The Ryff's Psychological Well-Being Scale for Indonesian Higher Education Students: A RASCH Model Analysis

DIANA SEPTI PURNAMA[1*], MUH FAROZIN[2], AND BUDI ASTUTI[3]

Abstract

The research aimed to examine the Ryff's six factors model of psychological well-being that could be applied to higher education students in Indonesia by using the RASCH model. 425 higher education students completed adapted scales to assess demographic variables. The results showed that the person separation criteria scored 2.38 in the poor category, the item separation scored 12.21 in the very good category, the person reliability scored 0.85 in the good category, and the item reliability scored 0.99 in the very good category. The subscales of the PWB-42 showed accepted levels of reliability and the validity of the psychological well-being scale. The terms of the person and item strata separated criteria in the RASCH model showed good results. However, the statement items provided are not broad enough to reveal the condition of psychological well-being. Therefore, future higher education students research should develop more specific and context-appropriate items for a better operationalization of the Ryff's theoretical model.

Keywords

higher education students, psychological well-being, Ryff's scales, RASCH model

Article History

Received 14 August 2022
Accepted 05 November 2022

How to Cite

Purnama, D. S., Farozin, M., & Astuti, B. (2022). The Ryff's psychological well-being scale for Indonesian higher education students: A RASCH model analysis. *Indonesian Research Journal in Education |IRJE|*, *6*(2), 222-.231, https://doi.org/10.22437/irje.v6i2.20086

[1*] Universitas Negeri Yogyakarta Sleman, Daerah Istimewa Yogykarta Indonesia, Corresponding author's email: dianaseptipurnama@uny.ac.id
[2] Universitas Negeri Yogyakarta, Sleman, Daerah Istimewa Yogykarta Indonesia
[3] Assoc Universitas Negeri Yogyakarta, Sleman, Daerah Istimewa Yogykarta Indonesia

Introduction

The Ryff's scales of psychological well-being (PWB) are widely used in various countries to determine the condition of individual psychological well-being. The RASCH model is a test of validity and reliability that is still not widely used to test the validity and reliability of the psychological well-being scale for higher education students in Indonesia. Higher education students in Indonesia are in the category of late adolescence. Psychological well-being in adolescence has always been a centre of academic research. There are trend issues related to mental health in recent years is psychological well-being such as Alfawaz et al. (2021) and Lingelbach et al. (2021). It is evidenced by the results of research that relate to psychological well-being conducted in various countries in the last five years with different subjects (Royer & Moreau, 2016).

The PWB can contribute to people's personal growth, career development, and successful aging. Measuring, and promoting PWB among the higher education students might be helpful to solve essential issues in life at every stage. During the pandemic of Covid-19, online learning has various obstacles found in the field, such as inadequate network, facilities, and capacities of android/handphones owned by students, as well as the limited purchase of internet packages by teachers, students, and student parents. Some students complain about learning. The tasks are considered more than previous days, and the difficulty of network access in their areas causes them to have to find network access.

In April 2020, Northwest Evaluation Association (NWEA) released a report that follows the trajectory of learning loss by class since the pandemic started. There is a lack of student initiative and effort during online lectures. It is undeniable if all students come back to school after a long break, their previous knowledge and skills will lose, or called with learning losses. According to research carried out by the JRC European Commission, the implementation of distance learning is the key to ensuring continuity of education after physical school closure. Some students probably will experience learning losses during the lockdown. Learning loss is a condition in students who arise because of difficulties in the learning process (Dziuban et al., 2018). Students who can measure their ability accurately in completing tasks or problems will be easy to feel prosperous in their life. In reverse, students who cannot accurately measure their ability will be hard to feel good. Psychological well-being is a condition of someone who can accept himself as he is, form a warm relationship with others, has independence from social pressures, control the external environment, has deep meaning in life and realize their potential sustainably. The research showed that a total of 193 Islamic psychology students who participated were those with an average age of 19 years old, most of them can deal with situations from the six dimensions of PWB (Kurniawan, 2015). The PWB has been frequently measured by Ryff's Psychological Well-Being Scales (Ryff, 2018).

Literature Review

Ryff and Singer (2008) explored the issue of well-being in the context of the development of a person's life span. They influenced Aristotle's view, that wellness is a

simple thing like an effort to get pleasure, but the struggle to be perfect in realizing one's true potential (Ryan & Deci, 2001). Ryff and Keyes (1995) stated that to measure a person's psychological well-being (PWB) using a multidimensional approach consists of six aspects of human self-actualization such as autonomy, personal growth, self-acceptance, life goals, environmental mastery, and positive relationships with others. These six aspects explain PWB theoretically and operationally and relate them to mental and physical health (Ryff & Singer, 2008). In addition, they stated that eudemonic life represented by PWB could affect specific physiological systems of immunological functions and health-supporting factors.

According to Ryff and Keyes (1995), psychological well-being is a state of individuals in their true self-potential which is characterized by an ability to behave independently and avoid social pressures (autonomy), feel an increase in self-quality over time (personal growth), accept their weaknesses and strengths (self-acceptance), has a purpose in life that impacts on the direction of his attitudes and behavior (life goals), create and choose an environment under personal values and needs (mastery of the environment) and enjoy and establish harmonious relationships with others (positive relationships with others).

The reliability and validity of the PWB have been established in more than 30 languages and across various cultures (Cheng & Chan, 2005). Various measuring tools were used, including the psychological well-being scale developed by Ryff, both the short item and the 42-item version. Collecting data process for survey research requires valid and reliable measuring instruments. Ensuring the measuring instrument can be done by testing the validity and reliability. One of the validity and reliability test models is the RASCH model. The results of publications in Indonesia regarding the validity and reliability of the Ryff's psychological well-being scale using the RASCH model are still relatively low and difficult to find on the Google Scholar page. Validity and reliability testing with the RASCH model produces detailed information that has not been completed by other analytical techniques (Sumintono & Widhiarso, 2014).

The RASCH model determines a valid and reliable instrument in terms of several indicators, including targeting, item model fit mean-square, range extremes, person and item measurement reliability, person and item strata separated, ceiling effect, floor effect variance in data explained by measure, and unexplained variance. The value on each indicator is categorized into five parts. They are poor, fair, good, very good, and excellent (Fisher, 2007). Therefore, considering much research using the psychological well-being scale developed by Ryff and the RASCH model have not been completed by other analytical techniques, it is necessary to test the validity and reliability.

Methodology

Based on learning loss since the pandemic started, participants of this research were students recruited from eight faculties in *Universitas Negeri Yogyakarta*, Indonesia. The scales of psychological well-being (PWB) were adapted to assess the psychological well-being of higher education students in Indonesia. -5 students completed the adapted 42-item PWB. A questionnaire was to assess demographic variables, including gender (male or female), education status (bachelor, master or doctoral) and 8 faculties. We translated the 42 items of the PWB into Bahasa Indonesia. According to Ryff (1989) originally comprised six subscales with seven items, each to measure the six factors, such as 1) autonomy, 2) environmental

mastery, 3) personal, 4) positive relations with others, 5) purpose in life, and 6) self-acceptance. Response categories for these items are on a seven-point scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The score for six subscales was calculated as averages. Higher scores mean greater psychological well-being.

Data collection started from April to June 2021. Additionally, data analysis used the RASCH model by looking at the scores/values on the criteria of person and item measurement reliability, person and item strata separated, and the results of the mis-fit test. Furthermore, the primary objective is to compare Indonesian students with Malaysian students to test hypotheses linking constructs of interdependence and independence to well-being and health.

Findings and Discussion

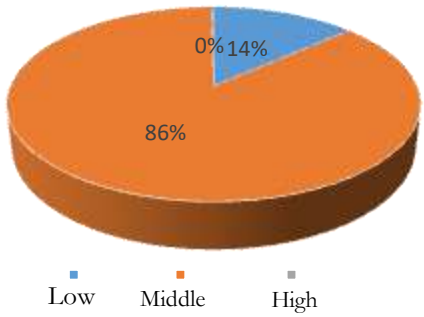
The responses were from 425 students in the target sample. Based on the collected data, there were 146 male and 289 female students. The level of psychological well-being of students of *Universitas Negeri Yogyakarta* is as follows:

Table 1. *The level of psychological well-being*

Category	Number of Respondents	Percentage
Low	58	13,4%
Medium	368	86,3%
High	1	0,23%
Total	425	

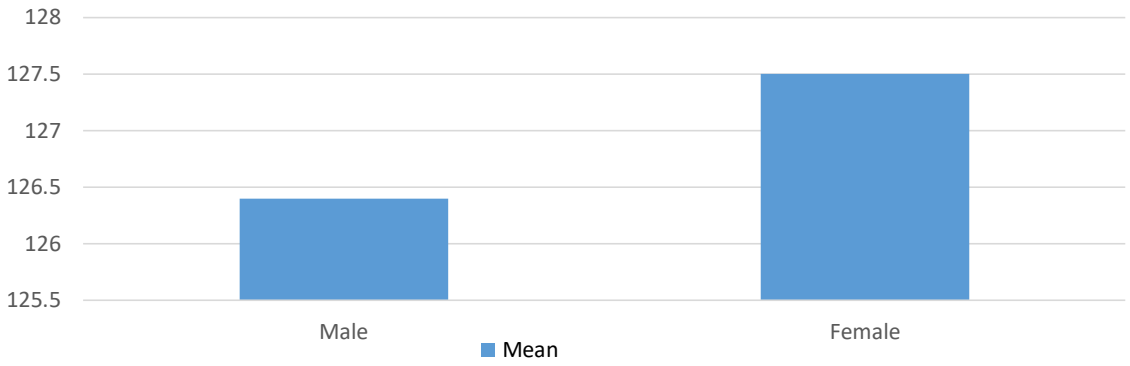
The table shows that the psychological well-being level of students is medium and in the category of obtaining a high percentage (86.3%).The results of this research generally support previous research which stated that psychological well-being can be an essential factor that can influence their life (Caldwell et al., 2013). In contrast to previous research that measured psychological well-being by looking at the presence or absence of depressive symptoms, this research measured, psychological well-being directly with the instrument developed by Ryff (1989). Thus, it is hoped that this measuring instrument can describe a person's psychological well-being more accurately. The level of psychological well-being is in the figure below.

Figure 1. *The level of psychological well-being*



Furthermore, based on demographics such as gender, there are differences in the psychological well-being level of male and female students. Male students have a lower level of welfare than women, where the percentage of psychological well-being for male students is 84.9% and female students is 88.1%. There are no male students with psychological well-being in the high category, while there is one female student with a high category of psychological well-being. It means the students of *Universitas Negeri Yogyakarta* are enough in a condition of psychological well-being. It is indicated by the condition of each group of students with the highest percentage in the moderate category. The difference in level is in this figure below.

Figure 2. *The conditions of psychological well-being*



Ryff (1989) reported significant overall gender difference in the psychological well-being subscales using MANOVA. However, subscale univariate analyses revealed gender difference only for the positive relations with others. Roothman, Kirsten, and Wissing (2003) used 13 scales related to psychological well-being and reported small to medium gender differences on some of the scales. Mokhlesi and Patil (2018) supported the results of this research that the correlation between emotional intelligence and psychological well-being is higher in female than male adolescents. Hence, gender is moderate in correlation between psychological well-being and emotional intelligence. It is also supported by research from Vinayak and Judge (2018) that the multivariate and univariate analyses were directed to assess the subscale consistency of the PWB, the factor structure of the PWB in terms of its subscales, and gender differences in PWB, its subscales and optimistic attitude.

The findings of results showed that there is significant gender difference in psychological well-being among male and female of higher education students. The results also indicate an insignificant gender difference in dimensions of psychological well-being (autonomy, environmental mastery and personal growth) and a significant difference in these three dimensions of psychological well-being (positive relations, purpose in life and self-acceptance) among male and female students.

According to Li (2014), three models were tested, including the one-factor model, six-factor model, and hierarchical model. To be more specific, the one-factor model

suggested that all 33 items were unanimously loaded on a single factor. The six-factor model suggested that the items of each sub-scale were loaded on their corresponding factor and correlated with each other. The hierarchical model suggested that the items of each sub-scale were loaded on their corresponding factor, and the six factors were subsequently loaded on a higher-order factor, which represented the construct of PWB (Ryff & Keyes, 1995).

The results of this research showed that the person reliability criterion gets a score of 0.85 in the good category and item reliability gets a score of 0.99 in the excellent category. Based on these results, the reliability of the psychological well-being scale developed by Ryff can be said to be very good. Meanwhile, the person separation criteria get a score of 2.38 in the fair category, and item separation gets a value of 12.21 in the excellent category.

Table 2. *The person and item criteria*

Criteria	Value	Description
Person Separation	2.38	Poor
Item Separation	12.21	Very Good
Person Reliability	0.85	Good
Item Reliability	0.99	Very Good

It indicates that the validity of the psychological well-being scale in terms of the person and item strata separated criteria in the RASCH model showed good results but has a drawback that the statement items provided are not broad enough to reveal psychological well-being condition. Furthermore, in terms of the variance in data explained by measure, the psychological well-being scale developed by Ryff scored 38.5%, which means that the scale is still contaminated with factors that have no correlation with psychological well-being or things that do not really need to be measured. Meanwhile, from the function of the available answer choices, the psychological well-being scale with five answer choices has a good function.

Table 3. *The diagnosis category function*

Category Label	Percentage of Observed	Category Measure
1	23	-2.25
2	24	-0.98
3	16	-0.38
4	14	0.01
5	10	0.40
6	8	0.98
8	4	21.19

It is evidenced by the percentage of each answer chosen by the respondents. fFor choice 1 a percentage of 23%, choice 2 is 24%, choice 3 is 16%, choice 4is 14%, choice 5 is 10%, choice 6 is 8% and choice 8 is 4%. From the misfit test, the majority of items on the

psychological well-being scale are in the range of 0.5-1.5 which means they fit with the RASCH model, but there are still four items that have a value above 0.5, namely items number 34, 5, 14, and 31. According to Wright (1994), it does not reduce the fit value of the scale, only on the unproductive items for the construction of measurements in this context of measuring psychological well-being.

The results of previous research showed that the psychological well-being scale is valid and reliable (Abbott et al., (2006); Sasaki et al., (2020). However, from the results of the person and item strata separated items on this scale, it is not sufficient to reveal psychological well-being, and the results of the analysis on the variance in data explained by measure criteria which get a percentage of 38.5% which indicates there are still factors that have no correlation with psychological well-being on this scale.

Table 4. *The explained and unexplained variance crit*eria

Criteria	Value	Description
Variance in Data Explained by Measure	38%	Poor
Unexplained Variance Data in Contrast 1-5 PCA Residuals	11.9%	Fair

However, according to Sumintono and Widhiarso (2014), the raw variance tolerance value in the RASCH model is at least 20%. The variance in the explained data as 38.5% indicates that this scale is still a good measuring instrument. Meanwhile, in the misfit test, some items can still be refined to meet the criteria determined by Wright, namely items 34, 5, 14, and 31. These results are in line with Kurniawan (2016), whose subject is Islamic Psychology students about the correlation between PWB level and student happiness which states that most items meet Wright's criteria. It indicates that several items do not meet the criteria for answer choices.

Additionally, Fatima et al. (2018) also found a correlation between religiosity and PWB with a correlation coefficient of 0.480, and a confidence level of 99%. The correlation is at a moderate level. Religiosity, which is appreciation and self-processing, shows a fairly high correlation with respondents of PWB. The psychological well-being scale will be more perfect if several items that have values that do not match the vulnerability determined by the RASCH model are readjusted so that the percentage of variance in the data explained by measure increases. Therefore, it indicates that it is more accurate in measuring psychological well-being, avoids contamination of the factors involved, and is not associated with psychological well-being. Regarding the answer choices in this research, there are choices 1 to 5. Based on the answer function analysis result, the available answer choices are good because the percentage results in each answer choice are evenly distributed. These results update previous research, which only provided answer choices 1 to 6 (Garcia et al., 2016).

Conclusion

This research aimed to explore whether Ryff's six-factor model of psychological well-being could be applied in higher education students in Indonesia. The Scales of Psychological Well-being (PWB) were adapted to assess the students at *Universitas Negeri*

Yogyakarta. The psychological well-being scale developed by Ryff is valid and reliable to measure psychological well-being of higher education students in Indonesia and fits the RASCH model. This version of the PWB-42 showed acceptable reliability and convergent validity when applying the original scoring method for the six subscales. However, the validity factorial based on the original six-factor model was not well supported in this research. Meanwhile, most factors observed in this research seem compatible with the original factors. Further examination is needed to know if the factor structure of the PWBS-42 is different for higher education students in Indonesia.

Disclosure statement

No potential conflict of interest was reported by the authors.

Acknowledgments

This research was financially supported by the Institution of research and Community Service of *Universitas Negeri Yogyakarta*.

References

Abbott, R. A., Ploubidis, G. B., Huppert, F. A., Kuh, D., Wadsworth, M. E., & Croudace, T. J. (2006). Psychometric evaluation and predictive validity of Ryff's psychological well-being items in a UK birth cohort sample of women. *Health and quality of life outcomes*, *4*(1), 1-16.

Alfawaz, H. A., Wani, K., Aljumah, A. A., Aldisi, D., Ansari, M. G., Yakout, S. M., ... & Al-Daghri, N. M. (2021). Psychological well-being during Covid-19 lockdown: Insights from a Saudi State University's Academic Community. *Journal of King Saud University-Science*, *33*(1), 101-262.

Caldwell, C. H., Antonakos, C. L., Tsuchiya, K., Assari, S., & De Loney, E. H. (2013). Masculinity as a moderator of discrimination and parenting on depressive symptoms and drinking behaviors among nonresident African-American fathers. *Psychology of Men and Masculinity*, *14*(1), 48–58.

Cheng, S. T., & Chan, A. C. (2005). Measuring psychological well-being in the Chinese. *Personality and Individual Differences*, *38*(6), 1307-1316.

Dziuban, C., Moskal, P., Parker, L., Campbell, M., Howlin, C., & Johnson, C. (2018). Adaptive learning: A stabilizing influence across disciplines and universities. *Online Learning, 22*(3), 7-39.

Fatima, S., Sharif, S., & Khalid, I. (2018). How does religiosity enhance psychological well-being? Roles of self-efficacy and perceived social support. *Psychology of Religion and Spirituality*, *10*(2), 119.

Fisher, W. P. (2007). Rating scale instrument quality criteria. *Rasch measurement transactions*, *21*(1), 1095.

Garcia, D., Al Nima, A., & Kjell, O. N. (2014). The affective profiles, psychological well-being, and harmony: Environmental mastery and self-acceptance predict the sense of a harmonious life. *PeerJ*, *2*, e259.

Kurniawan, R. (2015). Eksplorasi dimensi *psychological well-being* mahasiswa Psikologi Islam [Exploration of the psychological well-being dimensions of Islamic Psychological students]. *Al-Qalb: Jurnal Psikologi Islam*, *6*(2), 81-88.

Kurniawan, R. (2016). Apakah mahasiswa Psikologi Islam bahagia? Gambaran psychological well-being dengan pendekatan pemodelan Rasch [Are Islamic Psychology students happy? Psychological well-being description with Rasch modeling approach]. *Al-Qalb: Journal of Islamic Psychology*, *8*(1), 65-83.

Li, R. H. (2014). Reliability and validity of a shorter Chinese version for Ryff's psychological well-being scale. *Health Education Journal*, *73*(4), 446-452.

Lingelbach, K., Piechnik, D., Gado, S., Janssen, D., Eichler, M., Hentschel, L., ... & Peissner, M. (2021). Effects of the Covid-19 pandemic on psychological well-being and mental health based on a German online survey. *Frontiers in Public Health*, 9-15.

Mokhlesi, V., & Patil, C. B. (2018). A study of gender differences in emotional Intelligence and learning behaviour among children. *The International Journal of Indian Psychology*, *6*(4), 2349-3429.

Roothman, B., Kristen, D. K., & Wissing, M. P. (2003). Gender differences in aspects of psychological well-being. *South African Journal of Psychology , 33* (4), 212-218.

Royer, N., & Moreau, C. (2016). A survey of Canadian early childhood educators' psychological well-being at work. *Early Childhood Education Journal*, *44*(2), 135-146.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual review of psychology*, *52*,141-166.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of personality and social psychology*, *57*(6), 1069.

Ryff, C. D. (2018). Well-being with soul: Science in pursuit of human potential. *Perspectives on Psychological Science*, *13*(2), 242-248.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of personality and social psychology*, *69*(4), 719-819.

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of happiness studies*, *9*(1), 13-39.

Sasaki, N., Watanabe, K., Imamura, K., Nishi, D., Karasawa, M., Kan, C.,& Kawakami, N. (2020). Japanese version of the 42-item psychological well-being scale (PWBS-42): A validation study. *BMC psychology*, *8*(1), 1-11.

Sumintono, B., & Widhiarso, W. (2014). *Aplikasi model Rasch untuk penelitian ilmu-ilmu sosial (edisi revisi) [Application of the Rasch model for social science research (revised edition)]*. Trim Komunikata Publishing House.

Vinayak, S., & Judge, J. (2018). Resilience and empathy as predictors of psychological well-being among adolescents. *International Journal of Health Sciences and Research*, *8*(4), 192-200.

Wright, B. D. L. J. (1994). Reasonable mean-square fit values. *Rasch Meas Trans*, *8*(3),70.

Biographical Notes

DIANA SEPTI PURNAMA is a Faculty member at the Universitas Negeri Yogyakarta, Sleman, Daerah Istimewa Yogykarta Indonesia, email: dianaseptipurnama@uny.ac.id

MUH FAROZIN is a Faculty member at the Universitas Negeri Yogyakarta, Sleman, Daerah Istimewa Yogykarta Indonesia.

BUDI ASTUTI is a Faculty member at the Universitas Negeri Yogyakarta, Sleman, Daerah Istimewa Yogykarta Indonesia.