PSYMPATHIC : Jurnal Ilmiah Psikologi
Vol. 9, No. 1, 2022: 1-16
eISSN: 2502-2903, pISSN: 2356-3591
DOI: 10.15575/psy.v9i1.10710

Internal Structure Evaluation on the Indonesian Version of Psychological Well-Being Scales

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Abstract

The purpose of this research is to examine the internal structure of the Indonesian version of the Psychological Well-Being Scales (PWBS). This is a quantitative and cross-sectional research with the convenience sampling method used to obtain data from 1,337 students. The validity of the PWBS internal structure is evaluated using confirmatory factor analysis, exploratory structural equation modeling (ESEM), and composite reliability. The results showed that the Indonesian version of the 42-item PWBS and the 18-item PWBS do not have a satisfactory factor structure and internal consistency. Instead, it has few items that can accurately measure the concept of psychological well-being and are less able to represent the concept proposed by Ryff (1989). However, this research is not the only evidence that the Indonesian version of the PWBS cannot be used to measure psychological well-being.

Keywords: ESEM, psychological well-being, PWBS, reliability, factor structure

Abstrak

Penelitian ini bertujuan menguji struktur internal PWBS versi Indonesia. Digunakan metode penelitian kuantitatif dengan pendekatan *cross-sectional*. Partisipan sebanyak 1,337 mahasiswa yang direkrut dengan metode *convenience sampling*. Validitas struktur internal PWBS dievaluasi menggunakan analisis konfirmatori faktor, *exploratory structural equation modelling (ESEM)*, dan reliabilitas komposit. Hasil penelitian menemukan PWBS-42 item dan PWBS-18 item versi Indonesia tidak memiliki struktur faktor dan konsistensi internal memuaskan. PWBS versi Indonesia memiliki sedikit item yang dapat mengukur secara tepat konsep kesejahteraan psikologis pada sampel Indonesia. Temuan ini mengindikasikan PWBS versi Indonesia kurang dapat merepresentasikan konsep kesejahteraan psikologis yang dikemukakan Ryff (1989). Meskipun demikian, penelitian ini tidak dapat menjadi satu-satunya bukti bahwa PWBS versi Indonesia tidak dapat digunakan untuk mengukur kesejahteraan psikologis pada sampel Indonesia.

Kata kunci: ESEM, kesejahteraan psikologis, PWBS, reliabilitas, struktur faktor

Introduction

Psychological well-being is one of the most researched topics in recent years. Ryff (1989) first introduced a multifactorial concept that focuses on the positive psychological functioning of humans. It consists of six dimensions, namely (1) autonomy covering feelings of self-determination, independence, and freedom from social pressures, (2) environmental mastery including ability to regulate and monitor the environment, (3) self-development comprising of the drive to be continuously and openly exposed to life experiences to maximize one's potentials, (4) positive relations with others, such as having quality and satisfactory relationships with others marked by warmth, trust, empathy, and intimacy, (5) purpose in life including having meaningful goals, and (6) self-acceptance including the ability to accept diverse positive and negative aspects as well as one's past (Ryff, 1989, 2014; Ryff & Keyes, 1995; Ryff & Singer, 1996, 2008).

Ryff (1989) stated that a scale can measure psychological well-being. This is known as the psychological well-being scale, and its development starts with describing indicators using the six earlier mentioned dimensions and writing down 80 items with respect to each. These were further evaluated based on the contents of the statement, afterwards each dimension was left with 32

items. Meanwhile, those considered to have good content were then tested on 321 samples to differentiate between items that were either highly or lowly correlated. Finally, the best 20 items were selected for each dimension, amounting to 120. This is reported to have satisfactory reliability based on internal consistency testing and retesting at six-week intervals. The positive correlation between purposeful life and self-esteem and the negative relations with depression proves that the PWBS measures optimal psychological functioning (Ryff, 1989).

The 120-item PWBS has innumerable elements, and such measuring instruments cause participants to object to responding and even threaten to return the survey questionnaire (Marcus et al., 2007). Furthermore, it also extends the duration required for participants to complete a survey questionnaire, especially if it consists of several measuring instruments. This can cause the participants to experience fatigue, frustration, and boredom (Nagy, 2002; Papachristos, 2019). Ryff and Keyes (1995) decided to compile a brief version of the PWBS by selecting the best 18 items from the initial PWBS. However, it is reported to have a reliability coefficient of less than .7 (Ryff & Keyes, 1995). Ryff et al. (2007) then recompiled the 42-item PWBS derived from the more extended version.

Until now, PWS has been available in various language versions, including the Philippine version of the 42-item PWBS (Villarosa & Ganotice, 2018), English (Abbott et al., 2006), Indonesian (Mubarok & Miftahuddin, 2019), and Japanese (Sasaki et al., 2020). In addition to the 42-item PWBS (Ryff et al., 2007) and 18-item PWBS (Ryff & Keyes, 1995), some other research also proposed entirely different compositions such as the Japanese version of the 84-item PWBS (Kitamura et al., 2004), the Australian version of the 54-item PWBS (Burns & Machin, 2009), the Romanian version of the 44-item PWBS (Kállay & Rus, 2014), the Indonesian version of the 43-item PWBS (Revelia, 2019), the Colombian version of the 39-item PWBS (van Dierendonck et al., 2008), the Chinese version of the 33-item PWBS (Gao & McLellan, 2018), the Portuguese version of the 18-item PWBS (Fernandes et al., 2010), the Philippines version of the 18-item PWBS (Villarosa & Ganotice, 2018), and the Chinese version of the 18-item PWBS (Li, 2014).

Although PWBS has been available in various versions, previous studies discovered some contradictory results regarding its psychometric properties. This is because some research confirmed that it had a satisfactory factor structure in the form of six dimensions. For example, the Japanese version of the 84-item PWBS (Kitamura et al., 2004), the Romanian version of the 44-item PWBS (Kállay & Rus, 2014), the Swedish version of the 42-item PWBS (Lindfors et al., 2006), the English version of the 42-item PWBS (Abbott et al., 2010, 2006), and the Chinese version of the 33-item PWBS (Gao & McLellan, 2018). Meanwhile, the PWBS in several countries was reported to have an unsatisfactory factor structure. This includes the Australian version of the 54-item PWBS (Burns & Machin, 2009), the Philippine version of the 42-item PWBS (Villarosa & Ganotice, 2018), and the Colombian version of the 39-item PWBS (van Dierendonck et al., 2008). In Indonesia, certain contradictory results were also discovered because the 43-item PWBS has the best unidimensional factor structure (Revelia, 2019). According to Mubarok and Miftahuddin (2019), the 42-item PWBS with six dimensions has the best factor structure.

The previous contradictory findings led to the question concerning the best factor structure of the PWBS. This feature describes the dimensions of a measuring instrument that represents a group of items based on their conceptualization (Bandalos, 2018; Rust et al., 2021). It can also be tested using exploratory and confirmatory factor analyses. Some research suggested that if the measuring instrument is based on a strong conceptual theory, as proven by previous studies, confirmatory factor analysis is considered

more appropriate (Bandalos, 2018; Finch et al., 2016). Information about the factor structure can also be used to determine a measuring instrument's score (Bandalos, 2018). When this attribute is still in doubt, the score of the measurement results tends to be inaccurate. Meanwhile, 42-item PWBS and 18-item PWBS are often used to measure psychological well-being (Pelupessy et al., 2020; Prihandini & Boediman, 2019; Purnamasari et al., 2020; Yosita et al., 2022). This research examines the Indonesian version and factor structure of the 42 and 18-item PWBS. The findings are expected to be considered when measuring the psychological well-being of the Indonesian samples.

Referring to the conceptualization process (Ryff, 1989) and previous findings, the PWBS has a measurement model in the form of six factors, especially the 42-item (Abbott et al., 2010, 2006; Lindfors et al., 2006; Mubarok & Miftahuddin, 2019) and 18-item versions (Fernandes et al., 2010; Li, 2014; Villarosa & Ganotice, 2018). Irrespective of the fact that previous studies have confirmed this, some other research stated that certain PWBS items do not have a satisfactory loading factor when tested with confirmatory factor analysis (Abbott et al., 2010; Mubarok & Miftahuddin, 2019; Revelia, 2019; Villarosa & Ganotice, 2018). Some of them are slightly able to measure the conceptualized constructs. This is because some items overlap or measure other dimensions more accurately. With respect to the factor analysis approach, the evaluation of items that overlap or do not match the constructs can be observed from the cross-loading information. One of the analytical techniques that accommodates this problem is exploratory structural equation modeling (ESEM). This allows confirmatory and exploratory factor analysis (Asparouhov & Muthén, 2009). Marsh et al. (2014) further stated that ESEM is a confirmatory factor analysis technique that provides information about the loading factor of an item and its impact on certain dimensions.

The problem associated with quality PWBS psychometric properties is centered on factor structure and internal consistency. This was considered a source of valid evidence based on internal rather than factor structure (AERA, APA, & NCME, 2014). Previous research proved that PWBS has less stable internal consistency. This is because some others discovered it has satisfactory reliability (Gao & McLellan, 2018; Kállay & Rus, 2014; van Dierendonck et al., 2008). Meanwhile, in certain situations, it is presumed to be adequate (Cheng & Chan, 2005; Fernandes et al., 2010; Li, 2014; Lindfors et al., 2006; Villarosa & Ganotice, 2018). However, most previous studies tested the internal consistency of PWBS using the Cronbach Alpha coefficient, which was criticized for being the lower limit of the actual reliability (Peterson & Kim, 2013). One of the internal consistency tests considered to be better is composite reliability. It aims to test the internal consistency of the measurement model by considering the loading factor coefficient and variance error (Hair et al., 2014).

In general, this research aims to examine the internal structure of the Indonesian version of the PWBS. First, confirmatory factor analysis was conducted to evaluate the factor structure of the 42-item PWBS and the 18-item PWBS. Second, the ESEM model was tested to determine the loading factoring and cross-loading of the two measuring instruments, likewise the impact on internal consistency.

Methods

Research Design

This quantitative research adopted a cross-sectional approach. The selected participants are active students in various faculties at the University of Surabaya. Data was collected using the convenience sampling method, which involved meeting the participants after the learning process. Besides, their involvement was voluntary and without coercion. The participants were asked

to fill out a consent form and questionnaires presented through google using one ballpoint pen.

Research Instruments

Psychological Well-Being Scales (Ryff, 1989) consist of 42 items and six dimensions, namely (1) autonomy with 7 items, for example: I am confident in my opinions even if they are contrary to general agreement; (2) environmental mastery with 7 items, for example: Generally, I feel that I can control the situation I am in; (3) self-development with 7 items, for example: For me, life is a continuous process of learning, changing, and developing; (4) positive relations with others consisting of 7 items, for example: I know that I can trust my friends and they know they can trust me; (5) purpose in life with 7 items, for example: I like to make plans for the future and try to make them happen; and (6) self-acceptance with 7 items, for example: I like most aspects of my personality. It also uses six response options ranging from 1 (strongly disagree) to 6 (strongly agree).

According to the guidelines of the International Test Commission, the PWBS adaptation process is carried out through four stages (Hambleton, 2005). First, it is translated from English to Indonesian by two independent translators not part of the research team. Furthermore, the best translation for each item was selected. Second, the outcome of the Indonesian translation is checked for accuracy by two reviewers who are Psychology lecturers. They were asked to compare English and Indonesian items as well as offer suggestions for improvement. The reviewers' suggestions were used to improve the Indonesian version of the PWBS items. Third, it was re-translated into English by two independent translators different from the initial ones. Afterward, the English translation results were compared with the original version. Finally, the Indonesian version of the PWBS was tested on five participants to assess their understanding of each item.

Data Analysis Procedure

The Indonesian version of the PWBS was tested with the confirmatory factor analysis using the Mplus version 8.3 program (Muthén & Muthen, 2017) and a weighted least square mean and variance. The measurement procedures were designed to test the factor structure, especially the one-factor, six-factor correlation, and the ESEM models on the 42-item PWBS (Ryff, 1989) and 18-item PWBS (Ryff & Keyes, 1995). In the six-factor correlation model, each item only indicates one particular factor. The ESEM model is similar, although each item is also an indicator of other factors, as shown in Figure 1.

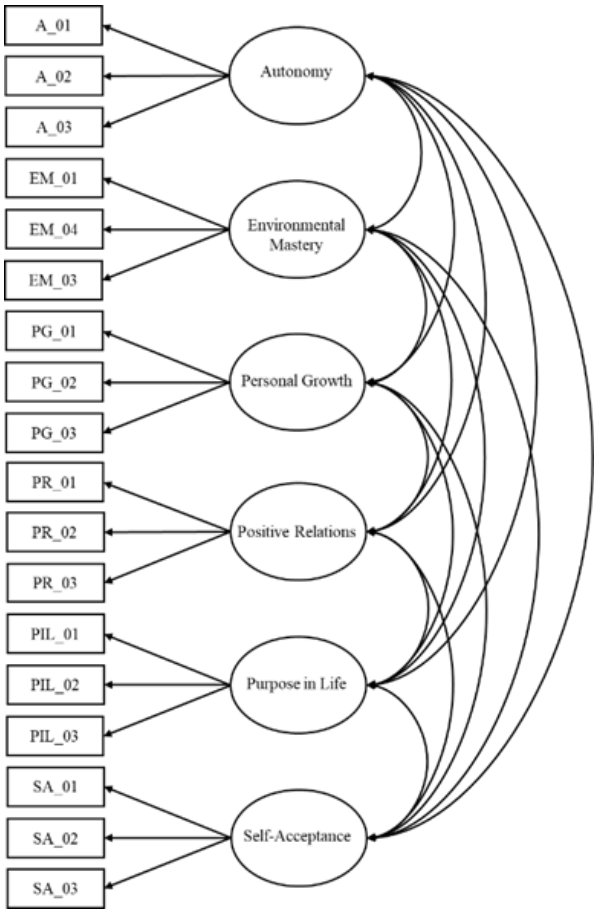

Figure 1. Six-factor correlation model : Conceptual of the Indonesian version of the PWBS measurement model

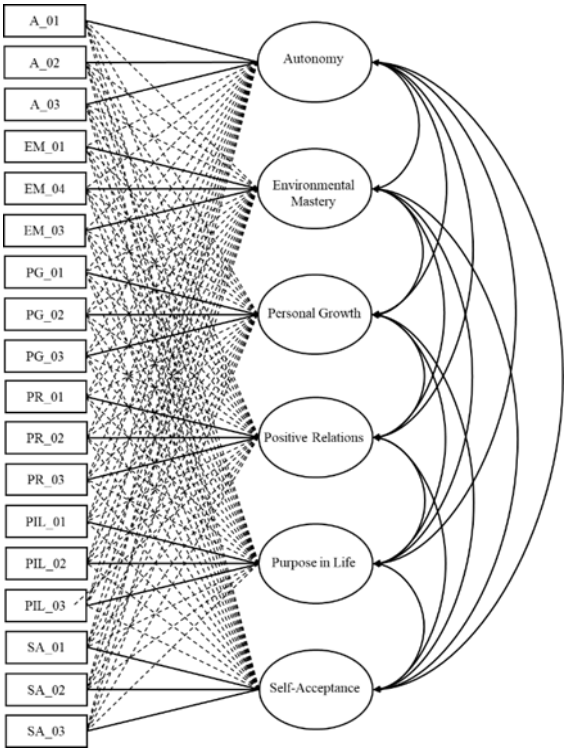

Figure 2. ESEM model : Six-factor correlation model: Conceptual of the Indonesian version of the PWBS measurement model

The measurement procedure was evaluated using several model fit indices. These include the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). CFI and TLI coefficients greater than or equal to .9 and that of RMSEA, less than .08, are used to prove that the measurement procedure has a model fit (Kline, 2014; van de Schoot et al., 2012). The reliability test employs the use of composite reliability calculations to evaluate the consistency of the measurement model. Based on Hair et al. (2014), a model with a reliability coefficient greater than .7 is stated to have satisfactory internal consistency.

Results and Discussion

The selected participants are 1,444 students from five faculties at the University of Surabaya. Before the acquired data was further processed, an outlier test was carried out using the Mahalanobis analysis, provided that it had a p-value of less than .001, considered an outlier (Tabachnick & Fidell, 2007). As a result, 107 participants are considered outliers. Therefore, the analyzed participants are 1337 consisting of 712 (53.3%) women and 625 (46.7%) men aged between 16 to 26 years (M = 19.585, SD = 1.323). These were mostly students in the final year at the Faculties of Psychology, Engineering, Law, Economics and Business, and Pharmacy. Majorities are from Javanese (47.9%) and Chinese (29.3%) ethnic backgrounds, as well as reside in big cities (62.9%).

Table 1
Characteristics of Participants

Demographic	Frequency	Percentage
Gender		
Female	712	53.3
Male	625	46.7
Faculty		
Psychology	550	41.1
Technique	238	17.8
Law	220	16.5
Economics and Business	179	13.4
Pharmacy	150	11.2
Level		
First-year	421	31.5
Second year	372	27.8
Third year	446	33.4
Fourth year or more	098	07.4
Tribe/ethnic		
Javanese	641	47.9
Chinese	392	29.3
Balinese	069	05.2
Bataknese	032	02.4
Bugisnese	017	01.3
Dayaknese	017	01.3
Banjarnese	014	01.0
Minahasanese	013	01.0
Mix	042	03.1
Other	100	07.5
Domicile		
Big city	841	62.9
Small town	437	32.7
Village	059	04.4

Table 2
Model Fit Index in Indonesian Version of PWBS

	Model Fit Index						
	χ^2	Df	χ^2/df	CFI	TLI	RMSEA	90% CI
One factor (42)	20218.665	819	24.687	.453	.425	.133	.132 - .135
One factor (18)	4153.588	135	30.767	.551	.491	.149	.145 - .153
Six factor (42)	19648.681	804	24.439	.469	.431	.132	.131 - .134
Six factor (18)	3772.422	120	31.437	.592	.479	.151	.147 - .155
ESEM (42)	2250.298	624	3.606	.954	.937	.044	.042 - .046
ESEM (18)	85.497	49	1.745	.996	.989	.024	.015 - .032

Table 3
Loading factor and Composite Reliability in Indonesian Version of PWBS

Dimension	42-item PWBS		18-item PWBS	
	Loading factor	Reliability	Loading factor	Reliability
Autonomy	-.055 - .694	.560	-.137 - .638	.463
Environmental mastery	-.233 - .543	.478	-.256 - .615	.290
Personal growth	-.062 - .667	.609	-.465 - .571	.574
Positive relations	-.422 - .569	.686	-.487 - .625	.570
Purpose in life	-.084 - .633	.695	-.036 - .265	.060
Self-acceptance	-.133 - .691	.700	-.403 - .609	.481

The confirmatory factor analysis results shown in Table 2 illustrate that the one-factor and six-factor correlation models of the Indonesian version of the 42-item PWBS and 18-item PWBS do not have a satisfactory model fit. This is because the one-factor and six-factor correlation models of PWBS have CFI and TLI coefficients less than .9 while that of RMSEA is greater than .8. On the contrary, the ESEM model has an adequate model of fit according to the data acquired from the 42-item PWBS and 18-item PWBS. Specifically, the ESEM model generated from the 18-item PWBS has a PIL_41 item drop due to its negative residual variance, thereby leading to the analysis of only 17 items.

The test of the six-factor correlation model on the Indonesian version of the PWBS shows that both the 42-item and 18-item do not yet have satisfactory internal consistency. This is because the composite reliability coefficient of the six dimensions is still less than .7 (Hair et al., 2014). However, the positive relations, purpose in life, and self-acceptance dimensions of the 42-item PWBS have a composite reliability coefficient that is equal to .7. Additionally, only 33 of the 42 items and 13 of the 18 items have a loading factor that is greater than .4, as shown in Tables 4.

The ESEM model test results show that only a few items in the Indonesian version of 42-item PWBS have a satisfactory loading factor of≥ .40 (Watkins, 2018). As summarized in Table 6, 16 items (A_01, A_07, A_25, A_37, EM_02, PG_03, PG_09, PG_33, PR_04, PR_28, PIL_05, PIL_23, SA_06, SA_12, SA_24, and SA_42) have a loading factor that corresponds to the dimensions. The remaining seven items (A_13, EM_02, PG_15, PG_39, PR_16, PIL_11, and SA_18) have a loading factor that corresponds with the other dimensions, while that of 19 items is less than .4. The Indonesian version of the 18-item PWBS is also similar as indicated in Table 7 where only nine items, namely A_25, A_37, PG_09, PG_33, PR_10, PR_34, PIL_05, SA_06, and SA_24 have a loading factor that aligns with their dimensions. Two of them, PG_39 and SA_30, correspond with another dimension, and the remaining seven have a low loading factor.

Table 4
Loading factor for Indonesian Version of 42-Item PWBS and 18-Item PWBS

Item	Version	
	42	18
Autonomy		
1. *I am not afraid to voice my opinions even when it contradicts that of most people*	.694	-
7. *My decisions are usually not influenced by other people's thought*	.407	-
13. *I tend to worry about what other people think of me (R)*	.055	-
19. *I tend to be influenced by people with strong opinions (R)*	.254	.137
25. *I am confident in my opinions even if it contradicts the general agreement*	.500	.503
31. *It is difficult for me to voice my own opinion on controversial matters (R)*	.241	-
37. *I judge myself by what I consider important, not by the values that other people consider relevant*	.540	.638
Environmental mastery		
2. *Generally, I feel that I can control the situation I am in*	.479	.590
8. *The daily demands often make me feel discouraged*	-.223	-.256
14. *I do not feel like I fit in with the people and community around me (R)*	.543	-
20. *I am quite able to manage my daily responsibilities*	.495	.615
26. *I often feel overburdened by my responsibilities (R)*	.323	-
32. *I have trouble managing my life in a way that satisfies me (R)*	.426	-
38. *I have been able to build my house and live according to what I like*	.267	-
Personal growth		
3. *I am not interested in activities that will broaden my perspective (R)*	.536	-
9. *I think it is important to have new experiences that challenge the way I think about myself and the world*	.512	.571
15. *When I think about it, I realize that I have not developed into a better human being (R)*	-.062	-
21. *I feel that as a person, I have improved a lot over time*	.667	-
27. *I feel uncomfortable in new situations that require me to change the way I work that has become my habit (R)*	.174	-
33. *For me, life is a continuous process of learning, changing, and growing*	.581	.631
39. *I no longer try to make major improvements or changes in my life for a long time (R)*	.489	.465
Positive relations		
4. *Most people think of me as a person full of love and affection*	.432	-
10. *Maintaining close relationships is difficult and frustrating for me (R)*	.502	.546
16. *I often feel lonely because I have few friends to share ideas with*	.493	-
22. *I enjoy private and reciprocal conversations with family members or friends*	.506	-
28. *People describe me as a person who likes to share and is willing to spend time with others (R)*	.484	.487
34. *I do not experience many warm and trusting relationships with other people (R)*	.569	.625
40. *I know that I can trust my friends, and they know I am trustworthy*	.422	-
Purpose in life		
5. *I live my life on a daily and do not think much about the future (R)*	.612	.265
11. *I have direction and purpose in life*	.633	-
17. *My daily activities often seem trivial and unimportant to me (R)*	.615	-
23. *I have no definite idea of what I will achieve in life (R)*	.566	-
29. *I like to make plans for the future and try to make them happen*	.602	-
35. *Some people wander aimlessly in life, but I am not one of them*	.423	.200
41. *I sometimes feel that I have played my role in life (R)*	-.084	-.036
Self-acceptance		
6. *When I look at my past experiences, I feel happy about everything that has happened*	.519	.440
12. *In general, I am proud of myself and the life I am living*	.748	-
18. *I feel that most of the people I know have got a better life than me (R)*	.133	-
24. *I like most aspects of my personality*	.691	.609
30. *In many ways, I feel disappointed in my life's accomplishments (R)*	.552	.403
36. *My attitude towards myself may not be as positive as other people's attitudes toward themselves (R)*	.217	-
42. *When I compare myself to friends and acquaintances, I feel satisfied with who I am*	.559	-

Table 5
Loading Factor for ESEM Model in the Indonesian Version of 42-Item PWBS

	A	EM	PG	PR	PIL	SA
Autonomy						
A_01	**.620**	-.197	.038	.056	.100	.068
A_07	**.498**	-.153	-.057	-.098	-.021	.071
A_13	.174	**.456**	-.450	.032	-.146	.006
A_19	.138	.336	-.278	.040	.158	.079
A_25	**.814**	-.241	-.060	-.093	.057	-.104
A_31	.062	.357	-.269	.015	.122	.128
A_37	**.431**	-.005	.224	-.078	-.187	.013
Environmental mastery						
EM_02	**.409**	-.093	.082	.223	.043	.186
EM_08	.132	-.094	-.020	-.047	.148	-.378
EM_14	.122	.225	.348	-.298	.324	.106
EM_20	.167	.106	.312	.221	-.115	.165
EM_26	.100	**.437**	-.045	-.084	.191	.089
EM_32	.045	**.412**	-.078	-.157	.261	.281
EM_38	.081	-.100	.013	-.016	-.068	.362
Personal growth						
PG_03	.045	-.009	**.419**	-.176	.444	.093
PG_09	.261	.224	**.416**	.273	-.116	-.105
PG_15	.136	**.424**	-.480	.024	-.224	.031
PG_21	.212	.168	.352	.243	-.210	.194
PG_27	.085	.380	-.197	-.001	.141	.030
PG_33	.047	.339	**.605**	.253	-.319	-.023
PG_39	.028	.018	.353	-.109	**.441**	.092
Positive relations						
PR_04	-.041	-.018	-.004	**.681**	.355	.206
PR_10	.044	.265	.234	-.232	.278	.110
PR_16	.148	**.430**	.119	-.286	.155	.081
PR_22	.140	.207	.368	.360	-.148	-.036
PR_28	-.024	.122	.111	**.714**	.305	.092
PR_34	.052	.267	.233	-.244	.334	.139
PR_40	.026	.118	.225	.301	.015	.130
Purpose in life						
PIL_05	-.001	.012	.318	-.018	**.585**	.181
PIL_11	.061	.093	.192	.070	-.390	**.529**
PIL_17	.055	.304	.193	-.231	.355	.192
PIL_23	.053	.180	.156	-.058	**.538**	.161
PIL_29	.053	.085	.278	.221	-.233	.355
PIL_35	.069	.095	.243	-.085	-.359	.320
PIL_41	.016	.013	-.124	.068	-.036	-.031
Self-acceptance						
SA_06	.086	-.106	.002	.123	-.099	**.511**
SA_12	.117	-.130	.014	.141	-.187	**.701**
SA_18	.089	**.460**	-.374	-.028	-.026	.114
SA_24	.239	-.091	.050	.233	-.092	**.463**
SA_30	.008	.371	.114	-.210	.295	.223
SA_36	.048	.351	-.242	-.068	.114	.172
SA_42	.154	-.145	-.038	.110	-.066	**.550**

Note: Loading factor > .40 in bold

Table 6
Loading Factor for ESEM Model in the Indonesian Version of 18-Item PWBS

	A	EM	PG	PR	PIL	SA
Autonomy						
A_19	-.005	.073	-.115	.234	-.031	.098
A_25	**.778**	-.115	-.154	-.055	.034	.084
A_37	**.487**	.053	.220	.054	-.139	-.092
Environmental mastery						
EM_02	.215	-.001	.172	.012	.052	.327
EM_08	.133	-.407	.000	.030	.070	-.212
EM_20	.102	.107	.295	-.004	.055	.242
Personal growth						
PG_09	.087	-.140	**.663**	.143	-.105	.060
PG_33	.014	.202	**.758**	-.108	.022	-.036
PG_39	.035	.013	.138	.166	**.608**	-.029
Positive relations						
PR_10	.029	.055	-.047	**.630**	.039	-.041
PR_28	-.088	-.074	.337	.192	-.086	.314
PR_34	.031	.011	.009	**.669**	.115	-.070
Purpose in life						
PIL_05	.024	.099	.111	.226	**.520**	-.001
PIL_35	.177	.345	.186	.008	-.156	.027
PIL_41	-	-	-	-	-	-
Self-acceptance						
SA_06	.006	.089	.021	.022	.034	**.517**
SA_24	.148	.134	-.021	.007	-.005	**.712**
SA_30	.020	.179	-.025	**.481**	.154	-.062

Note: Loading factor > .40 in bold

This research aims to examine the factor structure of the Indonesian version of 42-item PWBS (Ryff, 1989) and 18-item PWBS (Ryff & Keyes, 1995). The test results show that the long and short versions of the one and six-factor models do not have a satisfactory model fit. The findings from the ESEM model test indicate that only a few items of PWBS tend to carry out certain measurements according to their dimensions. Moreover, some items have a greater loading factor in other dimensions. These findings also show that the Indonesian version of 42-item PWBS and 18-item PWBS do not have satisfactory internal consistency. It generally implies that the Indonesian version of the PWBS has a factor structure that does not represent the psychological well-being concept proposed by Ryff (1989).

The findings regarding the 42-item PWBS factor structure differs from previous research in the UK in that its model fit corresponds with the data (Abbott et al., 2010, 2006). Although, this contradicts preliminary studies carried out in Indonesia that PWBS-42 has a factor structure of six dimensions (Mubarok & Miftahuddin, 2019). Mubarok and Miftahuddin (2019) tested the six-factor correlation models separately. These findings are consistent with the research carried out by Villarosa and Ganotice (2018) that the 42-item PWBS lacks model fit when tested on a sample collected in the Philippines. Some preliminary research that tested PWBS also discovered certain inconsistent results. For example, the Chinese version of the 33-item PWBS (Gao & McLellan, 2018) and the Romanian version of the 44-item PWBS (Kállay & Rus, 2014) have model fit that corresponds with the acquired data. Meanwhile, the Spanish version of the 39-item PWBS (van Dierendonck et al., 2008) has a lesser satisfactory model fit.

Similarly, the lengthy version of the 18-item PWBS also lacks a satisfactory model fit. Presently, there is no information regarding the psychometric properties of 18-item PWBS (Ryff & Keyes, 1995). Fernandes et al. (2010) and Li (2014) developed and tested the psychometric properties of the 18-item PWBS that have different compositions from those designed by Ryff and Keyes (1995). The Portuguese (Fernandes et al., 2010) and Chinese (Li, 2014) versions use different item compositions. However, only the Chinese version of the 18-item PWBS has a satisfactory factor structure with six dimensions.

The Indonesian version of PWBS does not yet have a satisfactory internal consistency for all its dimensions. This is because all dimensions of 42-item PWBS and 18-item PWBS do not yet have composite reliability greater than .7. Whereas the measurement model is stated to have a satisfactory internal consistency if its composite reliability is greater than .7 (Hair et al., 2014). These findings are consistent with previous research that the dimensions of PWBS have unsatisfactory reliability (Cheng & Chan, 2005; Fernandes et al., 2010; Ryff & Keyes, 1995). However, some preliminary research stated that the Chinese version of the 33-item PWBS (Gao & McLellan, 2018), the Romanian version of the 44-item PWBS (Kállay & Rus, 2014), and the Spanish version of the 39-item PWBS (van Dierendonck et al., 2008), has satisfactory reliability for all dimensions. Some dimensions have unsatisfactory internal consistency. For example, self-development and self-acceptance from the Philippine version of the 18-item PWBS (Villarosa & Ganotice, 2018), and the autonomy dimension from the Chinese version of the 18-item PWBS (Li, 2014). This also includes autonomy, self-development, positive relations with others, and purpose in life from the Swedish version of the PWBS-42, which has a reliability of less than .7 (Lindfors et al., 2006). It indicates that the PWBS has relatively less stable internal consistency among countries.

The unsatisfactory factor structure and reliability in the Indonesian version are caused by a lack of items that can measure its dimensions appropriately. Confirmatory factor analysis aims to ensure that the grouping of items is in accordance with the conceptualization of the previously determined measuring instrument (Finch et al., 2016). These findings are following the PWBS construct validity research carried out in Indonesia, that some items did not have a good enough loading factor (Mubarok & Miftahuddin, 2019; Revelia, 2019). Furthermore, based on the ESEM model test results, some items measure other dimensions more accurately than their own. This is because some of them do not conform to the definition of the construct being measured. The suitability of such an item is important and considered as one the evidences for the validity of the measuring instrument (Bandalos, 2018; Furr, 2011). Some PWBS items do not align with certain samples acquired from Indonesia, even though they correspond with those from other countries. This is because some research discovered that all PWBS items function effectively (Abbott et al., 2006; Kállay & Rus, 2014). Dissimilarities in the accuracy of the measured construct are caused by the diverse participants from different countries in terms of understanding and interpreting the same item (Blankson & McArdle, 2015; Millsap & Olivera-Aguilar, 2012). This also occurs in PWBS, especially since recent studies discovered unequal satisfactory scale items in several countries (Dimitrova & del Carmen, 2015; Schnettler et al., 2017; Whisman & Judd, 2016).

Generally, this research evaluated the Indonesian version of the PWBS factor structure. Although some preliminary studies (Mubarok & Miftahuddin, 2019; Revelia, 2019) stated that it is more comprehensive. Previous research only tested the one-factor (Revelia, 2019) and six-factor models separately (Mubarok & Miftahuddin, 2019).

The present study examined the six-factor model according to the conceptualization of Ryff (1989), and the ESEM was tested to examine the grouping of items in the Indonesian version of 42-item PWBS and 18-item PWBS. In addition, this is the first research to carry out such analysis.

Although these findings indicate that the Indonesian version of the PWBS does not have a satisfactory factor structure, it can also be used to measure the psychological well-being of the samples. This is because the internal structure is a source of evidence alongside content, criterion, and convergent validities (AERA, APA, & NCME, 2014). It is regarded as a limitation of this research because the sources of evidence for validity, as a whole have not been evaluated. The content validity test is used to check the suitability of the item statement based on the definition of the measured construct (Bandalos, 2018; Furr, 2011). In the circumstances, where the content validity test is performed, some items considered to correspond with the definition of the construct slightly can be either replaced or corrected before testing the Indonesian version of the PWBS factor structure. Additionally, convergent and criterion validity tests provide information about the accuracy of the Indonesian version of the PWBS measurement (Bandalos, 2018; Carlson & Herdman, 2012; Furr, 2011).

Conclusion

In conclusion, the Indonesian version of the PWBS is an invalid measuring instrument. This is based on the evidence source for the internal structure's validity. The Indonesian version of 42-item PWBS and 18-item PWBS does not represent the psychological well-being concept proposed by Ryff (1989). It is inseparable from the lack of items that can be used to measure the six dimensions of psychological well-being. However, these findings are not the only evidence that the Indonesian version of the PWBS cannot be used to measure the psychological well-being of the Indonesian samples. There is a need to test other sources to ensure their validity complements these findings.

Further research must carry out content, convergent, and criterion validity tests. The content validity test involves the use of Discriminant Content Validity, which compares the item's suitability with the definition of its construct and others (Johnston et al., 2014). The convergent validity test is carried out using measuring instruments that have similar constructs to psychological well-being, such as the Satisfaction with Life Scale (Diener et al., 1985), Positive and Negative Affect Schedule (Watson et al., 1988), and Flourishing Scale (Diener et al., 2009). Meanwhile, the criterion validity test is carried out by using measuring instruments from the constructs related to psychological well-being such as self-esteem, stress, and depression.

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