

Measuring Faith Across Cultures: Development and Validation of a Religiosity Scale for Indonesian Adolescents

Diah Nova Anggraini¹, Nugraheni Iswara Adi², Gabriella Annira Kristy³, Hari Maryanto⁴,
Munawaratul Fi'liyah⁵, Wahyu Widhiarso⁶

Faculty of Psychology, Gadjah Mada University

Jl. Sosio Humaniora Bulaksumur, Daerah Istimewa Yogyakarta 55281, Indonesia. Phone. (0274) 522240, 522407, Fax. (0274) 550436.

Corresponding author

diahnovaanggraini@mail.ugm.ac.id

Abstract: Indonesia is a country where nearly the entire population adheres to a particular religion, making religiosity a central aspect of daily life. Religiosity is a multidimensional construct that plays a crucial role in adolescent development, particularly in contexts where religious beliefs and practices are deeply embedded in cultural identity. Despite its significance, measurement tools for religiosity in Indonesia remain limited, especially those designed to capture the construct across diverse religious backgrounds. This study aimed to develop and validate a multidimensional religiosity scale for Indonesian adolescents. A total of 209 adolescents from various regions in Indonesia participated in the study. Psychometric evaluation involved Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and reliability testing conducted using Jamovi. While the EFA initially suggested a four-factor structure, CFA confirmed a five-factor model consistent with Pearce, Hayward, and Pearlman's (2017) theoretical framework. The five dimensions included religious belief, religious exclusivity, personal practice, external practice, and religious salience. The revised multidimensional model demonstrated satisfactory fit indices (CFI = 0.932; TLI = 0.919; RMSEA = 0.061; SRMR = 0.053). Reliability analysis further indicated strong internal consistency, with both Cronbach's α and McDonald's ω exceeding the recommended threshold of 0.70. These findings demonstrate that the developed scale is both valid and reliable for assessing adolescent religiosity in Indonesia. The study contributes theoretically by expanding cross-cultural research on religiosity and highlighting its multidimensional nature beyond Western contexts. Practically, it provides a robust tool for researchers, educators, and practitioners to assess the role of religiosity in adolescent development, including its implications for resilience, psychological well-being, and social engagement.

Keywords: Religiosity, Adolescents, Indonesia, Psychometric Validation.

Introduction

In 2021, the Indonesian government reported that 236.53 million people, or approximately 86.88% of the population, identified with a particular religion (Kusnandar, 2021). This figure indicates that nearly 100% of Indonesians adhere to a specific faith. Globally, the Pew-Templeton Global Religious Futures Project Jensen (2021) similarly reported that about 80% of the world's population identifies as religious, while only around 20% describe themselves as non-religious. The significance of religiosity, together with the ongoing development of theories and dimensions of religious life, has led

to the evolution of numerous instruments designed to measure religiosity.

Despite this global importance, the theoretical development of religiosity and its measurement has been largely rooted in Western contexts. Although Allport first conceptualized religiosity in the 1950s, relatively few instruments have been developed within the Indonesian cultural setting. El Hafiz and Aditya (2021) emphasized that research on the validity and reliability of religiosity measures in Indonesia remains limited. Furthermore, the majority of influential studies, such as those by Glock and Stark (1965), the Fetzer Institute (1999), Huber and Huber (2012), and Pearce et al. (2017),

were conducted primarily in the United States and Europe. As a result, much of the existing literature and instruments continue to rely on Western-based conceptualizations of religiosity, which may not fully capture the cultural and religious diversity found in Indonesia.

Another limitation is that several instruments were developed with reference to the country dominant religion. For instance, Pearce et al. (2017) included items directly tied to Christian practices, such as: “About how often do you usually attend religious services [at first named church]?” Such items may lack relevance or comparability in non-Christian majority contexts. Certain religious concepts carry meanings that are not directly transferable across traditions. For example, the concept of fasting in Christianity is often associated with abstaining from specific types of food, whereas in Islam it refers to the practice of refraining from eating, drinking, and other physical or psychological gratifications as a form of worship (Alfian, 2022). These examples highlight the need to develop culturally sensitive instruments for assessing religiosity in Indonesia’s multi-religious society.

In Indonesia, attempts to develop religiosity scales have been carried out by Purnomo and Suryadi (2017) as well as (Suryadi & Hayat, 2021). Purnomo and Suryadi (2017) adapted the *Centrality of Religiosity Scale* (CRS) developed by Huber and Huber (2012), which measures five dimensions of religiosity: intellectual, ideological, public practice, private practice, and religious experience. Their study found suboptimal model fit indices, as indicated by an RMSEA value exceeding 0.10 across four dimensions of religiosity. In addition, Suryadi and Hayat, (2021) translated and further developed the *Muslim Daily Religiosity Scale* (MUDRAS), which was specifically designed for Muslim populations. While these instruments represent important progress, they remain limited either in terms of psychometric robustness or in their applicability to Indonesia’s multi-religious context.

The discussion above illustrates that theories of religiosity have evolved since Allport, (1950) and that various measurement tools have been developed. However, most existing instruments remain rooted in Western contexts and are less compatible with Indonesia’s cultural and religious

diversity. Moreover, the adaptation efforts undertaken by Purnomo and Suryadi (2017) and Suryadi and Hayat (2021) revealed limitations in terms of construct validity as well as the scope of religious representation. Furthermore, this study focuses on adolescents as participants because they are in a critical stage of identity transition and self-development, where religiosity can play a significant role in shaping their self-concept (Muchtar, 2019; Fuadah et al., 2024). Supporting this view, Therefore, this research seeks to develop and validate a multidimensional religiosity instrument that is psychometrically sound, culturally relevant, and applicable to adolescents in Indonesia.

Materials and Methods

Study area and participants

This research was conducted in Indonesia, focusing on environment where adolescents engage in daily academic and social activities, including schools, universities, and community-based youth settings. The study area reflects the socio-cultural context of Indonesian adolescents, particularly as it relates to the religious beliefs and practices. The participants of this study were male and female adolescents aged 12 to 21 years residing in Indonesia. A total of 209 adolescents participated, consisting of 60.8% females (127 individuals) and 39.2% males (82 individuals). They represented various educational levels, including junior high school, senior high school, and university. In addition, participants were required to adhere to a particular religion or belief system. The sampling technique employed was purposive sampling, which involves selecting respondents based on specific predetermined criteria (Sugiono, 2017). This approach ensured that the participants met the requirements relevant to the study’s objectives.

Procedures

This research employed a quantitative approach with data collected through questionnaires. A questionnaire is a data collection technique that involves providing participants with written questions or statements to be answered (Sugiono, 2017). The religiosity scale was administered using a Likert-type format ranging from 1 to 5, where 1

indicated *Strongly Disagree*, 2 indicated *Disagree*, 3 indicated *Neutral*, 4 indicated *Agree*, and 5 indicated *Strongly Agree*. After collection, the responses were screened for completeness, consistency, and compliance with the inclusion criteria. Once the data were cleaned and validated, they were prepared for subsequent statistical analysis.

Data analysis

The study aimed to modify the religiosity scale originally developed by Pearce et al. (2017). The modification process involved adjusting several items to ensure greater cultural and contextual relevance for the adolescent sample, including adding or removing items as necessary (Azwar, 2020). Data analysis was conducted using Classical Test Theory, namely Exploratory Factor Analysis and Confirmatory Factor Analysis. CFA was applied to test and validate the measurement model, identifying the most appropriate structure for the religiosity construct. Furthermore, reliability analysis was carried out using Cronbach’s α and McDonald’s ω to evaluate the internal consistency and reliability of the instrument.

Results and Discussion

Result

Exploratory Factor Analysis (EFA)

The first step in the data analysis was conducting an Exploratory Factor Analysis (EFA). EFA was employed to identify the underlying factor structure of the 46 items and to determine whether

the religiosity scale should be considered unidimensional or multidimensional. The results indicated that the scale demonstrated a multidimensional structure comprising four factors. The chi-square test yielded $\chi^2(741) = 3969, p < .001$, suggesting significant intercorrelations among the items and confirming the suitability of the dataset for factor analysis. Moreover, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.888, which exceeded the recommended threshold of 0.70. This result further confirmed that the sample size and correlation patterns were adequate for factor analysis (Heir et al., 2019).

Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was conducted to test and validate the measurement construct based on the existing theoretical foundation. The researchers evaluated four different models. The first model included all 46 items and represented a unidimensional construct. The second model was developed by retaining only the best-performing items from the unidimensional model, resulting in a total of 10 items. In the third model, all 46 items were re-specified within a multidimensional structure. Finally, the fourth model was constructed by retaining only the best-performing items from the multidimensional specification, based on the model’s goodness-of-fit (GoF) indices.

Table 1. Goodness-of-Fit Indices for Competing CFA Models

Model	χ^2	df	CFI	TLI	RMSEA	SRMR	BIC
Unidimensional	3000**	989	.498	.475	.099	.117	24909
Multidimensional	2254**	979	.682	.663	.079	.100	24217
Multidimensional (20 items)	282**	160	.932	.919	.061	.053	9458

Note. χ^2 = Chi-square goodness-of-fit statistic; df = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; BIC = Bayesian Information Criterion. $p < .001$.

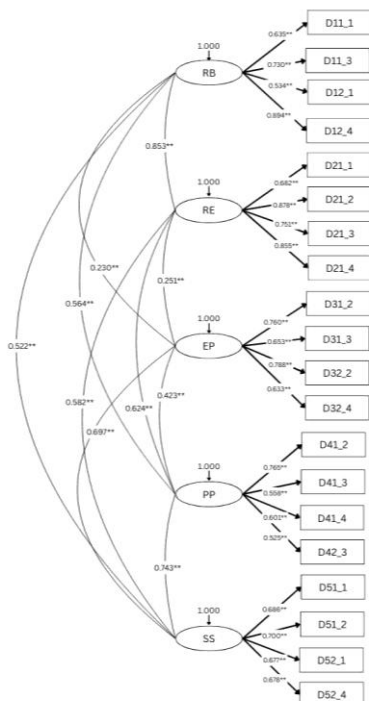
The results indicated that both the multidimensional and unidimensional models did not initially achieve satisfactory fit. However, when

comparing the two, the multidimensional model demonstrated superior fit relative to the unidimensional model. Specifically, the

multidimensional model yielded CFI = .682, TLI = .663, RMSEA = .079, and SRMR = .100, whereas the unidimensional model reported CFI = .498, TLI = .475, RMSEA = .099, and SRMR = .117 (Table 1). Although both models reflected suboptimal fit, the multidimensional structure provided comparatively better indices, particularly with an RMSEA approaching the acceptable threshold of .08 (Heir et al., 2019).

To improve model adequacy, the researchers eliminated items with factor loadings below .50 and those with high modification indices. The revised multidimensional model retained 20 items, all of which demonstrated satisfactory psychometric properties. The goodness-of-fit indices for this revised model were robust, with CFI = .932 and TLI = .919 exceeding the recommended threshold of .90, and RMSEA = .061 and SRMR = .053 falling below the recommended cutoff of .08 (Figure 1). These findings suggest that the revised multidimensional model provides a theoretically consistent and empirically strong representation of religiosity among Indonesian adolescents.

Figure 1. Multidimensional (20 items)



Reliability

Reliability was assessed using Jamovi by examining Cronbach's α and McDonald's ω for the multidimensional model (20 items). The analysis produced a standard deviation of 0.530. The

reliability results demonstrated satisfactory internal consistency, with Cronbach's α = .875 and McDonald's ω = .898. Furthermore, the 20-item scale yielded reliability coefficients exceeding .80 for both Cronbach's α and McDonald's ω , confirming that the instrument possesses strong reliability (McDonald, 1999; Shelby, 2011).

Discussion

This study aimed to modify a religiosity measurement instrument for adolescents within the Indonesian context. Exploratory Factor Analysis (EFA) was conducted to explore the underlying factors of the instrument's items (Furr & Bacharach, 2013). This test examined the Kaiser-Meyer-Olkin (KMO) measure and the Chi-square statistic to ensure adequate sampling for EFA and the absence of inter-item dependency (Heir et al., 2019). The results indicated that the sample was adequate, with a KMO value above 0.8 and a significance level below 0.05, providing empirical support for the robustness of the dataset and the appropriateness of conducting EFA (Heir et al., 2019).

The EFA results in this study revealed only four dimensions, differing from the five dimensions of religiosity identified by Pearce et al. (2017). This discrepancy arose because the dimensions of religious belief and religious exclusivity merged into a single factor, indicating that adolescents tend to perceive their religious beliefs and exclusive attitudes toward the truth of their religion as closely interconnected. However, since EFA is exploratory and primarily groups items based on participants' response patterns (Howard, 2016), these findings alone are insufficient to serve as a basis for the final measurement model. Therefore, the study proceeded to test the five-dimensional structure through Confirmatory Factor Analysis (CFA), which showed that the five-factor structure proposed in previous theory could be empirically retained and remained consistent with cross-cultural findings.

The CFA compared unidimensional and multidimensional models. In both initial models, the goodness-of-fit (GoF) indices were suboptimal, with CFI and TLI values below 0.90, and SRMR and RMSEA exceeding 0.08. These results indicated that neither the initial unidimensional nor multidimensional models adequately captured the

complexity of the religiosity construct. In contrast, the revised multidimensional model demonstrated substantially better fit, with CFI and TLI exceeding 0.90, and SRMR and RMSEA below 0.08, indicating an excellent fit according to established guidelines (Hair et al., 2019; Bentler & Bonett, 1980). This improvement was also supported by a lower Bayesian Information Criterion (BIC) for the revised model, which helps mitigate potential overfitting issues (Wu et al., 2020). Most importantly, retaining the five-factor structure in the revised model aligned with theoretical expectations (Pearce et al., 2017) and cross-cultural evidence conceptualizing religiosity as a multidimensional construct (Hayward, 2021). Furthermore, the selected multidimensional model produced dimensions consistent with the original theory, each consisting of four items with strong construct validity.

Finally, reliability analysis was conducted to determine whether the religiosity instrument was consistent and dependable. The reliability analysis of the multidimensional model (20 items) showed Cronbach's α values exceeding 0.70, indicating that the instrument is reliable (Shelby, 2011). Furthermore, based on McDonald's ω , the instrument can be considered good, as ω values surpassed Cronbach's α (McDonald, 1999). McDonald's ω exceeded Cronbach's α across all subscales, confirming the internal consistency and stability of the measurement model (Hayes & Coutts, 2020). These findings suggest that the religiosity instrument not only demonstrates strong reliability but also holds substantial potential for cross-cultural application in future religiosity studies.

The development of a five-dimensional, interrelated religiosity instrument makes a significant contribution to the cross-cultural psychology literature, particularly within the Indonesian context. It highlights that expressions of religiosity carry distinct cultural nuances, underscoring the importance of considering cultural context when validating Western-derived theories. Moreover, the findings can inform psychologists, educational institutions, and policymakers in designing training, assessments, and value-based programs that are more inclusive across different religious backgrounds.

Nevertheless, this study is limited to adolescent samples from selected regions in Indonesia, so generalizing the findings to older populations should be done cautiously. Additionally, this study focused solely on construct validity; future research should examine predictive validity to assess the instrument's ability to forecast psychological outcomes. Finally, although the five-dimensional structure is supported by empirical and theoretical evidence, the tendency of EFA to merge two dimensions suggests possible differences in how respondents interpret religiosity. This calls for further research using multi-group analysis or longitudinal approaches to test the stability of the construct.

Conclusions

In conclusion, the development of the religiosity instrument demonstrates sound psychometric properties. The EFA and CFA results indicate that the multidimensional 20-item model of religiosity is appropriate and aligns well with the aspects outlined by Pearce, Hayward, and Pearlman (2017). The retained five-dimensional model is supported by adequate goodness-of-fit indices (CFI and TLI > 0.90; RMSEA and SRMR < 0.08) and demonstrates theoretical consistency across cultures. Furthermore, reliability analyses using Cronbach's α and McDonald's ω confirm that the instrument is dependable. Overall, the 20 items effectively represent five aspects: religious belief, religious exclusivity, external practice, personal practice, and the importance of religiosity. Therefore, religiosity is conceptualized as a multidimensional construct that must be comprehensively understood within the local cultural context.

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