

Development and Validation of a Mental Wellbeing Scale in Singapore

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With a total number of 3400 participants, a sequence of four studies in two waves of data collection, the present study identified the conceptualization and construction of a mental wellbeing scale in a modern Asian multi-ethnic community-Singapore. Study 1 consisted a series of interviews (N = 351), surveys (N = 161) and focus group discussions (N = 59) to examine the popular conceptualization and manifestation of the construct of mental wellbeing in Singapore. The multi-ethnic inputs were then categorized into popular categories to construct a prototype of the Singapore Mental Wellbeing (SMWEB) Scale. With a nationally representative sample of 741 participants, Study 2 found the internal reliability ($\alpha = .962$, 30 items) and a strong construct validity of the SMWEB. EFA and CFA confirmed a five dimensional structure of the SMWEB: Asian Self-esteem, Social Intelligence, Emotional Intelligence, Resilience and Cognitive Efficacy. Each dimension is internally coherent and culturally meaningful. With an additional nationally representative sample of 2091 participants, Study 3 constructed a short form of the SMWEB, the SMWEB-S with high internal reliability ($\alpha = .932$, 16 items) and strong construct validity. Using Sample 2 and the SMWEB-S, Study 4 further validated the SMWEB as a measure of mental wellbeing by testing two theoretical models: the multi-dimensional model of mental wellbeing and the two factor model of mental wellbeing versus mental disorders. Excellent fit indices were found with both models. Further, the SMWEB-S showed significant construct validity by significantly predicting the culturally sanctioned goal pursuits: personal income and education attainment.

Keywords: Mental Wellbeing; Psychological Wellbeing

Introduction

Definition of Mental Wellbeing and Its Assessment

The concept of mental wellbeing has experienced a rapid revival (Hefferson, & Boniwell, 2011; Kaneman, Diener, & Schwartz, 1999; Seligman, 2002). The evolutionary change of the definition (Bradburn, 1969; Keyes, 2005; Ryff, 1989, Ryff, & Singer, 1998) and measurement (Diener, Wirtz, Tov et al., 2009; Ryff, 1989) is evident in the official definitions of health and mental health in international and national health service agencies (see for instance, US Department of Health and Human Services/USDHSS, 1999; World Health Organization, 2007). World Health Organization (WHO) (2007, 2010) defines mental health no longer as the state of being free from mental illness (WHO, 1948) but as that which enable the individual to live her life to its fullest (Keyes & Annas, 2009), to actualize one's growth potential (Vitterso, 2004) and to experience happiness and satisfaction along the way (Kaneman, Diener, & Schwartz, 1999, Keyes, 2002; Ryan & Deci, 2001; Seligman, 2002). Furthermore, mental wellbeing is now understood as an integral process in its own right, independent of mental illness (Bradburn, 1969; Jahoda, 1958; Ryff & Keyes, 1995). Mental wellbeing is more than happiness (Ryff, 1989; Ryff & Singer, 1989); it involves the concept of growth towards optimal de-

velopment (Ryan & Deci, 2001; Waterman, 1993)—flourishing (Keyes & Haidt, 2002; Keyes & Annas, 2009) and resilience—thriving even in times of difficulty (Block J. H. & Block J., 1980; Carver, 1998; Hefferson & Boniwell, 2011).

Healthy functioning of the individual (Valliant, 2000) in different cultural contexts might be expressed in the ways that are considered most conducive for optimal development for most members in the population (Bryant & Veroff, 1982; Campfield, 2006). These beliefs and expectations of optimal development are defined by the world views and values (Christopher, 1999) prevalent in the cultural community (Campbell, Converse, & Rodgers, 1976; Ryff & Singer, 1989). It follows that in different cultural communities; there might be a different set of expected attitudes and behaviors of living that defines healthy functions and happiness (Christopher, 1999; Suh & Diener, 2002; Tov & Diener, 2009). Assessment of mental wellbeing of the population in any cultural community needs to take into consideration its cultural expectations and using instruments constructed on the normative expectations of the community (Tennant, Hiller, Fishwick et al., 2007; Mental Health Ireland, 2008, USDHSS, 1999).

Mental wellbeing has been seen as a worldwide concern (WHO, 2007) as evidenced in the increasing interest in various countries to promote mental health of its citizenry (Mental

Health Ireland, 2008; Diner, Wirtz, Tov et al., 2010; Tennant, Hiller, Fishwick et al., 2007). Countries where the predominant cultures differ significantly from those in countries where the assessment tools originated need to develop their own assessment tools based on the popular conception and manifestations of healthy mental functioning.

The present article reports the development and validation of the Singapore Mental Wellbeing Scale (SMWEB) in a multi-ethnic but predominantly Chinese (74% of the general population; 13 % Malays, 9.2 % of Indians and around 3% others; Singapore Census Bureau, 2010) modern industrialized city-state of Singapore (Department of Statistics, Singapore, 2010).

Four studies are reported in the present article: Study 1 identified the conceptualization and manifestations of mental wellbeing in Singapore to form a prototype of the Singapore Mental Wellbeing Scale (SMWEB). Study 2 using a nationally representative sample ($N = 741$) to validate the SMWEB by identifying its internal structure and its construct validity (Cronbach & Meel, 1955). Study 3 constructed a short form of the SMWEB (SMWEB-S) with items selected to maintain its internal structure and meaningful dimensions for use in population level surveys. With a larger nationally representative sample ($N = 2091$), Study 4 further conducted convergent and discriminant validation (Campbell & Fiske, 1959) of the SMWEB-S by differentiating it from mental illness symptoms assessed by the depression and anxiety symptoms of the General Health Questionnaire (Goldberg & Williams, 1988) and by confirming its validity with the concurrent measure of World Health Organization's Mental Wellbeing measure (WHO, 2010). Study 4 further identified the SMWEB-S' concurrent validity on the common goals pursued by Singaporeans, education attainment and personal income.

Study 1: Conceptualization and Manifestation of Mental Wellbeing in Singapore

This study consisted of several phases, with sequential use of in-depth interviews, surveys and focus group discussions to identify the conceptualization and manifestations of the concept of mental wellbeing in Singapore (Bowling, Gabriel, Dykes et al., 2003). We then used the resulting item pool to construct a prototype of the Singapore Mental Wellbeing Scale (SMWEB).

Phase 1: In-depth interview to identify conceptualization and manifestation of mental wellbeing.

Participants:

351 respondents, 142 male and 226 female Singaporeans, age ranged from 15 to 56 (Mean 22.9, $sd = 5.9$). Participants were selected randomly at various places in Singapore such as restaurants, university and polytechnic canteens and classes, community clubs, libraries, as well as through personal contacts. All participants were Asians and 91% of them were Chinese, the rest were Indians (3%) and Malays (6%).

Procedure:

Participants were presented the following open-ended questions and were encouraged to give as many responses and as freely as possible:

When you think of "wellbeing", what are the feelings or thoughts that come to your mind?

What do you think mental health is? "What do you see in a person that led you to think that he/she is mentally healthy?"

Results & Data Analysis:

The content of their responses were coded for mental health

related statements by two Singaporean Chinese psychology graduates. The statements were then classified into larger categories for coding. Reliability between the two coders was Cohen's (1960) $Kappa = .87$.

Test Construction:

The qualitative responses obtained from the interview results were then examined and selected to be included into the prototype wellbeing scale with the following selection criteria:

1) The top 30 items with the highest frequency among the responses. Thirty is a number selected because from our past experiences for constructing instrument for large scale screening, respondents lose interest and concentration once the instrument is longer than 30. Furthermore, 30 is the number of elements in a data set that is required for using parametric statistics.

2) Those that fell around the borderline of the top thirty were carefully evaluated in terms of their cultural relevance and literature support.

Thirty items were selected into the prototype scale. Reviewing the thirty items, the researchers were satisfied with their meaning and cultural relevance. The selected items were used to construct a prototype scale of the Singapore Mental Wellbeing Scale (SMWEB) (see **Table 1**).

Phase 2 Face validity of the Prototype SMWEB with multi-ethnic inputs

Since the item pool were generated from largely Chinese Singaporean respondents. Additional samples were recruited to test the face validity of the prototype and to solicit inputs for additional items, especially from the non-Chinese Singaporean participants.

Participants:

Two samples were recruited for assessing the face validity of the SMWEB prototype. Sample one consisted of 161 Singaporean university students (72 males and 89 females; mean age 22, $sd = 1.5$ years). This multi-ethnic sample consisted of 1.3% Malays, 1.3% Indians and 97% Chinese.

Sample two consisted of participants attending a series of focus group discussions.

56 male and female Singaporean residents aged 18 - 69 years were recruited from the general population through convenience sampling. Among them, there were 25 Chinese, 16 Malays and 15 Indians. We conducted 3 groups in English, and 1 each in Malay, Indian and Mandarin. Each group was made of 8 to 9 members of one of the national ethnic groups: Malays, Chinese and Indians.

Procedure:

Two types of procedures were used to identify face and content validity: Individual ratings and focus group discussions.

Rating for Face Validity: For sample one, the SMWEB-prototype was shown to the participants individually, they were asked to independently rate whether they she/he agree that the item measures the concept of mental wellbeing (Fink, 1995). The percentage of agreement that the item is a measure of wellbeing in Singapore was calculated and recorded.

Focus Group Discussion on Content Validity: Focus group discussions were conducted with sample two. There were 8 or 9 members in each group and was facilitated by a research assistant of the same ethnic background speaking the same languages as the participants. Focus group participants were asked to comment on the items of SMWEB and to make suggestions of additional items for meanings of mental wellbeing that were not included in the prototype.

Table 1.
Percentage of agreement for face validity and descriptive statistics of items in the Singapore Mental Wellbeing Scale.

Items	Percentage of "yes" answers (N = 161)	First Wave (N = 741)		Second Wave (N = 2091)	
		M	SD	M	SD
1. I feel balanced in myself.	95%	3.88	0.75	7.49	1.36
2. I am appreciative of life.	75%	3.99	0.73	7.81	1.11
3. I accept what life has to offer.	65%	3.93	0.72	7.66	1.24
4. I am able to accept myself.	80%	4.09	0.69	7.85	1.05
5. I am able to think clearly.	90%	4.13	0.69	7.9	0.99
6. I am able to think rationally.	90%	4.09	0.72	7.86	0.99
7. I am able to make good decisions.	55%	3.99	0.70	7.75	1.03
8. I am able to accept reality.	95%	4.06	0.69	7.78	1.12
9. I appreciate my own self-worth.	50%	4.07	0.7	7.86	0.99
10. I am able to make friends.	75%	4.18	0.72	7.97	1.01
11. I am able to keep company with others.	45%	4.13	0.69	7.91	1
12. I am able to seek help when needed.	50%	3.96	0.76	7.61	1.25
13. I am able to offer help to others.	45%	4.06	0.72	7.71	1.18
14. I am able to maintain a good family life.	50%	4.14	0.71	7.91	1.08
15. I feel peace.	45%	4.03	0.75	7.66	1.28
16. I seek for self-development/growth/cultivation.	40%	3.87	0.74	7.53	1.37
17. I am alert.	50%	4.04	0.67	7.76	1.06
18. I am not depressed.	90%	3.83	0.86	7.57	1.52
19. I am optimistic about the future.	60%	3.88	0.77	7.33	1.46
20. I am able to cope with life's challenges.	75%	3.93	0.69	7.47	1.26
21. I am resilient under life's crises.	65%	3.81	0.70	7.33	1.32
22. I stand firm under stress.	85%	3.84	0.73	7.39	1.31
23. I am spiritual.	35%	3.76	0.85	7.25	1.52
24. I am content.	65%	3.92	0.74	7.57	1.29
25. I am happy.	70%	4.01	0.77	7.71	1.19
26. I am calm.	60%	3.95	0.73	7.65	1.15
27. I have the strong support of my family and friends.	45%	4.12	0.76	7.89	1.11
28. I can handle most situations.	60%	3.94	0.71	7.51	1.22
29. I am able to contribute positively to the world.	65%	3.84	0.76	7.26	1.38
30. I believe that life is a continued development of myself.	55%	4.06	0.72	7.61	1.22

Note: Scale for wave 1; Scale for wave 2.

Results:

Results obtained from sample 1 are presented in **Table 1**. All items received more than 40% endorsement from the participants. No disagreement was voiced from focus group participants and no additional items were suggested. High positive endorsement was expressed by the non-Chinese participants as well. No additional items were added. No items were deleted.

Study 2: Internal Structure and Construct Validity of Singapore Mental Wellbeing Scale

The results of study 1 supported the hypothesis that the SMWEB shows appropriate content and face validity as a measure of mental wellbeing across different ethnic samples in Singapore. We then explored the psychometric property, inter-

nal structure and construct validity of the SMWEB with a nationally representative sample of Singaporean adults across a wide range of ages (18 - 84).

Method

Participants and Sampling Procedure:

A nationally representative sample of 741 was recruited to participate in the study. The participants were obtained from the Department of Statistics Sampling Frame (Singapore Statistics Department, 2010). The sample was made of participants from a wide range of educational attainment, from no formal education to university graduates, with the average education around upper secondary school. The sample ages ranged from 18 to 69, with a mean of 43.80 years and sd of 13 years. We obtained national census statistics from the Department of Statistics of Singapore (2010) and conducted geographical stratification of the different housing zones in Singapore to closely resemble the ethnic distribution in the national census data. The resultant sample (N = 741) were also checked for ethnic distribution and it is evenly represented according to Singapore national census 2010. **Table 2** presents the gender and ethnic distribution of the sample.

Procedures:

Participants were recruited by household interviews whereby the researchers randomly approached households in the geographic zones from the Department of Statistics sample of Singapore.

Materials:

In addition to the SMWEB, the following instruments were used to form the nomological net (Cronbach & Meel, 1955) for construct validation: 1) for concurrent validity: a measure of the same psychological construct—mental wellbeing but constructed for use by Scot Health in the United Kingdom: the Warwick Mental Wellbeing Scale (WEMWEBS) (Tennant et al., 2007), 2) for convergent and discriminant validity: measures of positive affects (PA) (Watson, Clark, & Tellegen, 1988) and subjective wellbeing—Life Satisfaction Scale (LSS) (Diener, Emmons, Larsen, & Griffith, 1985) and measures of negative affect (NA) (Watson et al., 1988) and depression measured by the abbreviated version of Asian Adolescent Depression Scale (AADS) (Woo, Chang, Fung, Koh, Kee, & Seah, 2004). Also used as a convergent measure of happiness, we calculated a Hedonic Balance (HB) indicator by calculating the algebraic difference between PA and NA.

Data Analysis:

Table 2.
Gender and ethnic distribution of First and Second Wave samples.

		First Wave (N = 741)		Second Wave (N = 2091)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Gender	Male	343	46.3	599	28.6
	Female	398	53.7	1492	71.3
Ethnicity	Chinese	516	69.6	1453	69.4
	Malay	115	15.5	340	16.3
	Indian/ other	110	14.8	298	14.3

We first calculated the internal reliability, categorized the items into meaningful domains and identified the internal structure of the SMWEB scale. Exploratory factor analyses (CFA) followed by confirmatory factor analyses (EFA) were conducted to identify the best fit model of the SMWEB. Through correlation analyses, we identified the concurrent, convergent and discriminant validity of the SMWEB.

Results

Internal structure and reliability of SMWEB:

Internal reliability: We found the internal reliability of the SMWEB to be a high $\alpha = .962$.

Structure of Mental Wellbeing

A single latent construct

Repeated factor analytic attempts have derived the conclusion that there is one underlying construct of SMWEB. The high internal reliability suggesting that the items were highly intercorrelated with each other supporting the hypothesis that there might be a singular underlying construct that defines mental wellbeing in Singapore. This result is similar to that of Tennant et al (2007) with the WMWEB that there is one latent construct of mental wellbeing.

However, inspecting the scree plot and Eigen values of the principal component extraction results, suggested that the scale may be divided into several subcomponents, as has been found in other mental health (Campton, Smith, Cornish & Quell, 1996) and wellbeing (Heady, Kelley & Wearing, 1993) measures. Scree plots showed a shape L-shaped curve with one big component accounting for 48% of the variance. There were four factors with Eigen values larger than 1; the second, third and fourth component accounted for 4.5%, 4.19% and 3.5 % of variance respectively. **Figure 1** presents the Scree plot and **Table 3** presents of the Singapore Mental Wellbeing Scale after Principal Component Analysis.

Since there were 11 items loaded on the first factor, we further subjected the first factor to a second CFA. With extraction of two factors and Promax rotation, a two factor solution was found. The two factors showed items bearing the meaning of emotional intelligence and resilience and were highly inter-correlated ($r = .73$). **Table 4** presents the results.

The other three factors showed meanings of self-acceptance and self-cultivation, realistic and effective cognitive processes

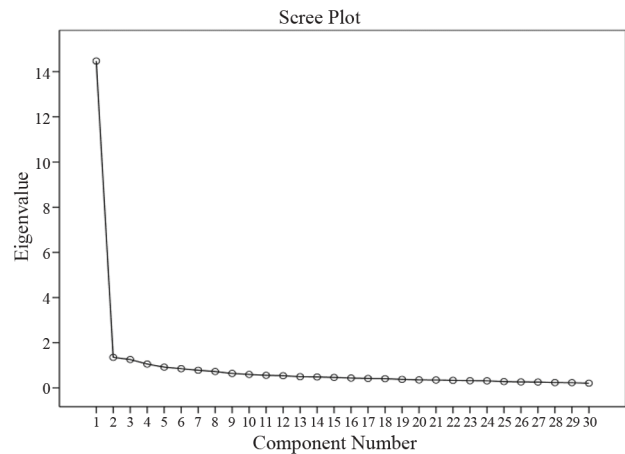


Figure 1.
Scree plot of the Singapore Mental Wellbeing Scale first wave data.

Table 3.
Principle component analysis of the Singapore Mental Wellbeing Scale.

Items	Component			
	1	2	3	4
26. I am calm.	0.78	0.63	0.51	0.51
20. I am able to cope with life s challenges.	0.77	0.52	0.61	0.53
25. I am happy.	0.77	0.71	0.46	0.52
22. I stand firm under stress	0.77	0.45	0.56	0.45
24. I am content.	0.77	0.61	0.38	0.47
21. I am resilient under life s crises.	0.75	0.5	0.56	0.48
19. I am optimistic about the future.	0.75	0.58	0.59	0.57
28. I can handle most situations.	0.74	0.48	0.58	0.57
30. I believe that life is a continued development of myself.	0.73	0.46	0.59	0.55
29. am able to contribute positively to the world (e.g. environment, work, community)	0.69	0.43	0.62	0.55
27. I have the strong support of my family and friends.	0.66	0.52	0.38	0.62
23. I am spiritual.	0.59	0.33	0.32	0.4
18. I am not depressed.	0.55	0.52	0.44	0.49
2. I am appreciative of life.	0.54	0.86	0.52	0.49
3. I accept what life has to offer.	0.53	0.82	0.46	0.48
4. I am able to accept myself.	0.53	0.78	0.67	0.53
1. I feel balanced in myself	0.52	0.72	0.46	0.43
8. I am able to accept reality.	0.53	0.7	0.64	0.58
15. I feel peace.	0.65	0.66	0.64	0.56
5. I am able to think clearly.	0.52	0.61	0.83	0.5
6. I am able to think rationally.	0.53	0.6	0.81	0.54
7. I am able to make good decisions.	0.55	0.55	0.77	0.54
17. I am alert.	0.6	0.38	0.73	0.52
9. I appreciate my own self-worth.	0.56	0.64	0.72	0.58
16. I seek for self- development/growth/cultivation	0.6	0.33	0.61	0.44
11. I am able to keep company with others.	0.53	0.46	0.52	0.87
10. I am able to make friends.	0.5	0.47	0.55	0.83
13. I am able to offer help to others.	0.6	0.5	0.54	0.79
12. I am able to seek help when needed.	0.48	0.45	0.44	0.74
14. I am able to maintain a good family life.	0.64	0.59	0.55	0.69

Table 4.
Principal component with Promax rotation and Keiser normalization of factor 1 of the Singapore Mental Wellbeing Scale.

	Component	
	1	2
20. I am able to cope with life s challenges.	0.84	0.58
21. I am resilient under life s crises.	0.8	0.57
30. I believe that life is a continued development of myself.	0.78	0.55
19. I am optimistic about the future.	0.78	0.63
22. I stand firm under stress	0.77	0.59
28. I can handle most situations.	0.77	0.61
29. I am able to contribute positively to the world (e.g. environment, work, community)	0.75	0.54
24. I am content.	0.59	0.87
25. I am happy.	0.66	0.85
26. I am calm.	0.68	0.82
27. I have the strong support of my family and friends.	0.61	0.67
23. I am spiritual.	0.44	0.66

and social intelligence. Therefore, a five factor hypothesis was proposed to account for the first wave data. Based on the theoretical content of the items, the list was sorted into a five factor structure with more conceptual clarity than the CFA results: Asian self-esteem, Emotional intelligence, Resilience and Cognitive efficacy.

Five Meaningful Dimensions

Literature on the construct of mental wellbeing identified in North America suggested multiple meaningful dimensions (Ryff & Singer, 1989; Keyes, 2002). Inspection of the item content of the SMWEB Scale and the CFA results, the items were conceptually grouped into five meaning dimensions: Cognitive efficiency (CE), Asian Self-esteem (ASE), Social intelligence (SI), Emotional intelligence (EI) and Resilience (RE).

Meaningful Dimensions:

Asian Self-Esteem (ASE): refers to the acceptance of the self and the belief that the self is a dynamic process that is continuously evolving through growth and learning. ASE consists of the following items (see **Table 5**).

Social Intelligence (SI): refers to the knowledge and competence in developing good social relationships and interdependence with others. SI consists of the following items (see **Table 6**).

Emotional Intelligence (EI): refers to the intelligence of being able to recognize and manage one’s own emotions to achieve happiness and peace. EI consists of the following items (see **Table 7**).

Resilience (RI): refers to the psychological processes that enable the individual to withstand negative impact in life and to thrive in the face of difficulty. RI consists of the following items

Table 5.
Descriptive statistics of Asian self-esteem.

Items	Mean	SD
4. I am able to accept myself.	4.09	0.69
9. I appreciate my own self-worth.	4.07	0.70
16. I seek for self-development/growth/cultivation.	3.87	0.74
29. am able to contribute positively to the world (e.g. environment, work, community)	3.84	0.76
30. I believe that life is a continued development of myself.	4.06	0.72

Note: Internal Reliability $\alpha = .834$.

Table 6.
Items and descriptive statistics of social intelligence (N = 741, Likert Scale 1 - 5).

Items	Mean	SD
10. I am able to make friends.	4.18	0.72
11. I am able to keep company with others.	4.13	0.69
12. I am able to seek help when needed.	3.96	0.76
13. I am able to offer help to others.	4.06	0.72
14. I am able to maintain a good family life.	4.14	0.71
28. I can handle most situations.	3.94	0.71

Note: Internal Reliability $\alpha = .866$.

(see **Table 8**).

Cognitive Efficacy (CE): refers to the cognitive skills and competence the individual possesses that enables the individual to perceive the world in a realistic way and to be able to make effective decisions in order to manage one’s life events. CE consists of the following items (see **Table 9**).

Each dimension showed high internal reliability suggesting that the dimensions are internal coherent. These dimensions were also inter-correlated with each other, suggesting that they

Table 7.
Items and descriptive statistics of emotional intelligence (N = 741, Likert Scale 1 - 5).

Items	Mean	SD
1. I feel balanced in myself.	3.88	0.75
2. I am appreciative of life.	3.99	0.73
3. I accept what life has to offer.	3.93	0.72
8. I am able to accept reality.	4.06	0.69
15. I feel peace.	4.03	0.75
18. I am not depressed.	3.83	0.86
23. I am spiritual.	3.76	0.85
24. I am content.	3.92	0.74
25. I am happy.	4.01	0.77
26. I am calm.	3.95	0.73

Note: Internal Reliability $\alpha = .90$.

Table 8.
Items and descriptive statistics of resilience (N = 741, Likert Scale 1 - 5).

Items	Mean	SD
19. I am optimistic about the future.	3.88	0.77
20. I am able to cope with life s challenges.	3.93	0.69
21. I am resilient under life s crises.	3.81	0.70
22. I stand firm under stress	3.84	0.73
27. I have the strong support of my family and friends.	3.94	0.71

Note: Internal reliability $\alpha = .84$.

Table 9.
Items and descriptive statistics of cognitive efficacy (N = 741, Likert Scale 1 - 5).

Items	Mean	SD
5. I am able to think clearly.	4.13	0.69
6. I am able to think rationally.	4.09	0.72
7. I am able to make good decisions.	3.99	0.7
17. I am alert.	4.04	0.67

Note: Internal Reliability $\alpha = .850$.

might belong to the same underlying latent construct. **Table 10** presents the dimensions and internal reliability of each dimension. **Table 11** presents the inter-correlations between dimensions and the SMWEB.

Confirmatory factor analysis (CFA) was conducted to assess the fit of the data to the hypothesized five factor model using AMOS 19. Following latest convention on selecting fit indices (Kenny, 2012), we presented the χ^2 , normed fit index (NFI), Comparative fit index (CFI) and root mean square error of approximation (RSMEA). We found a reasonably good fit with the following indices: $\chi^2 = 14.7$, $df = 5$, $p < .01$, $NFI = .981$, $CFI = .985$, $RSMEA = .122$. However, when errors were allowed to correlate between ASE and CE, which reduced the RMSEA to .000, the fit is nearly perfect, $\chi^2 = 3.161$, $df = 4$, $p = .531$; $NFI = .99$, $CFI = 1.00$. The dimensions were shown to have standardized regress weights of .81 (ASE), .88 (SI), .91 (EI), .83 (RI) & .88 (CE) on the underlying latent construct. Therefore, the model of five manifested dimensions with one latent variable model is strongly supported (see **Figure 2**).

Construct validity

Concurrent validity: It can be seen that the SMWEB correlated positively with the WEMWEBS with high magnitude. Supporting concurrent validity, SMWEB and WMWEB showed shared variance of around 38% ($r = .88$, $p < .000$) suggesting that

Table 10. Descriptive statistics of the SMWEB meaningful dimensions in the First and Second Waves.

	First Wave			Second Wave		
	M	SD	α	M	SD	α
ASE	3.97	0.55	0.83	7.62	0.96	0.86
SI	4.08	0.55	0.87	7.83	0.86	0.87
EI	3.96	0.56	0.9	7.62	0.96	0.96
RI	3.86	0.58	0.84	7.4	1.12	0.96
CE	4.09	0.59	0.85	7.82	0.88	0.89

Note: SMWEB: Singapore Mental Wellbeing Scale; ASE: Asian Self Esteem; SI, Social Intelligence, EI: Emotional Intelligence; RI: Resilience CE: Cognitive Efficacy, First Wave scale 1 - 5; second Wave scale 1 - 9.

Table 11. Correlation Matrix of the SMWEB and its meaningful dimensions.

	SMWEB	ASE	SI	EI	RI	CE
SMWEB	1					
ASE	0.82**	1				
SI	0.89**	0.76**	1			
EI	0.92**	0.72**	0.77**	1		
RI	0.93**	0.78**	0.74**	0.82**	1	
CE	0.80**	0.70**	0.69**	0.72**	0.67**	1
M	3.99	3.45	4.08	3.96	3.9	4.09
SD	0.51	0.48	0.55	0.56	0.55	0.59

Note: SMWEB: Singapore Mental Wellbeing Scale; ASE: Asian Self Esteem; SI, Social Intelligence, EI: Emotional Intelligence; RI: Resilience CE: Cognitive Efficacy. **significance <0.01.

SWMEB measures a highly similar construct of WEM-WEB.

Convergent and discriminant validity: As a mental wellbeing measure, it is expected that the SMWEB should correlate positively with measures of happiness, assessed as Hedonic Balance (HB) and life satisfaction (LS); it should correlate negatively with negative affects (NA) and depression. However, as mentioned earlier, mental wellbeing is a conceptually larger construct from happiness (Keyes & Haidt, 2002; Ryff, 1989; Vitterso, 2004, Waterman, 1993). So it should correlate with the happiness measures positively but moderately compared to its correlation with the WMWEBS (Campbell & Fiske, 1955). This was supported by its positive but moderate correlations with HB and LS Scales, and moderate negative correlations with NA and the Asian Adolescent Depression (AAD) Scales. Table presents the descriptive statistics and correlation matrix of SMWEB, WMWEB and other validating variables (See **Table 12** for the correlations).

We therefore have sufficient support that the SMWEB is indeed a measure of mental wellbeing, which is a larger concept than happiness.

Study 3: Construction of a Short Form of the Singapore Mental Wellbeing Scale (SMWEB-S)

We aimed to use the SMWEB for population level screening

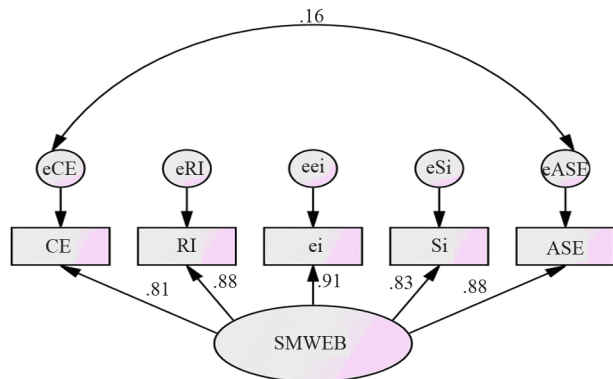


Figure 2. Five dimension model CFA long form.

Table 12. Correlation matrix between the SMWEB and validation variables in the First Wave sample.

	SWLS	AADS	PA	HB	SMWB	WEMWEBS
SWLS	1					
AADS	-0.38**	1				
PA	0.37**	-0.23**	1			
HB	0.42**	-0.48**	0.78**	1		
SMWB	0.64**	-0.43**	0.43**	0.52**	1	
WEMWEBS	0.72**	-0.46**	0.46**	0.54**	0.81**	1
M	3.57	2.12	3.50	1.75	3.98	3.82
SD	0.72	0.67	0.82	1.08	0.50	0.59
α	0.88	0.94	0.96	0.89	0.79	0.85

Note: **significance <0.01.

for health promotion purposes. To facilitate the ease of use for screening purposes at the population, Study 3 aimed to construct a short form of the SMWEB. The short form should retain the internal structure and meaningfulness of the SMWEB in order to be a viable alternative for assessing the same underlying constructs—mental wellbeing.

Method

Participants:

Two samples were used for this purpose. Sample 1 consisted of the sample used in Study 2 (N = 741). A new and larger nationally representative sample (N = 2091) was recruited with the same geographical sampling method for the construction of a short form and for further validation in Study 4.

Procedure:

The following steps were conducted to construct and validate the short form of SMWEB Scale:

Item selection and validation: We carefully review the items within each dimension and selected the items that showed high item total correlations and delete the ones that are redundant with other items in the same dimension. The selected items were then forming a prototype short scale.

Identifying internal reliability and meaningful structure: We then assessed the internal reliability of each new dimension and the new prototype.

Comparing mean differences with the SMWEB: We com-

pared the item mean of the short prototype against the item mean of SMWEB in both samples, until we identify a prototype that showed no quantitative difference from the 30 item original and show high internal reliability of the whole scale as well as acceptable internal reliability of each dimension.

Results

After 21 iterations we finally identified a short form of the SMWEB that fulfilled these criteria. Table presents the items selected for the Singapore Mental Wellbeing-Short Form (SMWEB-S).

The selected items and their conceptual groupings are presented in **Table 13**. The internal reliability of the short form SMWEB-S (16 items; $\alpha = .932$, $p < .000$) is high and acceptable. The short form SMWEB-S showed no significant item mean differences from that of the original form in either sample: Paired t-tests showed $t = 1.658$, $df = 740$, $p = .097$ for Sample 1 and $t = 6.196$, $df = 2090$, $p = .00$ for Sample 2, though significant but with mean differences = .019, $r = .986$, the differences were negligible and acceptable. The SMWEB-S showed the same concurrent, discriminant and convergent validity as the SMWEB (See **Table 14**). The SMWEB-S was also found to be highly correlated with the SMWEB in both the first sample (N = 741) and the second sample (N = 2091). **Tables 15-17** present the results.

CFA showed that the best fit model is the five factor model

Table 13.
Item Means and standard deviation of the Singapore Mental Wellbeing Scale-Short Form (SMWEB-S).

Items	First Wave (N = 741)		Second Wave (N = 1029)	
	M	SD	M	SD
S2. I am appreciative of life.	3.99	0.73	7.81	1.11
S19. I am optimistic about the future.	3.88	0.77	7.33	1.46
S9. I appreciate my own self-worth.	4.07	0.70	7.86	0.99
S13. I am able to offer help to others.	4.06	0.72	7.71	1.17
S16. I seek for self- development/growth/cultivation	3.87	0.74	7.53	1.37
S7. I am able to make good decisions.	3.99	0.70	7.75	1.03
S5. I am able to think clearly.	4.13	0.69	7.9	1.00
S20. I am able to cope with life s challenges.	3.93	0.69	7.47	1.26
S25. I am happy.	4.01	0.77	7.71	1.20
S26. I am calm.	3.95	0.73	7.65	1.15
S23. I am spiritual.	3.76	0.85	7.25	1.52
S24. I am content.	3.92	0.74	7.57	1.29
S10. I am able to make friends.	4.18	0.72	7.97	1.01
S8. I am able to accept reality.	4.06	0.69	7.78	1.12
S4. I am able to accept myself.	4.09	0.69	7.85	1.05
S12. I am able to seek help when needed.	3.96	0.76	7.61	1.25
<i>Alpha</i>	0.93		0.94	

Table 14. Items and descriptive statistics of the SMWEB-s meaningful dimensions in First and Second Waves samples.

	First Wave (N = 741)			Second Wave (N = 2091)		
	M	SD	α	M	SD	α
ASES			0.83			.86
9. I appreciate my own self-worth.	4.07	0.7		7.86	0.99	
30. I believe that life is a continued development of myself.	4.06	0.72		7.61	1.22	
4. I am able to accept myself.	4.09	0.69		7.85	1.05	
SIS			0.87			0.87
13. I am able to offer help to others.	4.06	0.72		7.71	1.18	
10. I am able to make friends.	4.18	0.12		7.97	1.01	
12. I am able to seek help when needed.	3.96	0.76		7.61	1.25	
EIS			0.90			0.96
2. I am appreciative of life.	3.99	0.73		7.81	1.11	
25. I am happy.	4.01	0.77		7.71	1.19	
26. I am calm.	3.95	0.73		7.65	1.15	
23. I am spiritual.	3.76	0.85		7.25	1.52	
24. I am content.	3.92	0.74		7.57	1.29	
8. I am able to accept reality.	4.06	0.69		7.78	1.12	
RIS			0.84			0.96
19. I am optimistic about the future.	3.88	0.77		7.33	1.46	
20. I am able to cope with life s challenges.	3.93	0.69		7.47	1.26	
CES			0.85			0.89
7. I am able to make good decisions.	3.99	0.70		7.75	1.03	
5. I am able to think clearly.	4.13	0.69		7.90	0.99	

SMWEB: Singapore Mental Wellbeing Scale; ASE: Asian Self Esteem; SI, Social Intelligence, EI: Emotional Intelligence; RI: Resilience CE: Cognitive Efficacy.

Table 15. Correlation of Singapore Mental Wellbeing-Short Form (SMWEB-S) with the five meaningful dimensions in singapore mental wellbeing scale (SMWEB) (first wave N = 741, on liker scale 1 - 5).

	SMWEB-S	ASE	SI	EI	RI	CE
SMWEB-S	1					
ASE	0.82**	1				
SI	0.89**	0.72**	1			
EI	0.92**	0.72**	0.78**	1		
RI	0.93**	0.76**	0.77**	0.87**	1	
CE	0.80**	0.71**	0.69**	0.72**	0.70**	1
Mean	3.99	3.45	4.08	3.96	3.9	4.09
SD	0.51	0.48	0.55	0.56	0.55	0.59

Note: NB: SMWEB-S: Singapore Mental Wellbeing Scale-Short Form; ASE: Asian Self Esteem; SI, Social Intelligence, EI: Emotional Intelligence; RI: Resilience; CE: Cognitive Efficacy. ** $p < .000$.

Table 16.

Correlation of the Singapore mental wellbeing scale-short form (SMWEB-S) and the five meaningful domains within the SMWEB-S (second wave N = 2091, on likert scale 1 - 9).

	SMWEBS	ASES	SIS	EIS	RIS	CES
SMWEBS	1					
ASES	0.90**	1				
SIS	0.82**	0.82**	1			
EIS	0.93**	0.76**	0.67**	1		
RIS	0.83**	0.68**	0.62**	0.72**	1	
CES	0.76**	0.73**	0.58**	0.68**	0.55**	1
Mean	7.67	7.81	7.76	7.63	7.4	7.82
SD	0.87	0.89	0.97	0.97	1.26	0.93

Note: SMWEBS: Singapore Mental Wellbeing Scale-short form; ASES: Domain 1 of Singapore Mental Wellbeing Scale-short form; SIS: Domain 2 of Singapore Mental Wellbeing Scale-short form; EIS: Domain 3 of Singapore Mental Wellbeing Scale-short form; RIS: Domain 4 of Singapore Mental Wellbeing Scale-short form; CES: Domain 5 of Singapore Mental Wellbeing Scale –short form; ** $p < .01$.

Table 17.

Convergent validity and discriminant validity of Singapore mental wellbeing scale-short form (SMWEB-S) (first wave N = 741, likert scale 1 - 5).

	SMWEB-S	SWLS	AADS	PA	NA
SMWEB-S	1				
SWLS	0.64**	1			
AADS	-0.41**	-0.38**	1		
PA	0.41**	0.37**	-0.23**	1	
NA	-0.30**	-0.22**	0.48**	-0.04	1
Mean	3.99	3.58	2.12	3.5	1.75
SD	0.51	0.72	0.67	0.82	0.68

Note: SMWEB-S: Singapore Mental Wellbeing Scale-short form; SWLS: Subjective wellbeing measured as Life Satisfaction; AADS: Asian Adolescent (Is it Adolescent or Adult as the study conducted among adult Singaporeans?) Depression Scale; PA: Positive Affects; NA: Negative Affects. ** $p < .01$

as shown in **Figure 3**. With the following fit indices: $\chi^2 = 3.036$, $df = 2$, $p = .219$, NFI = 1.00, CFI = 1.00, RMSEA = .016. Because of the correlated errors between ASES and CES, and between EI and RI, we further tested two alternative models: The Keyes three-factor-model (Keyes, 2002) with ASES and CES combined to form a Positive Self Function (PSF) factor and EIS and RIS combined to form an Emotional Wellbeing (EIW) factor. CFA showed that the model is underidentified. A four factor model, with ASES and CES combined into PSF but EIS and RIS remained as two separate factors, was tested; CFA showed a reasonable fit but the $\chi^2 = 15.491$; $df = 1$, $p = .000$, RMSEA = .084, suggesting a poorer fit than the five-factor-model of $\chi^2 = 3.036$, $df = 2$, $p = .219$ and RMSEA = .016. We chose the five-factor-model as the best model of SMWEB-S.

Study 4: Differentiating Mental Wellbeing from Mental Disorder

Three questions were addressed in Study 4 as further validation of the SMWEB-S: Its concurrent validity with the World Health Organization Mental Wellbeing, the WHO-5 (WHOM), developed by the World Health Organization (2010), its dis-

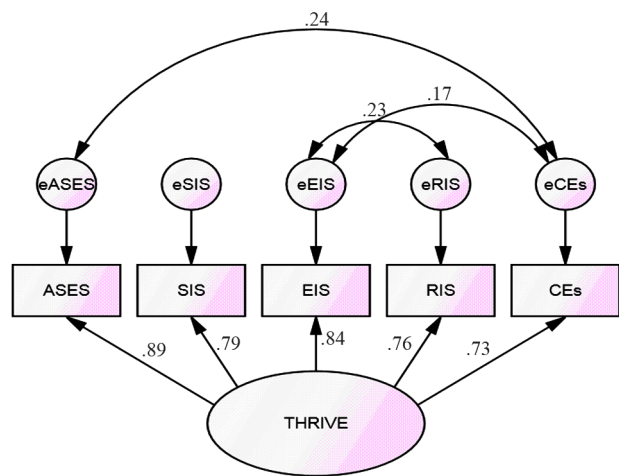


Figure 3. Five dimension model CFA sample 2 short form.

criminant validity with mental illness indicators and a potential ceiling effect. The SMWEB-S was constructed on the concep-

tualization and expected manifestation of mental health of Singaporeans. We intended to further validate the construct validity of the SMWEB-S by analyzing its relationship with the pan-culturally applicable measure of mental wellbeing, the WHOM.

Research literature on mental health (for instance, Jahoda, 1958) has suggested that mental wellbeing should be seen as a concept in its own right rather than as the opposite end of mental illness. Keyes, Shmotkin & Ryff (2002) had empirically shown that measures of mental wellbeing are either orthogonal or moderately correlated with measures of mental illness. In Study 4 we aimed to further test the validity of the SMWEB-S as a measure of mental wellbeing by analyzing its relationship with measures of mental disorders.

Mental wellbeing is defined as a construct that reflects personal striving (Carver, 1998; Emmons, 1986: p. 199); personal striving is guided by the life goals (Oishi, 2001) set by the individual. In Singapore, financial earning and education attainment are commonly shared goals. We therefore chose personal income and education attainment as criterion measures of SMWEB-S to test its predictive validity.

The SMWEB constructed in the first wave of validation used a response scale of 1 to 5. The frequency distribution in Study 2 showed a negatively skewed distribution with over 50% of the scores fell between 4 and 5 (see **Figure 4**).

Because of a concern about a potential ceiling effect, a longer Likert scale response format from 1 to 9 was used in this current study to provide more response options for the respondents.

Method

Participants:

A nationally representative sample of 2091 participants was recruited for the present study. Table presents the demographic characteristics of the sample.

Procedure and Materials

The following instruments were used:

Singapore Mental Wellbeing Scale-Short Form (SMWEB-S): The 16 item Singapore Mental Wellbeing-Short Form (SMWEB-S) was used. In the current study, the response format was the following: 1---2---3---4---5---6---7---8---9, with 5 as the neutral point, 1 being never, and 9 being always.

General Health Questionnaire (GHQ): The general health questionnaire has been widely used as a screening tool for mental disorders. It consists of self-reported symptoms of af-

fective disturbance—anxiety and depression and social dysfunctions (Goldberg & Williams, 1988). The version we used for the current validation is the GHQ12 (12 items) each item is rated on a four point scale (less than usual to much more than usual). For the current sample, the GHQ showed an internal reliability $\alpha = .717$ for the entire scale, $\alpha = .838$ for the anxiety and depression subscale, and $\alpha = .894$ for the social dysfunction subscale. They are moderate but acceptable.

World Health Organization Mental Health Measure (WHOM): The world Health Organization published a short mental health measure, which consists of five items that tap the definition of mental health by WHO. The internal reliability of the WHOM for the present sample was found to be $\alpha = .915$.

Information on Personal Income and Level of Education Attainment

Personal income and level of education attainment were assessed as part of the demographic information of respondents. Personal income was rated in reported dollar value of monthly income and categorized into a rating scale of 0 - 10; education attainment was rated on the level of formal education attained and also rated into a scale of 0 - 10.

Data Analysis:

Constructing subscale scores and Correlation matrix: The item mean of each subscales of each measurement used was first calculated. This resulted in a smaller number of input variables for large scale analysis. A correlation matrix was constructed to present the intercorrelations, internal reliability and descriptive statistics of the variables entered into analyses.

Exploratory (EFA) and Confirmatory Factor Analyses (CFA): Exploratory factor analysis of the constructed sub-scale scores was conducted to see whether the subscale scores fell into the same groupings as the scales they originated from.

Predictive Validity through Regressions: Finally, to further validate the construct validity of mental wellbeing as positive functions, the hypothesized outcome variables, individual income and education attainment were regressed on SMWEB-S to explore the predictive validity of SMWEB-S.

Results

With the extended response format of 1 to 9, more response options are afforded in order to reduce the ceiling effect. Though the mean remains high at 7.66 (median = 8.00), only 5% of the responses are at the ceiling of 9, which is at the chance level. There is obviously a positive bias in responses to wellbeing measures (see **Figure 5**) (Diener, Wirtz, & Tov,

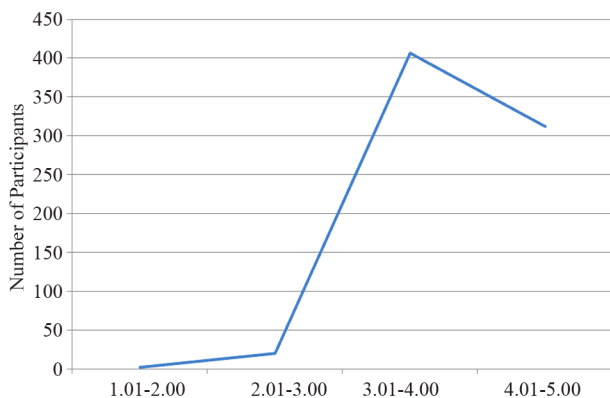


Figure 4. Sample distribution of SMWEB, first wave.

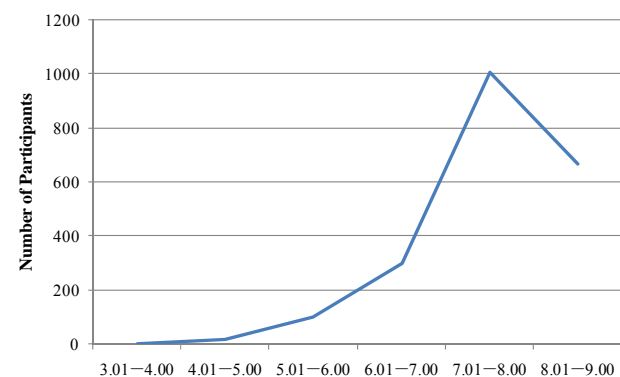


Figure 5. Sample distribution of SMWEB, second wave.

2010). This result again is similar to Tennen et al.'s (2007) finding in Scotland.

SMWEB-S, SMWEB and WHOM were found to be highly correlated suggesting concurrent validity of SMWEB-S as a measure of mental wellbeing (Table 18).

Correlation matrix showed that the components of GHQ, depression and anxiety are negatively correlated with components of SMWEB-S, while social dysfunction was moderately related to SMWEB-S. Social dysfunction was conceptually similar to positive functions measured by SMWEB-S; so it was dropped from further analysis. Table 19 presents the correlation results.

A series of factor analysis on SMWEB-S dimensions and GHQ anxiety and depression dimensions consistently showed that the wellbeing dimensions and GHQ dimensions fell into two categories. Tables 20-22 present the CFA results.

A one latent variable model with the five dimensions of SMWEB-S and WHOM as the sixth manifested dimension (see Figure 6) was tested and found to have an excellent fit: $\chi^2 = 8.50$, $df = 4$, $p = .075$, $NFI = .999$, $CFI = .999$, $RSMEA = .023$, supporting the hypothesis that SMWEB-S and the WHOM jointly tap the same underlying latent construct mental wellbeing, which we labeled Thriving.

Using components of SMWEB-S and the depression and anxiety components of GHQ, a two factor model of mental wellbeing and mental disorder showed excellent fit (see Figure

Table 18. Correlation of the Singapore Mental Wellbeing-Short Form (SMWEB-S), with the Singapore Mental Wellbeing Scale (SMWEB) and Scot Health Mental Wellbeing Scale (MWEB) (first wave N = 741, Likert Scale 1 - 5).

	SMWEB-S	WEMWEBS	SMWEB
SMWEB-S	1		
WEMWB	0.80**	1	
SMWEB	0.98**	0.81**	1
Mean	3.99	3.82	3.98
SD	0.51	0.6	0.5

Note: NB: SMWEB-S: Singapore Mental Wellbeing Scale-Short Form; WEMWEBS: The Warwick-Edingburg Mental Wellbeing Scale; SMWEB: Singapore Mental Wellbeing Scale ($p < .001$).

Table 19. Correlations between GHQ components of anxiety and depression and dimensions of SMWEB-S.

	AX	DP	ASE	SI	EI	RI	CE
AX	1						
DP	0.62**	1					
ASE	-0.20**	-0.24**	1				
SI	-0.16**	-0.20**	0.71**	1			
EI	-0.26**	-0.28**	0.75**	0.67**	1		
RI	-0.24**	-0.30**	0.68**	0.62**	0.72**	1	
CE	-0.20**	-0.22**	0.72**	0.58**	0.68**	0.55**	1

Note: ** $p < .01$.

7). We found a reasonably good fit: $\chi^2 = 66.54$, $df = 10$, $p = .000$, $NFI = .999$, $CFI = .999$, $RSMEA = .052$. This result supported the claim by Ryff (1989) and Keyes et al., (2002) that mental wellbeing and mental disorder are two moderately related but independent constructs. They negatively correlated with each

Table 20. Factor loadings for exploratory factor analysis with varimax rotation of Singapore Mental Health Scale, world health organization mental health scale and global health questionnaire and social desirability scale.

	Component	
	1	2
SMWEB	0.89	
WHO	0.88	0.18
GHQ		0.98

Note: SMWEB: Singapore Mental Wellbeing Scale; WHO: World Health Organization Mental Health Scale; GHQ: General Health Questionnaire.

Table 21. Factor loading for exploratory factor analysis of components of GHQ, anxiety and depressions and dimensions of Singapore Mental Wellbeing Scale-Short Form.

	Component	
	1	2
AX		0.81
DP		0.78
ASES	0.88	
SIS	0.81	
EIS	0.89	
RIS	0.83	
CES	0.80	

Note: Factor loadings that were larger than 0.4 were shown in the table.

Table 22. Factor loadings of WHO mental wellbeing measure (WHO5) and dimensions of SMWEB-S and anxiety and depression of GHQ.

	Component	
	1	2
AX		0.81
DP		0.78
ASES	0.87	
SIS	0.80	
EIS	0.89	
RIS	0.83	
CES	0.79	
WHO5	0.66	

Note: Factor loadings that were larger than 0.4 were shown in the table.

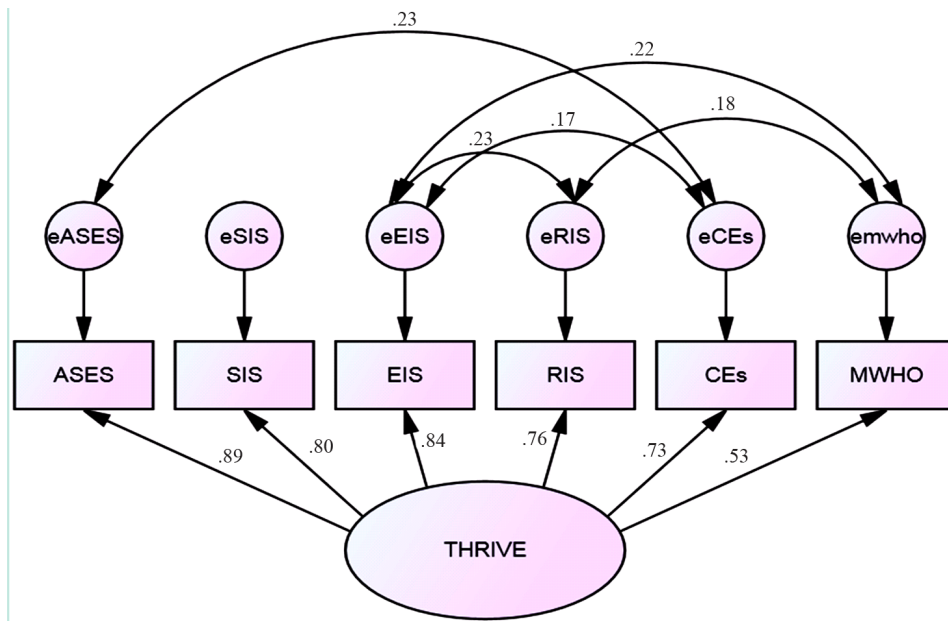


Figure 6. Six dimension model CFA of mental wellbeing-thrive.

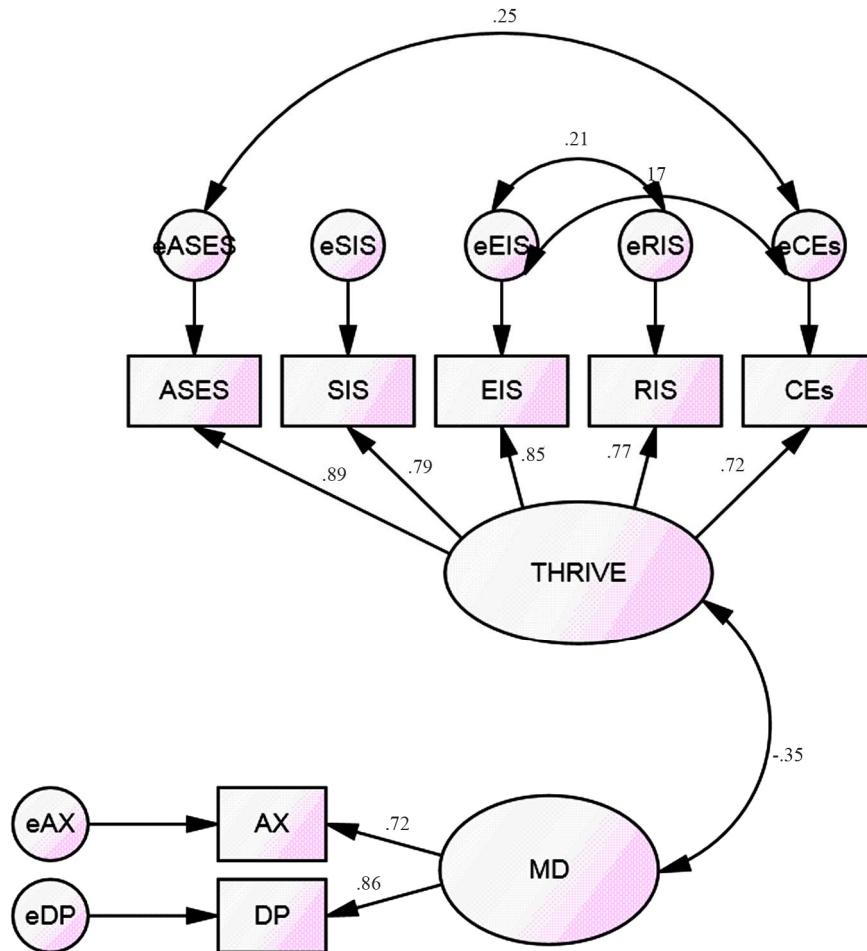


Figure 7. Two factors model of complete mental health.

other in moderate magnitude ($r = -.35, p < .00$). **Figure 7** graphically represents the two factor model.

We added the WHOM into the model and found an excellent fit ($\chi^2 = 99.69, df = 14, p = .00, NFI = .989, CFI = .993, RSMEA = .054$). However, the correlation between the mental health model, which consists of components of SMWEB-S and WHOM, and the mental disorder factor remains the same at $r = -.36$, meaning that WHOM did not add additional variance to the relationship between SMWEB-S and mental disorder. These results further reinforce the construct validity of the SMWEB-S as a measure of mental wellbeing, not merely a measure of absence of mental illness.

Predictive validity of the SMWEB-S was supported by results of regression analysis. We found that SMWEB-S predicts individual income ($\beta = .043, R^2 = .002, p = .000$) and education attainment ($\beta = .101, R^2 = .014, p = .000$) with statistical significance, suggesting that the SMWEB-S is tapping an underlying construct that facilitates the pursuit of culturally sanctioned goals.

Discussion

The concept of mental wellbeing refers to a set of psychological processes that promote positive outcomes in a person's life (Hefferon & Boniwell, 2010). This psychological construct has been found in contemporary research literature to be independent of mental disorder (Ryff, 1989; Keyes & Annas, 2009). As underlying psychological processes, mental wellbeing's manifestations would be shaped and conditioned by the prevailing values and social ecological conditions of the environment (Christopher, 1999; Ryff, 1989; Tov & Diener, 2010). We used a series of qualitative interviews, focus group discussions to identify the meanings and manifestations of mental wellbeing in Singapore, which included not only emotional happiness but also positive functions that are believed to be healthy. Using these results we constructed the Singapore Mental Wellbeing Scale and carefully selected items to construct the short form of the SMWEB (SMWEB-S). The SMWEB-S concurred with other measures of mental wellbeing: the UK constructed Warwick Mental Wellbeing Scale (WMWBS) and the pan-cultural mental wellbeing Scale of the World Health Organization (WHOM). It moderately correlated with hedonic balance and life satisfaction (happiness) and negatively correlated with negative affects and depression. This pattern of correlations supports the conclusion that the SMWEB-S taps an underlying process of mental wellbeing which goes beyond merely happiness but also include positive functions of the individual.

The high internal reliability suggests that the SMWEB-S taps a single underlying construct. Examining the meaning of the items, we found that they could be grouped into five meaningful groups: Asian Self-Esteem consists of items that denote self-acceptance and self-development, Emotional Intelligence refers to feeling calm and peaceful, content. Social Intelligence refers to interdependence and reciprocal support with others. Resilience refers feeling in control and being able to cope with challenges in life, and finally Cognitive Efficacy refers to being vigilant, being able to think realistically and rationally. These five groups of items formed five sub-subscales or dimensions of the SMWEB-S. Each dimension is internally coherent and can stand on its own; however the five facets are highly correlated suggesting that they are different manifestations of the

same underlying process. This was confirmed with CFA analyses.

However, we found that SMWEB-S only moderately correlated with GHQ's anxiety and depression symptoms. We hypothesized a two factor model with anxiety and depression being the manifested variables of mental disorder (MD), and dimensions of SMWEB as manifested variables of the mental wellbeing. CFA found an excellent fit. We added WHOM to the model as one of the manifested variables of mental wellbeing-thriving. The fit is nearly perfect, suggesting that mental wellbeing and mental disorders are two separate factors reflecting two separate underlying psychological processes.

Finally, if SMWEB-S is indeed a measure of positive mental functions, it should predict success in life, especially success measured in terms of popular and culturally sanctioned goal pursuit (Tov & Diener, 2009). In Singapore, these culturally sanctioned measures of success are personal income and educational attainment. The SMWEB-S was found to concur significantly with personal income and education. These results further support that the SMWEB-S taps a culturally sanctioned construct of thriving, growth and development that goes beyond merely happiness.

Conclusion

In conclusion, the SMWEB is a measure of positive psychological functions in Singapore. It taps a construct that goes beyond happiness to include positive functions of the individual's psychological systems. Mental wellbeing in Singapore is a single construct with five meaningful dimensions that reflect Singaporeans' understanding of wellbeing: being peaceful and content, valuing the self in continued growth; reciprocating interdependence, thinking realistically and rationally, and being strong and resilient. These five meaningful dimensions reflect the values and beliefs of the contemporary Asian culture. The Singapore Mental Wellbeing Scale is therefore empirically valid and culturally meaningful as a screening tool for mental wellbeing in Singapore.

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