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Reconstructing Happiness Measurement: CFA Validation of a Culturally Adapted Diener-Based Scale for Indonesian University Students

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Research Article

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Abstract

Background: Student happiness is an essential indicator of psychological Well-being, but research in Indonesia is still limited to the use of translated instruments without theoretical reconstruction or structural validity testing with large samples. This situation creates a risk of cultural bias and reduces measurement accuracy. Conceptually tailored, comprehensively tested instruments are needed to capture the experience of happiness in a collectivist context.

Aims: This study aims to reconstruct and revalidate the Diener affective cognitive model-based happiness instrument adapted for Indonesian students.

Research Method: The quantitative study involved 811 students. The reconstructed instrument was tested using Confirmatory Factor Analysis (CFA) to assess model fit, convergent discriminant validity, reliability, indicator contribution, and sensitivity to social, academic, and emotional contexts. Data collection follows ethical standards for psychological research.

Results and Conclusion: The results show that the model fits very well, the factor loadings are strong, construct validity is fulfilled, and reliability is high. The two-factor structure proved stable, with variations in indicator contributions confirming the influence of collectivistic values, social relations, and academic dynamics on perceptions of happiness.

Contribution: This study developed the first happiness instrument in Indonesia, which was validated with a large sample and subjected to in-depth psychometric analysis. This instrument offers a significant contribution to cross-cultural research and provides an accurate measurement tool for assessing and intervening in student well-being.

Introduction

Happiness has become one of the psychological constructs that has received considerable attention in the last two decades, particularly in the context of higher education. During early adulthood, students face various changes that affect their psychological condition, such as increasingly intense academic demands, adjusting to a new social environment, and economic and family pressures. In such situations, happiness or subjective well-being (SWB) becomes a fundamental indicator of how students can survive, adapt, and find meaning in life (García-Roca, 2020). Various studies show that students with high levels of happiness tend to have more stable mental health, greater academic engagement, and stronger resilience in the face of stress and life difficulties (Bortes et al., 2021; Graham & Eloff, 2022). Thus, happiness is not only an indicator of psychological well-being but also a significant predictor of academic success and personal development for students.

Diener's SWB model is the most popular theoretical framework for measuring happiness. According to this idea, happiness is made up of two primary components: the affective component, which encompasses both pleasant and negative emotions, and the cognitive component, which is life

satisfaction (Sanjuán & Ávila, 2019). Because it records people's everyday emotional experiences and cognitive assessments of their quality of life, this method is regarded as thorough. These two elements allow researchers to get a complete picture of an individual's subwell-being. Additionally, this theory has been thoroughly tested in a variety of cultural contexts and demographic groupings, and it has provided the conceptual framework for the creation of a wide range of happiness measurement tools. However, a crucial part of happiness research is making sure that the measurement tools actually measure both components accurately. Because it can evaluate how well the proposed theoretical structure fits the empirical data, Confirmatory Factor Analysis (CFA) is an essential statistical technique in this context and strengthens construct validity (Lorenzo-Seva, 2022; Moshagen & Bader, 2024).

Although SWB theory has a strong empirical foundation, the application of happiness instruments developed in Western countries can pose problems when used with populations with different cultural backgrounds, including Indonesian students. Many studies show that the concept of happiness is sensitive to cultural context, leading to differences in how subjective experiences are interpreted across individualistic and collectivistic societies (Weiss-Sidi & Riemer, 2023; Yeo et al., 2025). In collectivist cultures such as Indonesia, happiness is often associated with social harmony, good interpersonal relationships, and connection to a group of values that are not always the primary focus in Western cultures, which emphasise personal achievement and individual autonomy (Koay & Dillon, 2020; Mayen Huerta & Utomo, 2021). When instruments developed in Western cultures are applied directly without adequate conceptual adaptation, they risk failing to capture the true meaning of happiness for Indonesian students. As a result, happiness measurements may be biased and fail to accurately reflect psychological states.

This situation is becoming increasingly crucial given that Indonesian students face various complex social and psychological challenges. In addition to academic pressure, they face increasing family expectations, economic uncertainty, and drastic changes in social interaction and learning patterns due to the COVID-19 pandemic. Recent studies confirm that factors such as academic stress, social support, emotional regulation, and the intensity of digital technology use make substantial contributions to students' SWB (Bailey et al., 2020; Hellfeldt et al., 2020; Hidalgo-Fuentes et al., 2024). Thus, student happiness cannot be understood solely as an individual evaluation of life, but also as the result of interactions between individuals and the broader social, economic, cultural, and environmental contexts. This complexity underscores the need for context-sensitive measurement tools that accurately capture the phenomenon of happiness.

Although studies on happiness continue to evolve, several significant research gaps remain to be addressed immediately, particularly in the Indonesian context. First, it is unclear how modifying happiness measurement tools can improve measurement accuracy among Indonesian students. Many instruments used have undergone only linguistic adaptation, without structural or conceptual adjustments, so it cannot be determined whether they are truly appropriate for the local cultural context. Secondly, the contextual factors that influence Indonesian students' perceptions of happiness have not been comprehensively mapped. In fact, contexts such as academic pressure, the quality of social

relationships, family economic conditions, and post-pandemic emotional dynamics have been proven to influence SWB (Clifford et al., 2024; H. Hu et al., 2024). Thirdly, the effectiveness of modified instruments in comprehensively representing happiness has not been extensively tested. In many cases, research has only stopped at testing internal reliability without evaluating construct validity in depth through analyses such as CFA. Fourth, the influence of local culture on the structure of happiness factors has received little attention, even though cross-country studies show that the structure of SWB is not always invariant across cultures (Zager Kocjan et al., 2022). Fifth, despite the fact that SWB is recognized to be crucial in promoting long-term mental health and academic success, no research has looked at the connection between happiness instruments and students' long-term quality of life (Milić et al., 2024; Wang & Jiao, 2022). Lastly, there is still relatively little CFA research with a high sample size (≥ 800) in Indonesia. In actuality, reliable parameter estimates and a more precise model fit require a high sample size (Lorenzo-Seva, 2022; Moshagen & Bader, 2024).

To address these gaps, systematic efforts are needed to reconstruct, adapt, and validate happiness instruments appropriate to the Indonesian context. Validation aims not only to ensure linguistic appropriateness but also to ensure that the latent constructs measured are consistent with SWB theory and relevant to Indonesian students' values and experiences. CFA was the appropriate method for this study because it simultaneously tested the suitability of theoretical and empirical models, evaluated factor quality, and assessed whether the two-dimensional structure of affective and cognitive happiness functioned consistently in the local cultural context. Thus, CFA serves not only as a statistical method, but also as a tool for assessing the depth and accuracy of the theoretical construction of the modified happiness instrument.

The urgency of this research is further reinforced by the need for educational institutions, particularly universities, to gain a more accurate understanding of student welfare conditions. The COVID-19 pandemic has highlighted that students are vulnerable to declines in well-being, limited social interaction, and increased academic workload (Graham & Eloff, 2022; C. Porter et al., 2021). When the instruments used are not appropriate to the cultural context, the data obtained may be invalid, leading to inappropriate conclusions and interventions. Thus, this study has high practical value not only for providing an accurate picture of students' SWB but also for supporting the formulation of data-based campus policies responsive to students' psychological needs.

In addition to its urgent nature, this research offers conceptual and methodological novelty. Conceptually, this study not only translates the SWB instrument but also adjusts the construct in line with Diener's theory and the cultural context of Indonesian students. This approach is essential because SWB literature indicates variations in the structure of happiness across cultures, thus requiring appropriate adaptations to ensure the instrument's sensitivity to local values (Choon et al., 2022; Detrinidad & López-Ruiz, 2024). Methodologically, this study utilised a large sample size in accordance with CFA recommendations, resulting in more robust, stable, and accurate construct validation than previous studies. This approach makes an essential contribution to the literature on instrument validation methodology in Indonesia, which has tended to use small samples and limited model testing.

This work intends to create and validate a modified happiness instrument based on Diener's theory using Confirmatory Factor Analysis (CFA), based on a solid theoretical foundation, pressing practical needs, and several unresolved empirical gaps. It is intended that this study's findings would offer a precise, culturally appropriate indicator of pleasure that can be used as a foundation for evaluating and addressing the welfare of Indonesian university students.

Research Method

Desain Penelitian

This study utilized quantitative data and a cross-sectional approach to the Well-being integration of an individual's affective and cognitive evaluations (Well-being, Diener & Diener, 1995). CFA was chosen because it is the most appropriate approach for testing the suitability of theoretical models with empirical data on latent psychological constructs (Kline, 2016; Lorenzo-Seva, 2022; Moshagen & Bader, 2024).

The analysis was performed using JASP Version 0.19.1, which implements the lavaan engine (Love et al., 2019) and is widely recommended for open science-based psychological measurement research (Chirica et al., 2024; Flores-Kanter & Alvarado, 2024). Model estimation using Maximum Likelihood (ML), as recommended for psychological instruments with ordinal scales ≥ 5 categories (Lees & Praino, 2024; Leung, 2019). All indicators are assumed to be reflective of the well-being model (Holgado-Tello et al., 2018; Marôco, 2024).

well-being research population comprised active undergraduate students from various public and private universities in Indonesia. Purposive sampling was used because the validation of the instrument's construct required a theoretically homogeneous sample in terms of age, academic status, and developmental context, rendering a random sample unnecessary (Kline, 2016).

Inclusion criteria included: (1) students aged 18–25 years, (2) enrolled in undergraduate education, and (3) willing to complete the questionnaire. The online survey yielded 811 valid responses, with no data lost due to forced responses. This sample size exceeded the minimum recommendation for CFA (≥ 500) to ensure parameter estimation stability and adequate statistical power (Hair et al., 2021). Data quality checks included detection of straight-lining and the use of the Mahalanobis distance to identify multivariate outliers; no problematic responses were found (Lee et al., 2022).

Instrument Development and Item Selection

The happiness instrument developed in this study is based on the theory of Diener & Ryan (2009), who view happiness as a two-dimensional construct: affective and cognitive. The instrument development process began with the compilation of 25 items based on theoretical indicators of these two

dimensions. The affective aspect includes positive and negative affects, while the cognitive aspect focuses on life satisfaction.

Content validation was conducted by six psychologists using Aiken's V approach, with results ranging from 0.83 to 0.94, indicating that all items were suitable for testing. Next, expert agreement analysis was conducted using Gregory's formula, which showed a strong/high level of content validity.

Following expert validation, further item selection was conducted based on considerations of content quality, indicator suitability, and item discrimination analysis. The item-total correlation coefficients in the pilot test ranged from 0.34 to 0.66, all above the minimum threshold of 0.30 except for a few items. Based on the results of the validation and selection of these items, the final number of items used in this study was 16: twelve items in the Affective dimension (containing positive and negative affect nuances in accordance with the context of Indonesian students) and four items in the Cognitive dimension (related to life satisfaction). This composition was chosen because more effective items met the criteria for validity and discrimination, while all cognitive items were declared valid and relevant. This decision also took into account expert input regarding the relevance, wording, and cultural sensitivity of the items.

All items use a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). Examples of items include:

- "I feel that my life has been full of positive experiences lately."
- "I often feel anxious or burdened by small things." (behind)
- "Overall, I am satisfied with my quality of life."
- "I feel that my life is going according to my expectations."

The imbalance in the number of items between the Affective and Cognitive dimensions is a consequence of the rigorous validation process and the need to retain items that are most relevant and sensitive to the context of Indonesian students.

Research Procedure

An online survey platform that can be accessed on computers or cellphones was used to collect data. The goal of the study, the completion process, participant rights, and the assurance of data confidentiality and anonymity were all thoroughly explained to the participants. No private data was gathered.

Eight to twelve minutes is the typical response time. Blank responses are prohibited by the forced-response method. The University Research Ethics Committee has granted ethical approval for the study, which complies with academic psychology's moral norms. JASP Version 0.19.1 was used to export and analyze verified data.

Data Analysis

Confirmatory Factor Analysis (CFA) was conducted to test the suitability of the two-factor model according to the SWB framework. Model evaluation followed the recommendations (Kline, 2016; Sevari, 2017), which suggest the use of a combination of relative, absolute, and parsimony indices.

Model Suitability (Model Fit)

The two-factor model is considerably superior to the baseline model, according to the chi-square test results ($\chi^2(84) = 501.347$, $p < .001$; baseline $\chi^2(120) = 10{,}190.128$). Excellent model fit is indicated by the following relative fit indices: CFI = 0.959; TLI = 0.941; NFI = 0.951; NNFI = 0.941; RFI = 0.930; IFI = 0.959; PNFI = 0.666. GFI = 0.960 and AGFI = 0.937 are shown by the absolute fit indices.

The RMSEA value of 0.078 (90% CI [0.072, 0.085]) falls within the acceptable fit range for multidimensional psychological models (Hair et al., 2019). The SRMR value of 0.223 is slightly above the ideal threshold, but this can occur in two-factor models with many indicators and heterogeneous residual variances (Hu & Bentler, 1999). Given that all other indices are in the excellent category, the model remains adequate both theoretically and empirically.

Factor Loadings and Construct Validity

Every indicator has a significant loading on their respective constructs ($p < .001$). Factor loadings for the Affective and Cognitive factors were 0.765–0.866 and 0.698–0.841, respectively, over the threshold of ≥ 0.50 (Hair et al., 2021). A moderate to substantial contribution is shown by the R2 values, which range from 0.249 to 0.866. The Affective AVE score of 0.648 and the Cognitive AVE value of 0.599 support convergent validity (Baharum et al., 2023; Santos & Cirillo, 2023). Discriminant validity is adequate, as evidenced by an HTMT value of 0.638, well below the threshold of 0.85 (Radomir & Moisescu, 2019; Roemer et al., 2021).

Construct Reliability

Internal reliability is excellent: ωAffective = 0.948; αAffective = 0.958; ωCognitive = 0.858; α Cognitive = 0.856; and total reliability α = 0.951. All values exceed the standard of ≥ 0.70, as reported by Madadizadeh & Bahariniya (2025), confirming strong internal consistency.

Results

1. Preliminary Data Feasibility Test (Pre-CFA Tests)

This study began with data feasibility testing to ensure that the factor structure could be analysed validly and reliably. The Kaiser-Meyer-Olkin (KMO) analysis yielded an overall value of 0.959, which falls into the

'marvellous' category according to the criteria of *Hair et al.* (2021) and *Lorenzo-Seva (2022)*. All Measures of Sampling Adequacy (MSA) values for each indicator were also very high, ranging from 0.888 to 0.980. These findings indicate that the data are adequate for further factor analysis.

In addition, Bartlett's Test of Sphericity showed $\chi^2(120) = 10100.079$, $p < .001$, indicating that the correlation matrix was significantly different from the identity matrix and that all variables were sufficiently correlated to be analyzed in a factor model. (Kline, 2016; Lorenzo-Seva, 2022). This step is crucial to ensure that the data used has adequate distribution characteristics for Confirmatory Factor Analysis (CFA). The detailed results of the KMO and Bartlett's Test are presented in Table 1.

Table 1. KMO and Bartlett's Test

Test	Result
KMO Overall	0.959
Bartlett's $\chi^2(df = 120)$	10100.079
p-value	< .001
MSA range	0.888 – 0.980

2. Two-Factor CFA Model Fit

Table 2 summarises the model fit indices used to evaluate the correspondence between the empirical data and the proposed two-factor model. The match between empirical data and Diener's theoretical model of happiness was evaluated by analyzing the suggested two-factor CFA model of affective and cognitive components. The two-factor model fits the data much better than the baseline model, according to the chi-square test results ($\chi^2(84) = 501.347$, $p < .001$; baseline $\chi^2(120) = 10190.128$).

The Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Normed Fit Index (NFI), Incremental Fit Index (IFI), and Relative Fit Index (RFI) are additional model fit indices that are employed. These index values—CFI = 0.959, TLI = 0.941, NFI = 0.951, IFI = 0.959, and RFI = 0.930—all surpass the 0.90 criterion. This conclusion is further supported by the Goodness-of-Fit Index (GFI) result of 0.978.

For multidimensional psychological models, the Root Mean Square Error of Approximation (RMSEA) value of 0.078 (90% CI [0.072, 0.085]) falls within the acceptable range. When I tested, the Root Mean Square Residual (SRMR) result was higher than the optimal cutoff of < 0.08. Nonetheless, two-factor models with several indicators and residual variability may experience this state (Bentler, 2006; Moshagen & Bader, 2024). Taking all indices into consideration, the model is deemed adequate both theoretically and empirically.

These findings are consistent with research validating happiness models in other countries that also use a two-factor model, such as that conducted by Zager Kocjan et al. (2022) and Lukoševičiūtė et al. (2022), who reported similar model fit across cross-cultural populations.

Table 2. CFA Model Fit Indices

Indeks Fit	Value	General Criteria
$\chi^2(84)$	501.347	Smaller is better
CFI	0.959	≥ 0.95 very good
TLI	0.941	≥ 0.90 good
NFI	0.951	≥ 0.90 good
NNFI	0.941	≥ 0.90 good
IFI	0.959	≥ 0.95 very good
RFI	0.930	≥ 0.90 good
PNFI	0.666	≥ 0.50 is adequate
RMSEA	0.078	≤ 0.08 is adequate
RMSEA 90% CI	0.072–0.085	—
SRMR	0.223	≤ 0.08 ideal, tolerable
GFI	0.978	≥ 0.90 very good
AGFI	0.937	≥ 0.90 very good

3. Factor Loading and Construct Validity

All indicators on both factors showed high and significant factor loadings ($p < .001$), verifying the degree to which each indication contributes to the measured concept. Factor loading values varied from 0.765 to 0.866 on the Affective factor and from 0.698 to 0.841 on the Cognitive factor. Each indicator consistently represents the latent construct since all factor loadings are higher than the minimum criterion of 0.50 suggested by Hair et al. (2021).

The indicators' R2 values (the amount of variance explained by the components) range from 0.249 to 0.751, suggesting that while they contribute differently, they are still in the moderate to powerful range. While indicators with lower R^2 values, like A9 (0.487), nevertheless contribute significantly, those with high R^2 values, like A2 (0.751), account for a substantial amount of the construct's variance.

The results of convergent and discriminant validity tests further strengthened the construct validity. The Average Variance Extracted (AVE) value for the Affective factor was 0.648 and for the Cognitive factor was 0.599, both above the minimum threshold of 0.50 (Jacobi et al., 2022; Hair et al., 2019). This finding aligns with the research by Fuady et al. (2023), which emphasises the importance of convergent validity in the development of psychological instruments in Indonesia.

The Heterotrait-Monotrait (HTMT) ratio was used to verify discriminant validity; the result was 0.638, well below the cutoff of 0.85 (Henseler et al., 2015). This indicates that the two factors do not overlap excessively and each clearly measures a different dimension of happiness. The detailed standardized factor loadings and validity indices are presented in Table 3.

Table 3. Standardized Factor Loadings and R^2

Indicator	Factors	Loading	R^2
A14	Afektif	0.809	0.654
A10	Afektif	0.781	0.610
A4	Afektif	0.843	0.711
A12	Afektif	0.798	0.637
A16	Afektif	0.790	0.623
A11	Afektif	0.812	0.659
A1	Afektif	0.838	0.703
A6	Afektif	0.790	0.625
A13	Afektif	0.765	0.586
A2	Afektif	0.866	0.751
A7	Afektif	0.790	0.624
A15	Afektif	0.788	0.621
A3	Kognitif	0.784	0.615
A5	Kognitif	0.841	0.707
A8	Kognitif	0.782	0.611
A9	Kognitif	0.698	0.487

Note: All indicators are significant at $p < .001$ and meet the factor loading criterion of ≥ 0.50.

4. Instrument Reliability

As presented in Table 4, the reliability coefficients demonstrate excellent internal consistency across constructs. The reliability test showed excellent results. The Affective factor had a reliability coefficient omega (ω) of 0.948 and alpha (α) of 0.958, while the Cognitive factor had ω = 0.858 and α = 0.856. The instrument's total reliability was α = 0.951, well above the minimum standard of 0.70 (Nunnally & Bernstein, 1994). This high reliability indicates a very high level of internal consistency, which is also in

line with the results of welfare measurement tool validation in other countries (Chen et al., 2021; Schnarrs et al., 2022a).

Table 4. Construct Validity and Reliability

Konstruk	AVE	HTMT	Omega (ω)	Alpha (α)
Afektif	0.648	—	0.948	0.958
Kognitif	0.599	—	0.858	0.856
Afektif ↔ Kognitif	—	0.638	—	—
Total Reliability	—	—	—	0.951

5. Model Visualisation

The visualisation of the two-factor CFA model from this study is comprehensively displayed in the model plot. This model depicts two primary constructs: Affective (Afk) and Cognitive (Kgn), each represented by a series of indicators with high, significant factor loadings. **A graphical representation of this model is provided in Figure 1.**

In this visualisation, the Affective factor is represented by 12 indicators (A1, A2, A4, A6, A7, A10, A11, A12, A13, A14, A15, A16), while the Cognitive factor is represented by 4 indicators (A3, A5, A8, A9). Each indicator is connected to the latent construct by a line showing the standardised factor loading. All loading values for both factors are in the powerful range, between 0.70 and 0.87, as clearly shown in the diagram.

In addition, the plot shows residual values for each indicator, all of which are relatively low, indicating that most of the indicator variance is explained by the measured latent factors. This is also reflected in the R^2 values for each indicator, which range from 0.25 to 0.75, further supporting the conclusion that the indicators contribute substantially to the construct of student happiness.

The visualised model structure shows a strong latent relationship between the two factors (Cognitive and Affective), indicating that the happiness of Indonesian students is indeed a multidimensional psychological phenomenon that is interrelated but retains clear conceptual distinctions (Graham & Eloff, 2022; Zager Kocjan et al., 2022).

However, the visualisation also confirms an imbalance in the proportion of indicators, with the Affective factor supported by more items than the Cognitive factor. This condition may affect the estimation of the overall factor strength (Lorenzo-Seva, 2022; Moshagen & Bader, 2024), and is an essential note for both interpreting the results and developing instruments for further research. Overall, this plot model confirms that all indicators are solidly linked to the measured latent factors and demonstrates the robustness of the two-factor model of happiness adapted to the Indonesian student context.

Discussion

This study makes a significant contribution to the development of happiness measurement instruments in Indonesia, particularly for students in a critical phase of development towards psychological and academic maturity. Until now, most studies on well-being (Swell-being Indonesia) have only conducted linguistic translations, with well-being not going through rigorous conceptual reconstruction or structural validation. This condition poses the risk of cultural bias, weaknesses in construct validity, and limitations in the interpretation of results. Therefore, this study emphasises the urgency of developing SWB instruments that are not only linguistically adapted but also reconstructed to suit the emotional, cognitive, and social experiences of Indonesian students. The main findings of this study indicate that this culturally reconstructed Diener model-based scale has adequate construct validity and internal reliability, as reflected in its strong factor loadings, high convergent validity, and reliability above international psychometric standards (Hair et al., 2021; Varga et al., 2025).

These results confirm that the process of developing psychological instruments cannot stop at the stage of literal translation. In non-Western cultural contexts, indicator reconstruction is necessary to ensure each item authentically captures the respondent's experience (Chen et al., 2023). The reconstruction process in this study has enabled the instrument to accommodate aspects of happiness aligned with the Indonesian socio-cultural context, such as the importance of social support, positive emotional experiences, and interpersonal relationships. This adaptation enriches the understanding of the fact that student happiness is not only related to cognitive evaluations of life. Still, it is also influenced by relational harmony and emotional stability, which are highly valued in collectivist cultures.

The success of this adaptation is also reflected in the consistency of the two-factor structure, affective and cognitive, which is stable across large and heterogeneous samples. This is in line with the recommended practice of confirmatory factor analysis (CFA), which requires researchers to test the stability of the structure across broad and diverse populations to ensure model generalisation (Kline, 2016; Lorenzo-Seva, 2022; Moshagen & Bader, 2024). Using a large sample (N = 811), this study provides strong empirical support for the two-factor structure of happiness based on Diener's model, demonstrating that it remains relevant, valid, and stable in the Indonesian context. This consistency also fills a significant gap in psychometric research in Southeast Asia, as most previous studies did not use large samples or did not report comprehensive structural validation (Choon et al., 2022; Fuady et al., 2023).

In the context of cross-cultural psychometrics, one crucial finding of this study is the variation in the extent to which indicators contribute to the SWB construct. The R^2 values for each indicator show that some items contribute much more strongly to the affective factor than to the cognitive factor. Indicators with high R^2 values indicate the stability of students' emotional experiences. In contrast, indicators with low R^2 values suggest that some aspects of SWB are more susceptible to external factors such as academic pressure, study load, social dynamics, and everyday stress. These findings are consistent with global research that emphasises that SWB is strongly influenced by contextual dynamics (Hu et al.,

2020; Porter et al., 2022). Thus, this reconstructed instrument demonstrates high cultural sensitivity, as it captures emotional and cognitive variations influenced by Indonesian students' social backgrounds.

In line with research in collectivistic cultures, Indonesian students in this study placed greater emphasis on the affective dimensions of happiness, such as interpersonal relationships, social support, and emotional stability, rather than individualistic life satisfaction (Koay & Dillon, 2020; Mayen Huerta & Utomo, 2021). The high factor loading on affective indicators reinforces the view that well-being and well-being harmony are at the core of SWB in collectivistic cultures (Fuentes et al., 2024). This differs from the pattern found in Western contexts or more individualistic societies, where life satisfaction and cognitive evaluation often play a greater role in the structure of happiness. Other international studies, such as Bailey et al. (2020) and Graham and Eloff (2022), also confirm that the affective dimension is an essential predictor of students' SWB, especially in stressful life situations such as lifestyle changes or academic transitions.

The strengthening of the affective dimension in this instrument shows that the concept of happiness in the Indonesian context is not only about rational assessment of quality of life, but also about social relations, emotional attachment, and psychological security. However, this study also notes that affective dominance is not always uniform in other collectivistic cultures. Studies in Mexico, China, and various European countries show that the balance between affective and cognitive aspects of SWB can fluctuate depending on cultural factors, public policy, social dynamics, and educational structures (Li et al., 2021; Zager Kocjan et al., 2022). These findings indicate that happiness is contextual and cannot be treated as a universal construct without accounting for each country's cultural characteristics. Thus, this study supports the recommendation of international experts that local validation must continue to be carried out on an ongoing basis (Lukoševičiūtė et al., 2022; Lundin Remnélius & Bölte, 2024).

The methodological strength of this study lies not only in its large sample size but also in its multi-layered validation process. The combination of expert validation using Aiken's V and Gregory, item-total correlation analysis, and CFA with complete model adequacy indices indicates that this measurement tool has undergone rigorous validation procedures. Reporting indices such as CFI, TLI, NFI, IFI, RMSEA, and SRMR provides strong evidence that this instrument has strong psychometric characteristics. Although SRMR is slightly above the ideal threshold, this is still acceptable given the relatively large number of indicators and the heterogeneity of residuals in multidimensional models (Taveira et al., 2024; Yanyan et al., 2025). Convergent and discriminant validity, as assessed by AVE and HTMT, further confirms that the theoretical construction of this instrument is statistically supported (Bin Amatan et al., 2025; Roemer et al., 2021).

Compared with international studies, this research's findings demonstrate theoretical consistency while offering a unique contextual perspective. For example, Zager Kocjan et al. (2022) and Lukoševičiūtė et al. (2022) found stability in the two-factor structure of SWB across various European contexts. However, this study adds a new dimension to our understanding that affective dominance among Indonesian students is not identical to the universal patterns found in other collectivistic societies. Graham & Eloff

(2022) and Bailey et al. (2023) also reported that academic stress, social relationships, and adaptive coping strategies greatly influence well-being during the pandemic. This study reinforces these findings by showing that well-being factors are indeed the primary foundation for Indonesian well-being, well-being in a competitive education system, and well-being amid a stressful academic environment.

Overall, this study makes a significant theoretical contribution to Diener's SWB model. The findings indicate that affective-cognitive duality is universal, but cultural, social, and institutional contexts strongly influence the extent to which indicators contribute to each dimension. This emphasises that SWB theory cannot be separated from the socio-cultural context in which the instrument is applied. Therefore, this study enriches the global literature on the adaptation and validation of cross-cultural psychological instruments.

From a practical standpoint, this validated instrument can be used to assess well-being in universities in Indonesia. This is important, as SWB is related to learning motivation, mental health, and academic performance (Kenny et al., 2023; Zapata-Lamana et al., 2021). Higher education institutions can utilise this instrument to identify students at risk of psychological distress, design evidence-based interventions, and evaluate the effectiveness of well-being Intervention programmes such as mindfulness training, emotional well-being regulation training, and community social activities have been shown to improve students' SWB (Fincham & Maranges, 2024; Zadok-Gurman et al., 2021), underscoring the importance of this instrument as a basis for designing the intervention.

Thus, this study not only contributes theoretically to the literature on SWB and psychometrics but also provides an instrument that is accurate, valid, and sensitive to Indonesian culture. This instrument can serve as a primary reference in further research, psychological assessments, and policies to improve student welfare in Indonesia.

Conclusion

The purpose of this study is to use Confirmatory Factor Analysis (CFA) to reconstruct and validate Diener's theory-based happiness scale for Indonesian university students. Strong model fit, excellent convergent validity, and consistent internal reliability across the Affective and Cognitive dimensions demonstrated that the instrument's adjustments greatly increased measurement accuracy. The resultant two-factor structure demonstrated that this instrument has strong representational ability in reflecting the pleasure experiences of Indonesian students and validated the stability of the theoretical model.

Additionally, this study found that emotional dynamics, academic load, and the caliber of social relationships are contextual elements that affect students' feelings of happiness. These results support the idea that student happiness is a complex phenomena impacted by both internal and external variables. Furthermore, the indicator contribution pattern demonstrates a significant local cultural influence, indicating that Indonesian students typically express satisfaction through emotive elements consistent with collectivist cultural beliefs.

From a methodological perspective, the use of a large sample (N = 811) provides additional support for the stability of parameter estimates and increases confidence in the generalisability of research findings. Thus, this study not only fills a gap in the literature on the validation of happiness instruments in Indonesia but also opens opportunities for longitudinal research examining the long-term relationship between happiness and students' quality of life.

Overall, this reconstructed happiness instrument has been proven to be valid, reliable, sensitive to cultural context, and relevant for research and practical application in higher education settings. This instrument can be used as a diagnostic and evaluative tool, as well as a basis for developing more targeted and evidence-based student welfare interventions.

Declarations

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Conflict of Interest

The author declares that there are no conflicts of interest regarding the publication of this article.

Ethical Approval and Informed Consent

This study was conducted in accordance with ethical standards for psychological research. Ethical approval was granted by the University Research Ethics Committee. All participants provided informed consent electronically prior to data collection, and participation was voluntary, anonymous, and confidential.

Author Contributions

The author worked independently and contributed to all aspects of the study:
Conceptualization, Methodology, Instrument Development, Data Collection, Formal Analysis, Validation, Writing – Original Draft, and Writing – Review & Editing.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

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Figures

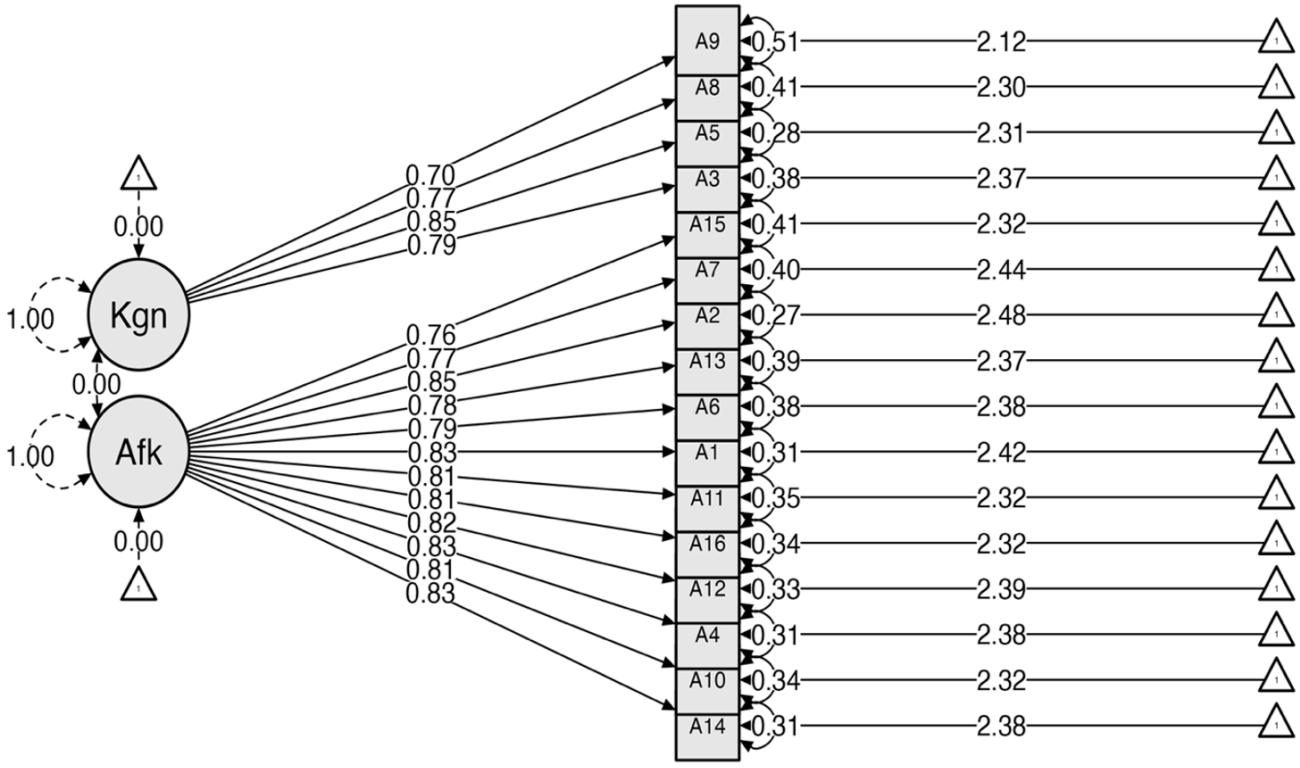


Figure 1

Model plot