfaction, while personal well-being and neighbourhood well-being accounted for little variance. The entire model accounted for 54% of the variance in student life satisfaction.

In light of these results, the student well-being scale was examined for its ability to predict student life satisfaction in isolation from any other well-being scales. The model fit well, as shown in Table 3, and explained 49% of the variance in student life satisfaction. Figure 4 shows the standardised regression weights, and reveals that all items contribute strongly to the model. The results of these analyses suggest that the student well-being items contribute to the 'g' factor in adding to the prediction of overall life satisfaction, while also stabilising the model. In the case of student life satisfaction, the items form a cohesive scale that accounts for a significant amount of variance, and predict student life satisfaction almost as well as the three factor model. Thus, the second hypothesis was supported.

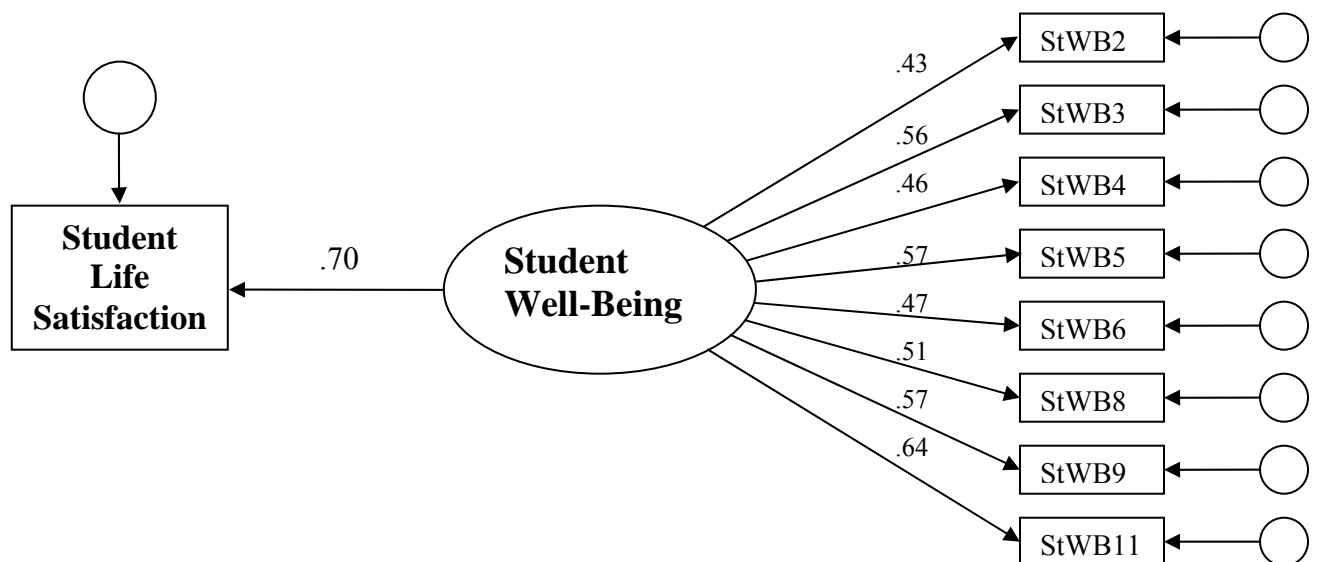


Figure 4. Structural equation model of student well-being as a predictor of student life satisfaction.

#### *Hypothesis Three: The Homeostatic Model and Multiple Discrepancies Theory*

Using multiple discrepancies theory as a predictor of life satisfaction produced a  $\chi^2_{(20)} = 48.42$ ,  $p < .001$  and IFI = .93, SRMR = .06, which indicated that the model fit the data. However, the scale accounted for only 6% of the variance in life satisfaction.

The homeostatic model of subjective well-being was tested in a number of sections, to determine whether each predictor was actually contributing to the model. The cognitive buffers were assessed first, using a higher order model. It was assumed that there was a general ('g') cognitive buffer factor, which the three buffer types would load onto.

Perceived control and self-esteem subscales were item parcelled, as a factor analysis within SPSS found that the positive self-esteem items formed a separate factor to the negative self-esteem items, and that the three perceived control types formed three distinct factors. The model is depicted in Figure 5, and produced a  $\chi^2_{(18)} = 43.18, p < .001$  and IFI = .96, SRMR = .06. This indicated that the model fit the data, but examination of the standardised regression weights revealed that the relinquished control subscale of perceived control did not contribute adequately (.15), so this subscale was omitted from further analyses. The edited model produced a  $\chi^2_{(13)} = 13.76, p > .05$  and IFI = .99, SRMR = .04, indicating excellent fit.

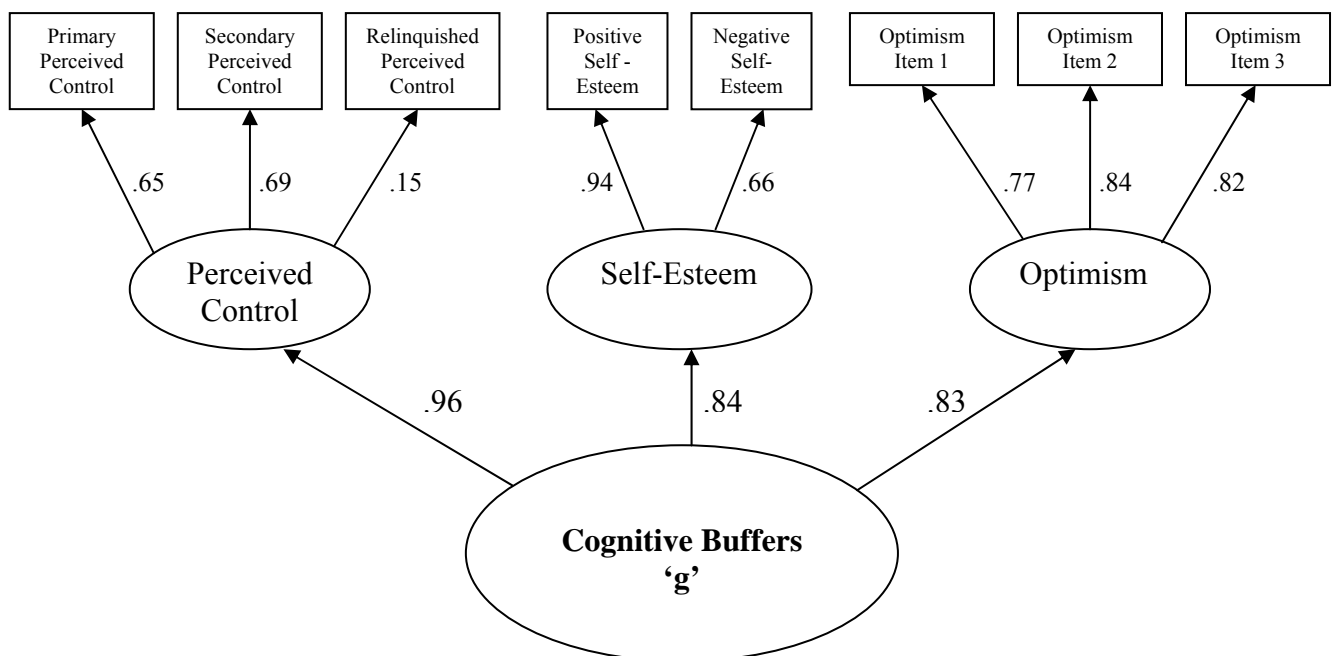


Figure 5. Perceived control, self-esteem, and optimism scales as measures of a general cognitive buffers factor.

Next, personality was assessed as a predictor of life satisfaction. The model produced a  $\chi^2_{(6)} = 56.12, p < .001$  and IFI = .76, SRMR = .12, indicating poor fit. Table 4 shows the standardised regression estimates, which revealed that while the extraversion items load strongly onto the extraversion scale, extraversion itself was only a weak predictor of life satisfaction (.18). Using .30 to indicate acceptable loadings for entry into the model, the extraversion subscale was omitted from further analyses. The adjusted model produced a

$\chi^2_{(1)} = 0.01$ ,  $p > .05$  and  $IFI = 1.01$ ,  $SRMR = .002$ , which indicated excellent model fit, and emotional stability remained a strong predictor of life satisfaction (.48).

Table 4

*Standardised Regression Estimates for Personality Factors Predicting Life Satisfaction*

Predictor	Estimate
Extraversion → Personality item 1	.78
Extraversion → Personality item 3	.66
Emotional Stability → Personality item 2	.67
Emotional Stability → Personality item 4	.77
Extraversion → Life Satisfaction	.18
Emotional Stability → Life Satisfaction	.45

Following these analyses, the full homeostatic model was assessed, and is depicted in Figure 6. The model produced a  $\chi^2_{(41)} = 85.34$ ,  $p < .001$  and  $IFI = .94$ ,  $SRMR = .07$ , indicating adequate fit, but experiential input had small standardised regression weights to both life satisfaction (-.05) and the general cognitive buffer factors (-.16), so was omitted from further analyses. The resulting model produced a  $\chi^2_{(33)} = 63.48$ ,  $p < .001$  and  $IFI = .96$ ,  $SRMR = .06$ , indicating excellent fit.

Figure 6 further indicates that, while personality (measured by emotional stability) does predict life satisfaction when assessed alone (.48), the introduction of the cognitive buffers into the model reduced the direct effect of personality on life satisfaction to .15; however, there is a strong indirect link of .64 via the cognitive buffers, demonstrating that these buffers mediate the effect of personality on life satisfaction. Further, the final homeostatic model accounted for 36% of the variance in life satisfaction, compared to only 6% for multiple discrepancies theory, thus supporting the prediction of hypothesis three.

The homeostatic model of subjective well-being was also tested for its ability to predict student life satisfaction, and produced a  $\chi^2_{(33)} = 59.09$ ,  $p < .005$  and  $IFI = .97$ ,  $SRMR = .06$ , indicating excellent fit; however, the model only accounted for 19% of the variance in student life satisfaction, compared to 49% accounted for by the student well-being scale alone. This further supports the use of a student well-being scale in the measurement of student life satisfaction.

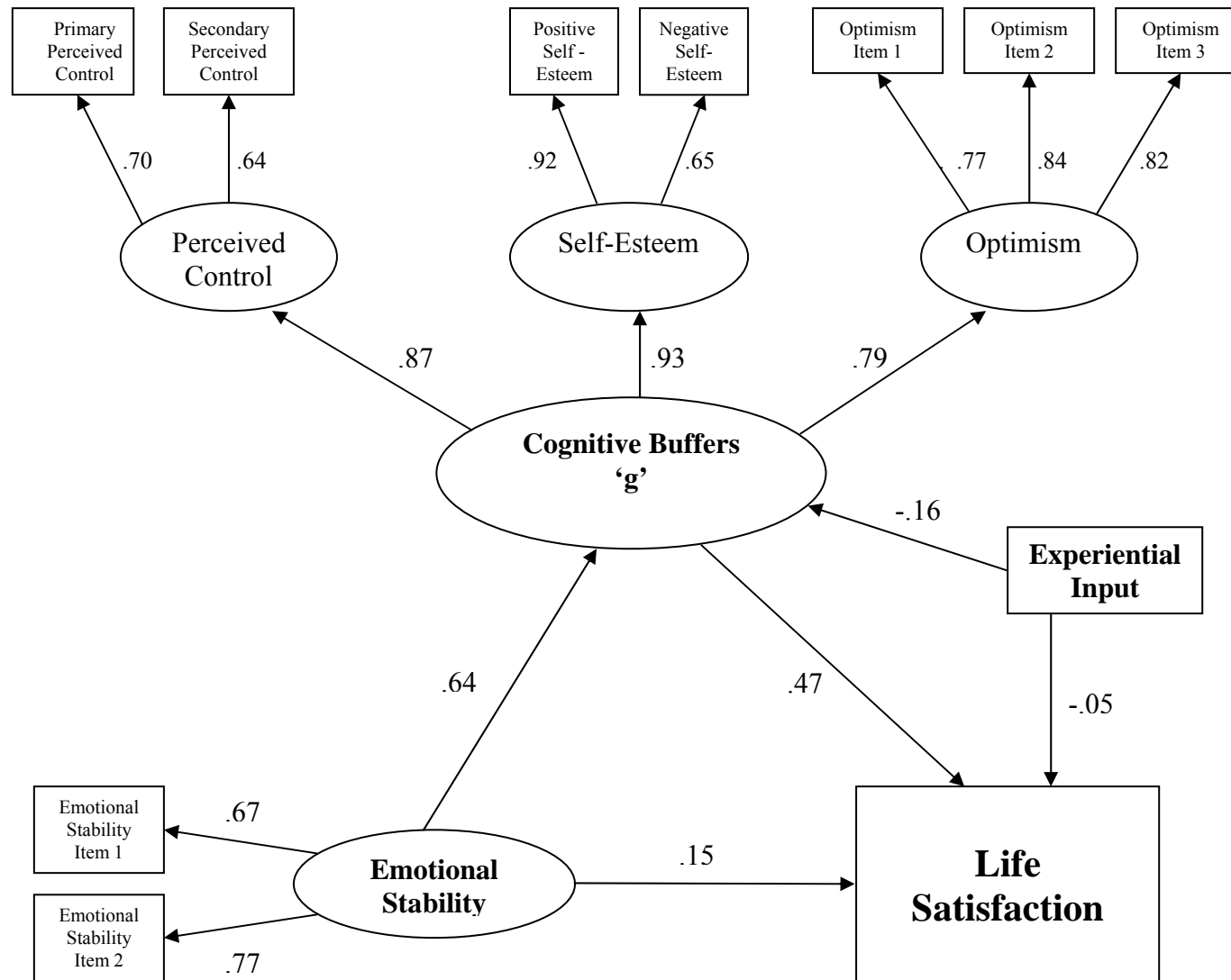


Figure 6. Structural equation model of the homeostatic model of subjective well-being.

## Discussion

Overall, the results of the study did not support the prediction that, for a university student population, there was a need for a student well-being scale within the homeostatic model of subjective well-being. While the items formed an excellent scale in isolation, the scale did not remain distinct once entered into the three-factor model of subjective well-being. However, student well-being items were related to the 'g' factor, indicating that they were measuring the same underlying construct as the personal and neighbourhood well-being scales. The items were found to stabilise the model, and assisted in the prediction of life satisfaction. Importantly, when the student well-being scale was used as a single measure of student life satisfaction, it predicted almost as much variance as the three-factor model. Finally, support for the use of the homeostatic model over multiple discrepancies theory was found; however, some problems with the homeostatic model of subjective well-being were identified.

### *Student Well-Being as a Third Well-Being Type*

The results indicated that a student well-being dimension does not exist alongside personal well-being and neighbourhood well-being as a separate dimension of subjective well-being. It appears, then, that university students do not perceive their student life as being distinct from their personal life. Importantly, the personal well-being scale was found to have a number of problems, with physical health being a redundant item and standard of living and feeling part of the community having low factor loadings. The community item has had a consistently high correlation with neighbourhood well-being over a number of studies (Cummins & Chambers, 2004; Chambers, 2004), but has yet to be removed from the personal well-being scale. Further, Cummins and Chambers (2004) found that safety correlated as highly with neighbourhood well-being as it did with personal well-being. While the personal well-being scale was originally used effectively as a single measure of life satisfaction, now that neighbourhood and national well-being have been identified and fit the proximal-distal hypothesis, there is a need to reanalyse the item content of the personal well-being scale in combination with the other scales.

### *Student Life Satisfaction*

Previous studies of university student well-being and life satisfaction have used a range of scales, with no scale seemingly utilised more than any other. General adult population well-being scales are often used; for example, Zheng, Sang, and Lin (2004) used the

Satisfaction with Life Scale, while Stewart and Podbury (2003) used the Personal Well-Being Index. Alternatively, loneliness scales are often used as measures of student well-being, such as in the research conducted by Davis, Morris, and Kraus (1998) and Leondari and Kiosseoglou (2000). Other studies have used the Short Form-12 Health Survey, which measures physical and mental health (e.g. Bovier, Chamot, & Perneger, 2004; Perneger, Hudelson, & Bovier, 2004). However, Cummins (1997) proposed that life satisfaction measures should cover the full range of domains involved in life quality, which is what the current student well-being scale was designed to do. This feature sets it apart from other student well-being scales, as many do not attempt to identify and measure the most salient domains of a student's university experience.

The student well-being scale items formed a reliable, well-fitting factor when used in isolation as a predictor of student life satisfaction. Possibilities for the scale, then, include use in applied settings such as universities, to determine how satisfied first-year students are with their life as a student, and with specific domains of student life, such as academic workload, or family support. This will allow universities to provide further support in domains commonly identified by students as low satisfaction areas.

Further, the homeostatic model of subjective well-being was a much better predictor of life satisfaction than student life satisfaction, which supports the proximal-distal hypothesis that more self-relevant areas of life will be under greater control of the homeostatic system. For research into university specific settings, though, it appears that use of a student well-being scale, such as the one constructed here, would be a better test of student life satisfaction than the homeostatic model.

#### *The Homeostatic Model versus Multiple Discrepancies Theory*

Attempts in the current study to make multiple discrepancies items less wordy and include easy to understand scale anchors did not appear to assist the scale's ability to predict life satisfaction. A criticism of multiple discrepancies theory is that self-esteem and social support were found to be stronger predictors of life satisfaction than the perceived discrepancies items (Blore, 2005), which may help explain why the homeostatic model was a better predictor of life satisfaction, as it incorporates these concepts into the model.

Potential problem areas of the homeostatic model of subjective well-being were identified, with the finding that that a number of scales and predictors did not contribute to the model. Emotional stability was found to be a strong predictor of life satisfaction, while

extraversion failed to make a substantial contribution. This supports the conclusions made by Hills and Argyle (2001), who found that emotional stability correlated more highly with happiness and satisfaction with life than extraversion. These researchers attribute the dominance of extraversion in the literature to the difficulty in associating happiness and satisfaction with the absence of a negative state (neuroticism), which they propose is resolved by reversing neuroticism and terming it emotional stability (Hills & Argyle, 2001). Another measurement problem was identified within the perceived control scale, as the relinquished control subscale did not load onto the perceived control factor. These results support the findings of Davern (2005), who found that relinquished control strategies were not significant predictors of perceived control within a university student sample. From these results, it is recommended that SEM be used in future research involving the homeostatic model of subjective well-being, to determine whether the current findings generalise from a student population to a general adult population, and to further evaluate the contribution of each item on existing well-being scales to the measurement of subjective well-being.

#### *Limitations and Future Directions*

A major shortcoming of the study was sample size. While 201 participants were enough to run all the analyses, it became difficult when trying to assess differences between groups based on demographic categories. Future studies of student life satisfaction should make use of larger sample sizes, in order to determine whether any demographic differences do have an effect on life satisfaction.

The study confirmed that university students have significantly lower life satisfaction than other adults. This has major implications in all life satisfaction research, where students are often used as research participants. The results suggest that such use of university students as representation of a general adult population is inappropriate for studies of subjective well-being.

Other future considerations include adapting the student well-being scale to measure satisfaction with salient domains in occupational settings to ascertain whether the scale may be better used as an occupational well-being scale, rather than specifically a student well-being scale. All items on the scale would appear to be highly relevant to workplace settings as well as university settings, and it may be useful to determine whether the scale is useful as a brief measure of occupation-specific satisfaction.

### *Conclusions*

In summary, while the student well-being items did not form a distinct scale within the homeostatic model of subjective well-being, there may be some validity in using the scale in university settings, as it explains a significant amount of the variance in student life satisfaction. Further, multiple discrepancies theory has been shown to be the weaker theory in terms of predicting life satisfaction, when compared to the homeostatic model. A primary recommendation to arise from this study is that the homeostatic model requires further analysis within an SEM framework, in order to identify and resolve existing problems with predictors, item content, and factor structure.



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## Appendix A

## 1. Ethics Approval

DUHREC Subcommittee – Health & Behavioural Sciences  
Faculty of Health & Behavioural Sciences  
Burwood Campus, Burwood, Victoria 3125  
Telephone 03 9251 7174 Facsimile 03 9244 6019 email jasq@deakin.edu.au



6<sup>th</sup> July, 2005

Dr Susan Chambers  
School of Psychology  
BURWOOD CAMPUS

Dear Sue,

**DUHREC-H75-05: "Predictors of student well-being: A test of the homeostatic model of subjective well-being"**

The AMENDED application which was submitted by ELODIE O'CONNOR was considered executively by the DUHREC-H Subcommittee and has been **recommended for approval**.

The application is proceeding to the Deakin University Human Research Ethics Committee for ratification and, in the absence of any further advice, may commence.

An Annual Project Report Form has been attached which you will be required to complete in relation to this research. This should be completed and returned to the Administrative Officer to the DUHREC Subcommittee – Health & Behavioural Sciences, Burwood campus by Monday 21st November, 2005 or when the project is completed.

Good luck with the project!

Yours sincerely

A handwritten signature in black ink, appearing to read 'Dr Mark Stokes'.

**For**  
**Dr Mark Stokes (Chair)**  
DUHREC Subcommittee – Health & Behavioural Sciences

Cc: Ms Elodie O'Connor  
c/- Dr Sue Chambers  
School of Psychology  
BURWOOD CAMPUS

enc

## Appendix A (cont'd)

### 2. Letter of invitation



Dear all

Elodie O'Connor is a fourth year Deakin psychology student who is completing an honours thesis about first year university students' well-being with my supervision.

Elodie is surveying a random sample of students at the Burwood and Warrnambool campus.

Your email address has been selected by Division of Student Administration for the purpose of inviting you to participate.

We now invite you to participate by clicking on the weblink below, and reading more information about the survey.

Participation in the survey is voluntary, and anonymous. We encourage you to consider participating in this survey in the interest of greater understanding of students' university experience. The survey takes about 15 minutes to complete.

It would be most appreciated if you could complete the survey by Monday 25<sup>th</sup> July so that Elodie can complete her project.

Thank you very much for your time. Best wishes for your studies in Semester 2 2005.

Regards  
Sue Chambers

<http://www.deakin.edu.au/psychology/resarch/elodie/studentlifepls.html>

Sue Chambers, PhD  
Senior Lecturer  
School of Psychology  
Faculty of Health and Behavioural Science  
Deakin University, 221 Burwood Highway, Burwood Victoria 3125 Australia.  
Phone: 03 92446262 International: +61 392446262  
Fax: 03 92446858 International: +61 392446858  
Email: [smc@deakin.edu.au](mailto:smc@deakin.edu.au)  
Website: <http://www.deakin.edu.au>

## Appendix A (cont'd)

### 3. Plain Language Statement

#### **Predictors of Student Well-being: A Test of Models of Subjective Well-being.**

My name is Elodie O'Connor and I am completing an Honours degree in the School of Psychology at Deakin University. The course involves a research project and a thesis, and the research is under the supervision of Dr. Sue Chambers, who is a senior lecturer in the School of Psychology at Deakin University.

The project aims to investigate how satisfied students are with their personal lives, their lives as a student, and their lives in their neighbourhood. In addition, the study aims to find out what sorts of things affect overall life satisfaction as a university student. You are invited to participate in this research. If you agree to participate, you will be asked to complete the survey on this website. This will take approximately twenty minutes of your time. Returning your completed survey signifies that you consent to your responses being used in the research study. Your completed surveys will be anonymous to the researcher. Participation is voluntary, so you are able to withdraw from the study by not completing your survey.

The survey will ask you questions about your well-being, such as 'how satisfied are you your life as a whole?' It will also ask you questions about how you feel you are coping with life, such as 'when something bad happens to me – I ask others for help or advice.' Questions on student well-being will include items such as 'how satisfied are you with the new friends you have made at your campus?' It will also ask you to compare your life to other standards, with items like 'considering your life as a whole, how does it measure up to what you expected three years ago?' In all of these sections, you will be required to indicate your response to items using a scale ranging from 0-10. In addition, the survey will ask for your age and gender, as well as questions such as 'to study at university, did you move your residence? You will be asked to indicate the response that is appropriate for you.

It is not expected that participating in this study will cause you any undue emotional discomfort, stress or harm. However, if this does occur, please find a contact phone number at the end of this statement.

Data from the surveys will stored at Deakin University in a locked cabinet for a period of six years and are then destroyed, and you will not be identified or identifiable in any published results of this survey.

If you wish to be provided with the results of this research, or have any further questions about this study, please contact Dr. Sue Chambers on (03) 9244 6262, or alternatively, at [susan.chambers@deakin.edu.au](mailto:susan.chambers@deakin.edu.au)

If you feel you have experienced any undue emotional discomfort, stress or harm, please contact the Division of Student Life on your campus; Burwood Campus: (03) 9244 6300; Warrnambool Campus: (03) 5563 3256.

Should you have any concerns about the conduct of the research project please contact the Chair, Dr Mark Stokes, Deakin University Human Research Ethics Subcommittee – Health and Behavioural Sciences.  
Telephone (03) 9244 6865.



## Appendix B

### Student Well-being Survey

#### DEMOGRAPHIC QUESTIONS

1. Your Age (in Years)

2. Your Gender

Male  Female

3. What year level are you currently studying?

First  Second  Third  Fourth

4. Your study load:

Full time  Part time

5. Which campus are you currently studying at?

Burwood  Warrnambool  Geelong  Toorak  Off-campus

6. Which Faculty are you enrolled in?

Arts  Business and Law  Education  
 Science and Technology  Health and Behavioural Sciences

7. Are you currently employed?

Yes, part time  Yes, full time  No

8. To study at university, did you move your residence?

Yes  No (If no, please go to Question 14)

9. Do you live on-campus?

Yes  No

10. Please indicate who lived with you at your previous residence

No one, you live by yourself  Your partner  One or both of your parents/guardians  
 One or more children  One or more adults who are neither your parent nor your partner

11. Did you move the location of your residence

From urban (city) to rural (country)  From rural to urban  
 Remained urban  Remained rural  From overseas

12. Please indicate how long it has been since you left home:

Less than 3 months  3 – 6 months  more than 6 months

13. How far was your previous residence from your university campus?

Less than 15 kilometres  15 – 30 kilometres  30 – 80 kilometres  
 80 – 150 kilometres  more than 150 kilometres

**14. Please indicate who currently lives with you:**

- No one, you live by yourself    Your partner    One or both of your parents/guardians  
 One or more children    One or more adults who are neither your parent nor your partner

**15. What influenced your decision to attend this university most?**

- Personal preference    Parents preference    Friends preference  
 Financial situation    Only received an offer from this university

**16. Did Deakin University provide you with a mentor during your first weeks at university?**

- Yes, staff mentor    Yes, peer mentor    No

**SECTION A: PERSONAL WELL-BEING**

Thinking about your own life and personal circumstances, please select the number that best represents how satisfied you feel with various aspects of your life:

How satisfied are you with...	Very dissatisfied				Neutral				Very satisfied			
	0	1	2	3	4	5	6	7	8	9	10	
1. Your life as a whole?	0	1	2	3	4	5	6	7	8	9	10	
2. Your standard of living?	0	1	2	3	4	5	6	7	8	9	10	
3. Your health?	0	1	2	3	4	5	6	7	8	9	10	
4. What you achieve in life?	0	1	2	3	4	5	6	7	8	9	10	
5. Your personal relationships?	0	1	2	3	4	5	6	7	8	9	10	
6. How safe you feel?	0	1	2	3	4	5	6	7	8	9	10	
7. Feeling part of your community?	0	1	2	3	4	5	6	7	8	9	10	
8. Your future security?	0	1	2	3	4	5	6	7	8	9	10	
9. The control you have over your life?	0	1	2	3	4	5	6	7	8	9	10	

**SECTION B: YOUR STUDENT LIFE**

How satisfied are you with...	Very dissatisfied				Neutral				Very satisfied			
	0	1	2	3	4	5	6	7	8	9	10	
1. Your student life as a whole?	0	1	2	3	4	5	6	7	8	9	10	
2. Your living situation while at university?	0	1	2	3	4	5	6	7	8	9	10	
3. Your access to transport and parking at your campus?	0	1	2	3	4	5	6	7	8	9	10	
4. Your financial resources while at university?	0	1	2	3	4	5	6	7	8	9	10	
5. Your physical health since beginning at university?	0	1	2	3	4	5	6	7	8	9	10	
6. The new friends you have made at your campus?	0	1	2	3	4	5	6	7	8	9	10	
7. The academic support and services at your campus?	0	1	2	3	4	5	6	7	8	9	10	
8. The support of your family while at university?	0	1	2	3	4	5	6	7	8	9	10	
9. Your academic workload at university?	0	1	2	3	4	5	6	7	8	9	10	
10. Your control over your life as a student?	0	1	2	3	4	5	6	7	8	9	10	
11. The support of your existing friends while at university?	0	1	2	3	4	5	6	7	8	9	10	

**SECTION C: YOUR NEIGHBOURHOOD (the area where you live)**

How satisfied are you with...	Very dissatisfied				Neutral				Very satisfied			
	0	1	2	3	4	5	6	7	8	9	10	
1. Life in your neighbourhood as a whole?	0	1	2	3	4	5	6	7	8	9	10	
2. The level of trust in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10	
3. The amount of social participation in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10	
4. The common goals and values of people in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10	

5. The state of the natural environment in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10
6. The availability of public resources in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10
7. The amount of people's sharing and borrowing in your neighbourhood?	0	1	2	3	4	5	6	7	8	9	10

### SECTION D: OVER THE PAST WEEK

Please select the number which best reflects how much these statements applied to you OVER THE PAST WEEK.

	Not at all										A lot
I found it hard to wind down.	0	1	2	3	4	5	6	7	8	9	10
I couldn't seem to experience any positive feeling at all.	0	1	2	3	4	5	6	7	8	9	10
I found it difficult to work up the initiative to do things.	0	1	2	3	4	5	6	7	8	9	10
I tended to over-react to situations.	0	1	2	3	4	5	6	7	8	9	10
I felt that I was using a lot of nervous energy.	0	1	2	3	4	5	6	7	8	9	10
I felt that I had nothing to look forward to.	0	1	2	3	4	5	6	7	8	9	10
I found myself getting agitated.	0	1	2	3	4	5	6	7	8	9	10
I found it difficult to relax	0	1	2	3	4	5	6	7	8	9	10
I felt down-hearted and blue	0	1	2	3	4	5	6	7	8	9	10
I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3	4	5	6	7	8	9	10
I was unable to become enthusiastic about anything	0	1	2	3	4	5	6	7	8	9	10
I felt I wasn't worth much as a person	0	1	2	3	4	5	6	7	8	9	10
I felt that I was rather touchy	0	1	2	3	4	5	6	7	8	9	10

### SECTION E: RELATIONSHIPS

How often do you...	Never										Always
Feel that you lack companionship	0	1	2	3	4	5	6	7	8	9	10
Feel alone	0	1	2	3	4	5	6	7	8	9	10
Feel that your relationships with others are not important	0	1	2	3	4	5	6	7	8	9	10
Feel isolated from others	0	1	2	3	4	5	6	7	8	9	10
Feel that others are around you but not with you	0	1	2	3	4	5	6	7	8	9	10

### SECTION F: EVENTS IN YOUR LIFE

Has anything happened to you recently causing you to feel happier or sadder than normal? Please tick as appropriate.

Yes, happier       Yes, sadder       No (please go to Section G)

(If Yes) On a scale from 0 to 10, how strong would you rate this influence?

Very weak										Very strong	
0	1	2	3	4	5	6	7	8	9	10	

### SECTION G: COPING WITH LIFE

When bad things happen to you, how do you cope with them?

When something bad happens to me...	Very dissatisfied					Neutral					Very satisfied
I ask others for help and advice	0	1	2	3	4	5	6	7	8	9	10
I look for different ways to improve the situation	0	1	2	3	4	5	6	7	8	9	10
I use my skills to overcome the problem	0	1	2	3	4	5	6	7	8	9	10
I remind myself something good may come of it	0	1	2	3	4	5	6	7	8	9	10

I remind myself I am better off than others	0	1	2	3	4	5	6	7	8	9	10
I remind myself situation will improve if I am patient	0	1	2	3	4	5	6	7	8	9	10
I don't do anything as nothing can help	0	1	2	3	4	5	6	7	8	9	10
I spend time by myself	0	1	2	3	4	5	6	7	8	9	10
I just let my feelings out so others know how I feel	0	1	2	3	4	5	6	7	8	9	10

### SECTION H: MORE ABOUT YOURSELF

How much do you agree with the following statements?

	Disagree completely										Agree completely											
On the whole, I am satisfied with myself	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
At times I think I am no good at all	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I feel that I have a number of good qualities	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I am able to do things as well as most other people	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I feel I do not have much to be proud of	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I certainly feel useless at times	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I feel that I'm a person of worth, at least on an equal plane with others	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I wish I could have more respect for myself	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
All in all, I am inclined to feel that I am a failure	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I take a positive attitude toward myself	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

### SECTION I: WHAT YOU EXPECT TO HAPPEN

How much do you agree with the following statements?

	Disagree completely										Agree completely											
Overall, I expect more good things to happen to me than bad	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I'm always optimistic about my future	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
In uncertain times, I usually expect the best	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

### SECTION J: THE KIND OF PERSON YOU ARE

How much do you agree with the following statements?

	Disagree completely										Agree completely											
I see myself as extraverted and enthusiastic	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I see myself as anxious and easily upset	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I see myself as reserved and quiet	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
I see myself as calm and emotionally stable	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

### SECTION K: YOUR PERSONAL LIFE COMPARED TO DIVERSE STANDARDS

Considering your life right now, how does it measure up to the following standards?

#### What you want out of life

I get almost nothing that I want from life	I get exactly what I want from life										I get far more than I want from life										
0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

#### The average for people your age

I get far less than the average person my age	I get exactly what the average person my age gets										I get far more than the average person my age										
0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10

**The life you deserve**

I get almost nothing that I deserve in life				I get exactly what I deserve in life				I get far more than I deserve in life			
0	1	2	3	4	5	6	7	8	9	10	

**The life you need**

I get almost nothing that I need in life				I get exactly what I need in life				I get far more than I need in life			
0	1	2	3	4	5	6	7	8	9	10	

**What you expected three years ago**

I have far less than I expected to have				I have exactly what I expected to have				I have far more than I expected to have			
0	1	2	3	4	5	6	7	8	9	10	

**What you expect in the next five years**

My life will be far worse than it is now				My life will be the same as it is now				My life will be far better than it is now			
0	1	2	3	4	5	6	7	8	9	10	

**The best you have ever had in the past**

My life is currently far below its previous best				My life is currently equal to its previous best				My life is currently far above its previous best			
0	1	2	3	4	5	6	7	8	9	10	

**Thank you for your time and participation in this questionnaire.**

**SUBMIT**

## Appendix C

### 1. Evidence of analysis of assumptions, missing values and outliers

Variable	Missing Values		Estimation Technique		Outliers	Normality	
	Count	Percent	All values	Mean Substitution	5% trimmed mean	Statistic	Sig.
Overall Life Satisfaction	0	0.0	70.54	70.51	71.60	.20	.00*
Student Life Satisfaction	1	0.5	65.10	65.28	65.44	.12	.00*
Neighbourhood Life Satisfaction	0	0.0	67.91	67.94	68.73	.14	.00*
Personal Well-Being	4	2.0	70.10	70.07	70.62	.07	.01*
Student Well-Being	6	3.0	65.93	65.97	66.03	.05	.20
Neighbourhood Well-Being	2	1.0	60.53	60.57	61.05	.08	.00*
Stress	7	3.5	43.06	–	42.76	.09	.00*
Depression	2	1.0	36.26	–	35.55	.10	.00*
Loneliness	1	0.5	39.05	–	38.24	.10	.00*
Perceived Control	4	2.0	59.66	59.64	59.81	.04	.20
Self-Esteem	5	2.5	67.92	67.67	68.45	.06	.05
Optimism	4	2.0	61.60	61.74	62.45	.08	.00*
Extraversion	1	0.5	57.90	58.00	58.16	.07	.03*
Emotional Stability	0	0.0	60.57	60.38	61.13	.11	.00*
Multiple Discrepancies	6	3.0	58.61	58.59	58.50	.06	.20

*Note:* \*Violation of the assumption of normality. –Not used in AMOS analyses.

## Appendix C (cont'd)

## 2. Subjective well-being measures by demographic variable groups

	Life Satisfaction	Student Life Satisfaction	Neighbourhood Life Satisfaction	Personal Well-Being	Student Well-Being	Neighbourhood Well-Being
<b>Age</b>						
17-19 (N=148)	70.40 (18.87)	65.57 (18.54)	67.77 (19.85)	69.46 (14.30)	66.45 (13.60)	61.99 (17.52)
20-25 (N=47)	71.70 (20.78)	64.46 (20.93)	69.14 (21.85)	71.67 (14.98)	64.78 (16.03)	57.48 (16.94)
	$t(196) = -.35, p = .73$	$t(195) = .18, p = .86$	$t(196) = -.66, p = .51$	$t(193) = -.99, p = .32$	$t(190) = .50, p = .62$	$t(194) = 1.34, p = .18$
<b>Campus</b>						
City (N=132)	70.85 (18.83)	64.53 (18.85)	67.90 (20.75)	70.06 (13.21)	65.11 (13.61)	60.07 (17.79)
Country (N=69)	70.28 (20.07)	66.37 (19.32)	67.97 (19.29)	70.14 (16.57)	67.74 (15.08)	62.22 (16.47)
	$t(199) = .14, p = .89$	$t(198) = -.69, p = .49$	$t(199) = -.03, p = .98$	$t(195) = -.03, p = .97$	$t(193) = -1.31, p = .19$	$t(197) = -.99, p = .32$
<b>Gender</b>						
Male (N=57)	70.89 (18.90)	65.89 (18.56)	69.28 (20.70)	72.21 (12.33)	67.65 (13.49)	62.32 (19.03)
Female (N=144)	70.56 (19.41)	64.89 (19.22)	67.39 (20.05)	69.23 (15.14)	65.43 (14.41)	60.23 (16.63)
	$t(199) = .07, p = .94$	$t(198) = .49, p = .63$	$t(199) = .83, p = .41$	$t(195) = 1.40, p = .16$	$t(193) = 1.15, p = .25$	$t(197) = .94, p = .35$
<b>Employed</b>						
Yes (N=118)	71.27 (19.28)	65.64 (18.86)	71.10 (19.73)	71.16 (13.30)	66.73 (13.70)	62.50 (16.84)
No (N=80)	69.75 (19.22)	64.50 (19.28)	63.25 (20.11)	68.47 (15.92)	65.06 (14.82)	58.35 (17.84)
	$t(199) = .48, p = .63$	$t(198) = .37, p = .72$	$t(199) = 2.66, p = .01$	$t(195) = 1.27, p = .21$	$t(193) = .71, p = .48$	$t(197) = 1.43, p = .15$
<b>Move To Attend Uni</b>						
Yes (N=92)	70.10 (20.24)	66.52 (18.66)	66.63 (20.07)	68.49 (15.36)	66.66 (13.48)	60.88 (17.31)
No (N=109)	71.13 (18.37)	64.00 (19.29)	69.05 (20.35)	71.48 (13.47)	65.48 (14.79)	60.78 (17.42)
	$t(199) = -.30, p = .77$	$t(198) = .98, p = .33$	$t(199) = -.81, p = .42$	$t(195) = -1.45, p = .15$	$t(193) = .68, p = .50$	$t(197) = .26, p = .80$
<b>On-Campus</b>						
Yes (N=44)	72.72 (19.33)	66.81 (19.97)	67.50 (18.81)	69.83 (14.44)	68.56 (13.06)	67.10 (15.35)
No (N=51)	68.40 (20.93)	65.80 (17.15)	65.60 (20.81)	67.52 (15.97)	64.73 (13.76)	54.70 (18.15)
	$t(93) = 1.13, p = .26$	$t(93) = .35, p = .73$	$t(93) = .67, p = .51$	$t(91) = .70, p = .49$	$t(92) = 1.46, p = .15$	$t(91) = 3.63, p = .00$
<b>Move Location</b>						
Urban to rural (N=31)	68.38 (22.07)	63.54 (22.44)	62.90 (18.47)	67.00 (17.03)	64.55 (14.46)	60.48 (16.16)
Rural to urban (N=23)	69.56 (20.55)	66.08 (15.29)	67.39 (17.63)	68.11 (15.74)	68.30 (10.86)	63.65 (13.20)
Remain rural (N=9)	71.30 (20.95)	73.04 (18.19)	69.13 (17.81)	70.31 (15.21)	69.84 (14.32)	63.33 (18.48)
Remain urban (N=23)	75.00 (16.90)	65.00 (14.14)	76.25 (18.46)	73.39 (9.98)	65.55 (14.52)	55.41 (18.57)
From overseas (N=6)	68.33 (16.02)	58.33 (13.29)	55.00 (37.28)	63.14 (14.26)	60.37 (14.18)	47.22 (25.24)
	$F(4,91) = .11, p = .97$	$F(4,91) = 1.26, p = .97$	$F(4,91) = .86, p = .97$	$F(4,89) = .52, p = .97$	$F(4,90) = .97, p = .97$	$F(4,89) = 1.72, p = .97$

## Appendix C2 (cont'd)

<b><u>Time Since Move</u></b>							
0-3 months (N=4)	67.50 (18.92)	57.50 (5.00)	57.50 (15.00)	66.78 (5.99)	64.16 (3.99)	54.16 (8.22)	
3-6 months (N=37)	70.00 (17.79)	62.43 (16.89)	61.62 (18.93)	67.95 (14.11)	66.48 (12.93)	59.39 (15.72)	
6+ months (N=50)	70.20 (22.45)	70.00 (20.00)	70.40 (20.19)	69.00 (16.95)	66.91 (14.60)	62.04 (18.77)	
	$F(4,90)=.03, p=.97$	$F(4,90)=2.3, p=.11$	$F(4,90)=2.6, p=.08$	$F(4,88)=.07, p=.93$	$F(4,89)=.08, p=.93$	$F(4,88)=.53, p=.59$	
<b><u>How Far Moved</u></b>							
0-15km (N=4)	65.00 (12.90)	67.50 (23.62)	57.50 (15.00)	64.28 (5.15)	57.50 (5.97)	50.41 (6.43)	
15-30km (N=3)	76.66 (23.09)	60.00 (20.00)	76.77 (23.09)	73.33 (16.55)	72.22 (17.10)	55.55 (17.66)	
30-80km (N=5)	70.00 (14.14)	72.00 (8.36)	74.00 (15.16)	60.85 (15.60)	66.22 (6.69)	67.00 (15.69)	
80-150km (N=11)	70.90 (15.13)	62.72 (10.09)	62.72 (17.93)	70.77 (8.11)	65.55 (10.88)	62.12 (19.26)	
150+km (N=68)	69.85 (21.95)	66.76 (20.18)	65.58 (20.68)	68.65 (16.64)	67.09 (14.42)	60.73 (17.50)	
	$F(4,90)=.14, p=.97$	$F(4,90)=.31, p=.87$	$F(4,90)=.61, p=.66$	$F(4,88)=.49, p=.75$	$F(4,89)=.61, p=.66$	$F(4,88)=.60, p=.67$	
<b><u>Currently Live With</u></b>							
Nobody (N=8)	60.00 (26.72)	55.00 (26.72)	55.00 (31.62)	56.96 (23.10)	53.19 (23.81)	43.54 (19.62)	
Partner (N=13)	71.66 (20.37)	67.50 (14.84)	58.33 (27.90)	72.02 (13.31)	61.94 (16.20)	48.47 (25.70)	
Parents (N=96)	71.80 (17.89)	64.83 (18.45)	70.00 (20.05)	72.01 (12.99)	66.69 (13.97)	61.75 (16.74)	
Children (N=4)	60.00 (31.62)	65.00 (23.80)	70.00 (14.14)	63.21 (27.31)	75.92 (18.73)	70.41 (5.50)	
Other adults (N=78)	70.76 (19.12)	66.02 (19.02)	67.94 (17.15)	69.01 (13.84)	66.91 (12.01)	62.82 (15.09)	
	$F(4,198)=.99, p=.41$	$F(4,197)=.74, p=.57$	$F(4,198)=1.29, p=.27$	$F(4,195)=2.56, p=.04*$	$F(4,192)=2.29, p=.06$	$F(4,196)=4.01, p=.00*$	
<b><u>Reason For Uni</u></b>							
Personal (N=146)	71.94 (18.36)	67.41 (17.02)	69.30 (20.43)	70.75 (14.80)	68.09 (13.90)	63.14 (17.05)	
Parents (N=5)	74.00 (19.49)	54.00 (32.09)	62.00 (23.87)	68.28 (14.12)	62.44 (11.69)	54.00 (15.30)	
Friends (N=2)	85.00 (7.07)	65.00 (7.07)	70.00 (28.28)	72.14 (11.11)	57.22 (13.35)	42.50 (48.31)	
Financial (N=4)	80.00 (14.14)	60.00 (8.16)	60.00 (14.14)	68.57 (6.80)	62.77 (4.84)	55.00 (1.66)	
Only one offer (N=44)	64.41 (21.63)	59.53 (23.08)	64.65 (19.43)	68.12 (14.08)	60.59 (14.58)	55.19 (16.08)	
	$F(4,200)=1.72, p=.15$	$F(4,199)=2.09, p=.08$	$F(4,200)=.62, p=.65$	$F(4,196)=.37, p=.83$	$F(4,194)=2.98, p=.02*$	$F(4,198)=2.81, p=.03*$	
<b><u>Mentor</u></b>							
Yes, Staff (N=8)	66.25 (25.59)	66.25 (23.86)	71.25 (25.31)	65.53 (22.77)	65.27 (18.46)	60.41 (23.12)	
Yes, Peer (N=46)	75.33 (18.65)	70.66 (17.24)	68.66 (20.18)	72.85 (14.25)	70.80 (13.93)	67.53 (16.46)	
No (N=147)	69.44 (18.92)	63.40 (19.03)	67.51 (20.05)	69.49 (13.89)	64.59 (13.75)	58.80 (16.85)	
	$F(2,200)=1.73, p=.18$	$F(2,199)=2.92, p=.06$	$F(2,200)=.29, p=.75$	$F(2,196)=1.47, p=.23$	$F(2,194)=3.77, p=.03$	$F(2,198)=4.81, p=.01$	

Note: \*Homogeneity of variance violated.



### Appendix C (cont'd)

#### 3. Correlation of DASS and loneliness scales with subjective well-being measures

Measure	Stress	Depression	Loneliness	
<b>Satisfaction Measures</b>				
Life Satisfaction	-.40	-.57	-.53	
Student Life Satisfaction	-.40	-.49	-.37	
Neighbourhood Life Satisfaction	-.28	-.33	-.34	
<b>Well-Being Measures</b>				
Personal Well-Being	-.41	-.54	-.69	
Student Well-Being	-.42	-.49	-.45	
Neighbourhood Well-Being	-.34	-.37	-.36	
<b>Homeostatic Model Factors</b>				
Perceived Control	-.31	-.39	-.23	
Self-Esteem	-.53	-.68	-.44	
Optimism	-.40	-.45	-.32	
Extraversion	-.20	-.25	-.26	
Emotional Stability	-.58	-.45	-.38	
<b>Multiple Discrepancy Scale</b>				
Multiple Discrepancies Theory	-.30	-.41	-.49	
<b>DASS Measures</b>				
Stress	1	.77	.43	
Depression	.77	1	.53	
<b>Loneliness Measure</b>				
Loneliness	.43	.527	1	
	Mean	43.06	36.26	39.05
	SD	25.54	25.17	27.76

## Appendix C (cont'd)

## 4. Inter-correlations of items on the well-being scales

Item	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
<b><u>Student Well-Being</u></b>																								
1. Living Situation (StWB2)	6.99	2.34	1																					
2. Transport/Parking (StWB3)	5.53	2.87		1																				
3. Financial Situation (StWB4)	5.07	2.52	.40	.33	1																			
4. Physical Health (StWB5)	6.28	2.27	.32		.40	1																		
5. New Friends (StWB6)	6.93	2.56					1																	
6. Academic Support (StWB7)	6.46	2.16		.30	.33		.45	1																
7. Family Support (StWB8)	8.18	2.11	.37	.32					.39	1														
8. Academic Workload (StWB9)	6.56	1.98			.34	.30	.33	.46	.41	1														
9. Existing Friends (StWB11)	7.25	2.20							.37		1													
<b><u>Personal Well-Being</u></b>																								
10. Standard of Living (PWB2)	7.46	2.04	.55		.46	.33						1												
11. Health (PWB3)	6.97	2.01				.65					.30	.40	1											
12. Achievements (PWB4)	6.89	1.90	.42		.33	.35	.31	.33	.34	.32	.32	.33	.32	1										
13. Personal Relations (PWB5)	6.82	2.33	.37								.34	.34		.45	1									
14. Safety (PWB6)	7.80	2.02	.38		.31						.39	.33		.41	.53	1								
15. Part of Community (PWB7)	6.27	2.41			.31		.48	.31	.33	.32	.32	.31	.32	.42	.45	.52	1							
16. Future Security (PWB8)	6.84	2.11			.35		.35	.43		.43				.42	.39	.39	.47	1						
<b><u>Neighbourhood Well-Being</u></b>																								
17. Level of Trust (NWB2)	6.49	2.17	.34		.35		.32				.38			.35		.42	.47	.31	1					
18. Social Participate (NWB3)	5.35	2.53			.39		.31							.34			.49		.55	1				
19. Common Goals (NWB4)	5.50	2.22					.32									.31	.49		.66	.69	1			
20. Nature Environment (NWB5)	6.95	2.24							.33	.30							.42		.54	.35	.53	1		
21. Public Resources (NWB6)	6.49	2.31		.33	.33				.31								.31		.40	.32	.41	.42	1	
22. Sharing/Borrowing (NWB7)	5.55	2.19			.33		.30									.31	.53		.58	.65	.64	.43	.43	1

Note: All correlations shown are significant at the 0.01 level (2-tailed).

## Appendix D

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## Appendix D

### 1. Reliabilities

#### 1A: Personal Well-Being

##### Reliability Statistics

Cronbach's Alpha	N of Items
.802	7

##### Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PWB standard of living	.449	.791
PWB health	.425	.795
PWB achieve in life	.551	.774
PWB personal relationships	.588	.766
PWB safety	.607	.763
PWB part of community	.591	.765
PWB future security	.533	.776

#### 1B: Neighbourhood Well-Being

##### Reliability Statistics

Cronbach's Alpha	N of Items
.860	6

##### Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
NWB trust	.712	.826
NWB social participation	.654	.837
NWB common goals and values	.764	.816
NWB natural environment	.579	.849
NWB availability of public resources	.500	.864
NWB sharing and borrowing	.723	.824

#### 1C: Student Well-Being

##### Reliability Statistics

Cronbach's Alpha	N of Items
.784	9

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SWB living situation	.474	.763
SWB transport and parking	.448	.770
SWB financial resources	.507	.758
SWB physical health	.429	.769
SWB new friends	.418	.772
SWB academic support and services	.551	.754
SWB family support	.515	.759
SWB academic workload	.555	.755
SWB support of existing friends	.389	.774

**1D: Personality****Reliability Statistics**

Cronbach's Alpha	N of Items
.672	2

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PER extraverted and enthusiastic (extraversion)	.514	.(a)
PER reserved and quiet (extraversion)	.514	.(a)

a The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Author Note: The Alpha can not be calculated in the case of a two item scale when one item is deleted.

**1E: Emotional Stability****Reliability Statistics**

Cronbach's Alpha	N of Items
.662	2

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PER anxious and easily upset (emotional stability)	.499	.(a)
PER calm and emotionally stable (emotional stability)	.499	.(a)

a The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Author Note: The Alpha can not be calculated in the case of a two item scale when one item is deleted.

## 1F: Self-Esteem

### Reliability Statistics

Cronbach's Alpha	N of Items
.880	10

### Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SE satisfied with self	.728	.862
SE think self is no good at all	.642	.866
SE have number of good qualities	.531	.874
SE able to do things as well as most	.494	.876
SE do not have much to be proud of	.651	.865
SE feel useless at times	.609	.870
SE feel a person of worth, equal to others	.537	.873
SE wish could have more respect for self	.582	.873
SE inclined to feel a failure	.688	.862
SE positive attitude toward self	.726	.859

## 1G: Optimism

### Reliability Statistics

Cronbach's Alpha	N of Items
.850	3

### Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OPT usually expect best	.704	.805
OPT optimistic about future	.741	.770
OPT expect more good things than bad	.713	.797

## 1H: Perceived Control

### Reliability Statistics

Cronbach's Alpha	N of Items
.603	9

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PC ask others for help (primary)	.174	.607
PC ways to improve situation (primary)	.564	.514
PC use skills to overcome problem (primary)	.591	.506
PC something good may come (secondary)	.598	.486
PC better off than others (secondary)	.459	.530
PC will improve if patient (secondary)	.536	.506
PC nothing can help (relinquished)	.238	.588
PC spend time by self (relinquished)	.063	.632
PC let feelings out so others know (relinquished)	-.251	.723

**1I: MDT****Reliability Statistics**

Cronbach's Alpha	N of Items
.786	7

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
MDT what you want out of life	.589	.745
MDT average for people your age	.522	.757
MDT life you deserve	.631	.739
MDT life you need	.646	.738
MDT what you expected three years ago	.530	.758
MDT what you expect in the next five years	.275	.796
MDT best you have ever had in the past	.465	.774

**1J: Depression****Reliability Statistics**

Cronbach's Alpha	N of Items
.917	7

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DASS positive feeling (depression)	.736	.906
DASS work up initiative (depression)	.619	.917
DASS nothing to look forward to (depression)	.787	.900
DASS down-hearted and blue (depression)	.821	.896
DASS not enthusiastic (depression)	.751	.904
DASS not worth much (depression)	.798	.899
DASS life was meaningless (depression)	.709	.908

**1K: Stress****Reliability Statistics**

Cronbach's Alpha	N of Items
.911	7

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DASS hard to wind down (stress)	.579	.913
DASS over-reacting (stress)	.714	.899
DASS nervous energy (stress)	.723	.898
DASS getting agitated (stress)	.849	.884
DASS difficult to relax (stress)	.781	.892
DASS intolerance (stress)	.717	.899
DASS rather touchy (stress)	.749	.896

**1L: Loneliness****Reliability Statistics**

Cronbach's Alpha	N of Items
.881	3

**Item-Total Statistics**

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
LONELINESS lack companionship	.764	.837
LONELINESS feel alone	.836	.770
LONELINESS isolated from others	.712	.880



## Appendix D (con't)

### 2. Assessing Normality

#### 2A: Missing Values

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
%SM total personal wellbeing	197	98.0%	4	2.0%	201	100.0%
%SM total student wellbeing	195	97.0%	6	3.0%	201	100.0%
%SM total neighbourhood wellbeing	199	99.0%	2	1.0%	201	100.0%
stress score on dass	194	96.5%	7	3.5%	201	100.0%
depression score on dass	199	99.0%	2	1.0%	201	100.0%
3 item loneliness scale	200	99.5%	1	.5%	201	100.0%
total perceived control	197	98.0%	4	2.0%	201	100.0%
total self esteem	196	97.5%	5	2.5%	201	100.0%
total optimism	197	98.0%	4	2.0%	201	100.0%
SMextraversionpersonality	200	99.5%	1	.5%	201	100.0%
SMemotionalstabilitypersonality	201	100.0%	0	.0%	201	100.0%
total multiple discrepancies	195	97.0%	6	3.0%	201	100.0%

#### 2B: 5% Trimmed Mean, Skewness & Kurtosis

Descriptives

		Statistic	Std. Error	
%SM total personal wellbeing	Mean	70.1015	1.02183	
	95% Confidence Interval for Mean	Lower Bound	68.0863	
		Upper Bound	72.1167	
		5% Trimmed Mean	70.6261	
	Median	71.4286		
	Variance	205.696		
	Std. Deviation	14.34209		
	Minimum	25.71		
	Maximum	98.57		
	Range	72.86		
	Interquartile Range	19.29		
	Skewness	-.561	.173	
	Kurtosis	.186	.345	
	%SM total student wellbeing	Mean	65.9316	1.01557
95% Confidence Interval for Mean		Lower Bound	63.9287	
		Upper Bound	67.9346	
5% Trimmed Mean		66.0336		
Median		66.6667		

	Variance		201.118	
	Std. Deviation		14.18160	
	Minimum		24.44	
	Maximum		96.67	
	Range		72.22	
	Interquartile Range		18.89	
	Skewness		-.187	.174
	Kurtosis		-.090	.346
%SM total neighbourhood wellbeing	Mean		60.5360	1.24003
	95% Confidence Interval for Mean	Lower Bound	58.0907	
		Upper Bound	62.9814	
	5% Trimmed Mean		61.0506	
	Median		61.6667	
	Variance		305.996	
	Std. Deviation		17.49275	
	Minimum		.00	
	Maximum		95.00	
	Range		95.00	
	Interquartile Range		20.00	
	Skewness		-.455	.172
	Kurtosis		.438	.343
stress score on dass	Mean		43.0633	1.83380
	95% Confidence Interval for Mean	Lower Bound	39.4465	
		Upper Bound	46.6802	
	5% Trimmed Mean		42.7639	
	Median		44.2857	
	Variance		652.384	
	Std. Deviation		25.54181	
	Minimum		.00	
	Maximum		97.14	
	Range		97.14	
	Interquartile Range		43.21	
	Skewness		.093	.175
	Kurtosis		-1.043	.347
depression score on dass	Mean		36.2670	1.78492
	95% Confidence Interval for Mean	Lower Bound	32.7471	
		Upper Bound	39.7870	
	5% Trimmed Mean		35.5568	
	Median		32.8571	
	Variance		634.005	
	Std. Deviation		25.17946	
	Minimum		.00	
	Maximum		94.29	
	Range		94.29	
	Interquartile Range		44.29	
	Skewness		.297	.172
	Kurtosis		-1.053	.343
3 item loneliness scale	Mean		39.0500	1.96314

total perceived control	95% Confidence Interval for Mean	Lower Bound	35.1788	
		Upper Bound	42.9212	
	5% Trimmed Mean		38.2407	
	Median		33.3333	
	Variance		770.785	
	Std. Deviation		27.76301	
	Minimum		.00	
	Maximum		100.00	
	Range		100.00	
	Interquartile Range		50.00	
	Skewness		.263	.172
	Kurtosis		-1.099	.342
	Mean		59.6672	.89769
	95% Confidence Interval for Mean	Lower Bound	57.8969	
		Upper Bound	61.4376	
	5% Trimmed Mean		59.8183	
	Median		60.0000	
Variance		158.751		
Std. Deviation		12.59965		
Minimum		26.67		
Maximum		87.78		
Range		61.11		
Interquartile Range		17.78		
Skewness		-.163	.173	
Kurtosis		-.194	.345	
Mean		67.9286	1.26825	
95% Confidence Interval for Mean	Lower Bound	65.4273		
	Upper Bound	70.4298		
5% Trimmed Mean		68.4535		
Median		70.0000		
Variance		315.256		
Std. Deviation		17.75546		
Minimum		20.00		
Maximum		100.00		
Range		80.00		
Interquartile Range		26.00		
Skewness		-.395	.174	
Kurtosis		-.364	.346	
Mean		61.6074	1.44830	
95% Confidence Interval for Mean	Lower Bound	58.7512		
	Upper Bound	64.4637		
5% Trimmed Mean		62.4572		
Median		63.3333		
Variance		413.219		
Std. Deviation		20.32780		
Minimum		.00		
Maximum		100.00		
Range		100.00		

	Interquartile Range		26.67	
	Skewness		-.549	.173
	Kurtosis		.246	.345
SMextraversionpersonality	Mean		57.9000	1.65314
	95% Confidence Interval for Mean	Lower Bound	54.6401	
		Upper Bound	61.1599	
	5% Trimmed Mean		58.1667	
	Median		60.0000	
	Variance		546.573	
	Std. Deviation		23.37890	
	Minimum		.00	
	Maximum		100.00	
	Range		100.00	
	Interquartile Range		35.00	
	Skewness		-.153	.172
	Kurtosis		-.527	.342
SMemotionalstabilitypersonality	Mean		60.5721	1.53896
	95% Confidence Interval for Mean	Lower Bound	57.5375	
		Upper Bound	63.6068	
	5% Trimmed Mean		61.1332	
	Median		65.0000	
	Variance		476.046	
	Std. Deviation		21.81848	
	Minimum		.00	
	Maximum		100.00	
	Range		100.00	
	Interquartile Range		30.00	
	Skewness		-.293	.172
	Kurtosis		-.409	.341
total multiple discrepancies	Mean		58.6154	1.01114
	95% Confidence Interval for Mean	Lower Bound	56.6212	
		Upper Bound	60.6096	
	5% Trimmed Mean		58.5002	
	Median		58.5714	
	Variance		199.367	
	Std. Deviation		14.11973	
	Minimum		22.86	
	Maximum		100.00	
	Range		77.14	
	Interquartile Range		20.00	
	Skewness		.115	.174
	Kurtosis		-.337	.346

## 2C: Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
%SM total personal wellbeing	.074	197	.011	.976	197	.002
%SM total student wellbeing	.049	195	.200(*)	.991	195	.270
%SM total neighbourhood wellbeing	.078	199	.005	.981	199	.008
stress score on dass	.090	194	.001	.965	194	.000
depression score on dass	.096	199	.000	.949	199	.000
3 item loneliness scale	.103	200	.000	.944	200	.000
total perceived control	.035	197	.200(*)	.993	197	.537
total self esteem	.064	196	.050	.979	196	.005
total optimism	.077	197	.006	.972	197	.001
SMextraversionpersonality	.066	200	.032	.981	200	.008
SMemotionalstabilitypersonality	.108	201	.000	.976	201	.002
total multiple discrepancies	.057	195	.200(*)	.993	195	.538

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

## Appendix D (cont'd)

### 3. AMOS output for all analyses

#### 3A1: Hypothesis One: Analysis One

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
switem1 <--- g_WB	.465
switem2 <--- g_WB	.567
switem3 <--- g_WB	.490
switem4 <--- g_WB	.546
switem5 <--- g_WB	.459
switem6 <--- g_WB	.431
switem8 <--- g_WB	.618
switem9 <--- g_WB	.615

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	24.687	19	.171	1.299
Saturated model	36	.000	0		
Independence model	8	283.497	28	.000	10.125

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.913	.872	.979	.967	.978
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

#### 3A2: Hypothesis One: Analysis Two

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
pwitem8 <--- g_WB	.555
pwitem2 <--- g_WB	.553
pwitem4 <--- g_WB	.574
pwitem5 <--- g_WB	.486
pwitem6 <--- g_WB	.565
pwitem7 <--- g_WB	.626
switem1 <--- g_WB	.517
switem2 <--- g_WB	.589
switem3 <--- g_WB	.438
switem4 <--- g_WB	.628
switem5 <--- g_WB	.478
switem6 <--- g_WB	.504
switem8 <--- g_WB	.551
switem9 <--- g_WB	.561
nwitem7 <--- g_WB	.496
nwitem2 <--- g_WB	.603
nwitem3 <--- g_WB	.477
nwitem4 <--- g_WB	.488
nwitem5 <--- g_WB	.474
nwitem6 <--- g_WB	.416
pwitem8 <--- g_PW	-.239
pwitem2 <--- g_PW	-.018
pwitem4 <--- g_PW	-.228

	Estimate
pwitem5 <--- g_PW	-.549
pwitem6 <--- g_PW	-.445
pwitem7 <--- g_PW	-.304
switem11 <--- g_SW	.138
switem2 <--- g_SW	-.009
switem3 <--- g_SW	-.073
switem4 <--- g_SW	-1.004
switem5 <--- g_SW	-.111
switem6 <--- g_SW	.124
switem8 <--- g_SW	.063
switem9 <--- g_SW	.013
nwitem7 <--- g_NW	-.593
nwitem2 <--- g_NW	-.496
nwitem3 <--- g_NW	-.615
nwitem4 <--- g_NW	-.715
nwitem5 <--- g_NW	-.380
nwitem6 <--- g_NW	-.313

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	60	319.751	150	.000	2.132
Saturated model	210	.000	0		
Independence model	20	1636.560	190	.000	8.613

##### Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.805	.753	.886	.851	.883
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3A3: Hypothesis One: Analysis Three

#### Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
pwitem8 <--- g_WB	.579
pwitem4 <--- g_WB	.591
pwitem5 <--- g_WB	.475
pwitem6 <--- g_WB	.577
switem11 <--- g_WB	.507
switem2 <--- g_WB	.581
switem3 <--- g_WB	.471
switem4 <--- g_WB	.605
switem5 <--- g_WB	.504
switem6 <--- g_WB	.476
switem8 <--- g_WB	.571
switem9 <--- g_WB	.587
nwitem7 <--- g_WB	.453
nwitem2 <--- g_WB	.595
nwitem3 <--- g_WB	.451
nwitem4 <--- g_WB	.468
nwitem5 <--- g_WB	.464
nwitem6 <--- g_WB	.411
pwitem8 <--- g_PW	-.192
pwitem4 <--- g_PW	-.229
pwitem5 <--- g_PW	-.724
pwitem6 <--- g_PW	-.338
nwitem7 <--- g_NW	-.637
nwitem2 <--- g_NW	-.517
nwitem3 <--- g_NW	-.640

	Estimate
nwitem4 <--- g_NW	-.720
nwitem5 <--- g_NW	-.407
nwitem6 <--- g_NW	-.337

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	64	220.630	125	.000	1.765
Saturated model	189	.000	0		
Independence model	36	1351.989	153	.000	8.837

##### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.837	.800	.922	.902	.920
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3B1: Hypothesis Two: Analysis One

#### Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
pwitem8 <--- g_WB	.558
pwitem4 <--- g_WB	.611
pwitem5 <--- g_WB	.470
pwitem6 <--- g_WB	.555
switem11 <--- g_WB	.490
switem2 <--- g_WB	.598
switem3 <--- g_WB	.479
switem4 <--- g_WB	.594
switem5 <--- g_WB	.503
switem6 <--- g_WB	.478
switem8 <--- g_WB	.559
switem9 <--- g_WB	.558
nwitem7 <--- g_WB	.448
nwitem2 <--- g_WB	.580
nwitem3 <--- g_WB	.458
nwitem4 <--- g_WB	.471
nwitem5 <--- g_WB	.446
nwitem6 <--- g_WB	.400
pwitem8 <--- g_PW	-.196
pwitem4 <--- g_PW	-.296
pwitem5 <--- g_PW	-.649
pwitem6 <--- g_PW	-.331
nwitem7 <--- g_NW	-.631
nwitem2 <--- g_NW	-.518
nwitem3 <--- g_NW	-.653
nwitem4 <--- g_NW	-.704
nwitem5 <--- g_NW	-.462
nwitem6 <--- g_NW	-.338
lifesat <--- g_PW	-.391
lifesat <--- g_WB	.658
lifesat <--- g_NW	.027



**Model Fit Summary****CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	262.224	139	.000	1.887
Saturated model	190	.000	0		
Independence model	19	1539.704	171	.000	9.004

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.830	.790	.912	.889	.910
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

**3B2: Hypothesis Two: Analysis Two****Standardized Regression Weights: (Group number 1 - Default model)**

	Estimate
pwitem8 <--- g_WB	.356
pwitem4 <--- g_WB	.336
pwitem5 <--- g_WB	.267
pwitem6 <--- g_WB	.451
nwitem7 <--- g_WB	.682
nwitem2 <--- g_WB	.786
nwitem3 <--- g_WB	.564
nwitem4 <--- g_WB	.731
nwitem5 <--- g_WB	.724
nwitem6 <--- g_WB	.561
pwitem8 <--- g_PW	.457
pwitem4 <--- g_PW	.610
pwitem5 <--- g_PW	.660
pwitem6 <--- g_PW	.450
nwitem7 <--- g_NW	-.368
nwitem2 <--- g_NW	-.169
nwitem3 <--- g_NW	-.710
nwitem4 <--- g_NW	-.397
nwitem5 <--- g_NW	.079
nwitem6 <--- g_NW	-.019
lifesat <--- g_PW	.726
lifesat <--- g_WB	.340
lifesat <--- g_NW	-.127

**Model Fit Summary****CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	61.687	32	.001	1.928
Saturated model	66	.000	0		
Independence model	11	950.341	55	.000	17.279

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.935	.888	.968	.943	.967
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3B3: Hypothesis Two: Analysis Three

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
pwitem8 <--- g_WB	.591
pwitem4 <--- g_WB	.604
pwitem5 <--- g_WB	.493
pwitem6 <--- g_WB	.545
switem11 <--- g_WB	.474
switem2 <--- g_WB	.568
switem3 <--- g_WB	.449
switem4 <--- g_WB	.574
switem5 <--- g_WB	.466
switem6 <--- g_WB	.529
switem8 <--- g_WB	.555
switem9 <--- g_WB	.607
nwitem7 <--- g_WB	.447
nwitem2 <--- g_WB	.575
nwitem3 <--- g_WB	.449
nwitem4 <--- g_WB	.461
nwitem5 <--- g_WB	.475
nwitem6 <--- g_WB	.374
pwitem8 <--- g_PW	-.154
pwitem4 <--- g_PW	-.201
pwitem5 <--- g_PW	-.556
pwitem6 <--- g_PW	-.471
nwitem7 <--- g_NW	-.632
nwitem2 <--- g_NW	-.523
nwitem3 <--- g_NW	-.659
nwitem4 <--- g_NW	-.713
nwitem5 <--- g_NW	-.438
nwitem6 <--- g_NW	-.359
swsat <--- g_PW	.175
swsat <--- g_WB	.713
swsat <--- g_NW	.072

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	242.426	139	.000	1.744
Saturated model	190	.000	0		
Independence model	19	1484.067	171	.000	8.679

##### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.837	.799	.923	.903	.921
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3B4: Hypothesis Two: Analysis Four

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
switem11 <--- g_WB	.433
switem2 <--- g_WB	.564
switem3 <--- g_WB	.464
switem4 <--- g_WB	.569
switem5 <--- g_WB	.470

	Estimate
switem6 <--- g_WB	.506
switem8 <--- g_WB	.574
switem9 <--- g_WB	.641
swsat <--- g_WB	.700

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	18	56.818	27	.001	2.104
Saturated model	45	.000	0		
Independence model	9	398.752	36	.000	11.076

##### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.858	.810	.920	.890	.918
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C1: Hypothesis Three: Analysis One

#### Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
mdtitem1 <--- MDT	.703
mdtitem2 <--- MDT	.623
mdtitem3 <--- MDT	.734
mdtitem4 <--- MDT	.764
mdtitem5 <--- MDT	.541
mdtitem6 <--- MDT	.291
mdtitem7 <--- MDT	.504
lifesat <--- MDT	.248

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	48.415	20	.000	2.421
Saturated model	44	.000	0		
Independence model	16	408.179	28	.000	14.578

##### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.881	.834	.927	.895	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C2: Hypothesis Three: Analysis Two

#### Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
perceived control <--- general cognitive buffers factor	.957
self esteem <--- general cognitive buffers factor	.845

			Estimate
optimism	<---	general cognitive buffers factor	.828
primpc	<---	perceived control	.648
sepc	<---	perceived control	.688
optitem1	<---	optimism	.770
optitem2	<---	optimism	.842
optitem3	<---	optimism	.818
relpc	<---	perceived control	.147
posSE	<---	self esteem	.943
negSE	<---	self esteem	.658

#### Model Fit Summary

#### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	18	43.176	18	.001	2.399
Saturated model	36	.000	0		
Independence model	8	632.397	28	.000	22.586

#### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.932	.894	.959	.935	.958
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C3: Hypothesis Three: Analysis Three

#### Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
perceived control	<---	general factor	.942
self esteem	<---	general factor	.850
optimism	<---	general factor	.820
primpc	<---	perceived control	.694
sepc	<---	perceived control	.649
optitem1	<---	optimism	.770
optitem2	<---	optimism	.843
optitem3	<---	optimism	.819
posSE	<---	self esteem	.947
negSE	<---	self esteem	.658

#### Model Fit Summary

#### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	13.775	13	.390	1.060
Saturated model	28	.000	0		
Independence model	7	598.245	21	.000	28.488

#### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.977	.963	.999	.998	.999
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C4: Hypothesis Three: Analysis Four

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
peritem3 <--- extraversion	.655
peritem1 <--- extraversion	.783
peritem4 <--- emotional stability	.766
peritem2 <--- emotional stability	.671
lifesat <--- extraversion	.183
lifesat <--- emotional stability	.448

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	9	56.119	6	.000	9.353
Saturated model	15	.000	0		
Independence model	5	213.402	10	.000	21.340

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.737	.562	.758	.589	.754
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C5: Hypothesis Three: Analysis Five

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
peritem4 <--- emotional stability	.761
peritem2 <--- emotional stability	.673
lifesat <--- emotional stability	.482

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	5	.010	1	.921	.010
Saturated model	6	.000	0		
Independence model	3	92.901	3	.000	30.967

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	1.000	1.000	1.011	1.033	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C6: Hypothesis Three: Analysis Six

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
general factor	<--- emotional stability	.639
general factor	<--- lifeev	-.165
perceived control	<--- general factor	.865
self esteem	<--- general factor	.934
optimism	<--- general factor	.785
primpc	<--- perceived control	.696
secpc	<--- perceived control	.641
optitem1	<--- optimism	.767
optitem2	<--- optimism	.837
optitem3	<--- optimism	.819
posSE	<--- self esteem	.917
negSE	<--- self esteem	.652
peritem4	<--- emotional stability	.768
peritem2	<--- emotional stability	.671
lifesat	<--- emotional stability	.154
lifesat	<--- general factor	.471
lifesat	<--- lifeev	-.055

#### Model Fit Summary

##### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	85.343	41	.000	2.082
Saturated model	66	.000	0		
Independence model	11	861.487	55	.000	15.663

#### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.901	.867	.946	.926	.945
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

### 3C7: Hypothesis Three: Analysis Seven

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
general factor	<--- emotional stability	.667
perceived control	<--- general factor	.864
self esteem	<--- general factor	.941
optimism	<--- general factor	.789
primpc	<--- perceived control	.701
secpc	<--- perceived control	.645
optitem1	<--- optimism	.770
optitem2	<--- optimism	.838
optitem3	<--- optimism	.823
posSE	<--- self esteem	.916
negSE	<--- self esteem	.657
peritem4	<--- emotional stability	.765
peritem2	<--- emotional stability	.672
lifesat	<--- general factor	.483
lifesat	<--- emotional stability	.159

**Model Fit Summary****CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	22	63.483	33	.001	1.924
Saturated model	55	.000	0		
Independence model	10	832.883	45	.000	18.509

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.924	.896	.962	.947	.961
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

**3C8: Hypothesis Three: Analysis Eight****Standardized Regression Weights: (Group number 1 - Default model)**

	Estimate
general factor <--- emotional stability	.667
perceived control <--- general factor	.890
self esteem <--- general factor	.904
optimism <--- general factor	.817
primpc <--- perceived control	.693
secpc <--- perceived control	.650
optitem1 <--- optimism	.768
optitem2 <--- optimism	.837
optitem3 <--- optimism	.825
posSE <--- self esteem	.922
negSE <--- self esteem	.657
peritem4 <--- emotional stability	.761
peritem2 <--- emotional stability	.673
swsat <--- emotional stability	.190
swsat <--- general factor	.290

**Model Fit Summary****CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	22	59.094	33	.003	1.791
Saturated model	55	.000	0		
Independence model	10	792.273	45	.000	17.606

**Baseline Comparisons**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.925	.898	.966	.952	.965
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000