

Psychometric Properties of the Indonesian Version of Religious Orientation Scale in Muslim Adolescents Sample

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Abstract

This study aimed to validate the Indonesian version of the Religious Orientation Scale (ROS-I), an adaptation of [Allport & Ross's \(1967\)](#) measure of intrinsic and extrinsic religious orientation, using the Rasch model analysis. ROS-I, which consists of two subscales: Intrinsic Religious Orientation (IRO) and Extrinsic Religious Orientation (ERO) was tested to 410 Muslim adolescents from the Greater Jakarta area using online questionnaire. The psychometric evaluation showed that the ROS-I had good index of person and item separation, unidimensional construct, local independence, good item fit index, and good distributions for its rating scales. Therefore, the ROS-I has generally proven to be a valid and reliable tool for evaluating two aspects of religious orientation in Indonesian Muslim adolescents. However, this study restriction to Muslim adolescents' population may limit its generalizability that calls for broader and more diverse population for future research. Nevertheless, the validated ROS-I offers a useful assessment of religious orientation in Indonesia and similar cultural settings.

Keywords: extrinsic religious orientation, Indonesian adolescents, intrinsic religious orientation, rasch model, religious orientation

Abstrak

Penelitian ini bertujuan untuk memvalidasi versi Indonesia dari Skala Orientasi Religius/Religious Orientation Scale (ROS-I), sebuah adaptasi dari alat ukur Religious Orientation milik [Allport & Ross \(1967\)](#), menggunakan analisis model Rasch. ROS-I, terdiri dari dua subskala: Intrinsic Religious Orientation (IRO) dan Extrinsic Religious Orientation (ERO), diberikan kepada 410 remaja Muslim dari wilayah Jabodetabek melalui kuisioner daring. Evaluasi psikometrik menunjukkan indeks unidimensionalitas, local independence, item fit, person item separation reliability, dan rating scale diagnostics yang baik. Artinya, ROS-I secara umum terbukti sebagai alat ukur yang valid dan reliabel dalam mengukur dua aspek orientasi religius pada remaja Muslim Indonesia. Akan tetapi, populasi yang terbatas pada remaja Muslim Indonesia dapat menghalangi generalisasi penelitian di masa yang akan datang sehingga riset berikutnya perlu dilakukan pada populasi yang lebih luas dan beragam. Meskipun demikian, ROS-I yang terbukti valid dapat menjadi alat ukur yang bermanfaat terkait konstruk orientasi religius di Indonesia dan pada latar budaya yang serupa.

Kata kunci: model rasch, orientasi religius, orientasi religius intrinsik, orientasi religius ekstrinsik, remaja Indonesia

Introduction

In Indonesia, where 87.2% of the population identifies as Muslim ([Badan Pusat Statistik, 2024](#)), religion plays a particularly prominent role in shaping cultural values and individual behavior. This influence is particularly salient during adolescence, a developmental stage marked by identity exploration and value formation ([Damon et al., 2003](#)). For Indonesian adolescents, religious beliefs and practices often serve as key components in constructing personal identity, guiding social relationships, and informing moral reasoning ([Elsayed et al., 2023](#); [Stavrova & Siegers, 2014](#); [White et al., 2021](#); [Amalia et al., 2023](#)). Understanding how adolescents orient themselves religiously, whether intrinsically or extrinsically, is therefore critical in comprehending broader aspects of adolescent psychological development, especially in Indonesian context. Moreover, empirical studies have consistently demonstrated that religious orientation—whether intrinsic, where faith is an integral part of one's identity, or extrinsic, where religion serves instrumental purposes—exerts an influence across different age groups. Both intrinsic and extrinsic religious orientations provide Muslim teenagers in Indonesia with perspectives on how their faith could influence their daily lives, ranging from social interactions in their communities to personal spirituality ([Damon et al., 2003](#)). Furthermore, prior studies have indicated that both IRO and ERO can significantly influence mental health outcomes, social behavior, and value systems in adolescents ([Saroglou, 2014](#)). Despite the relevance of these constructs, little is known about how religious orientation functions among Indonesian adolescents, particularly given the unique cultural and religious landscape of the country.

Religious orientation is a concept that has been extensively explored in the field of psychology. It describes the purpose and direction of a person's religious beliefs and behaviors ([Nadhifah & Wahyuni, 2020](#)). Religious orientation has long been known to have a big impact on how people behave, think, and see the world ([Allport & Ross, 1967](#)). In psychology, two main aspects of religious orientation intrinsic and extrinsic have been taken into consideration. The term "intrinsic religious orientation" (IRO) describes how people internalize their religious beliefs and use them as a means of achieving both their own and their spiritual goals. Extrinsic religious orientation (ERO), on the other hand, refers to the use of religion as a means to an objective, such as obtaining support, social acceptance, or higher personal standing ([Allport & Ross, 1967](#); [Arrowood et al., 2022](#); [Fauzi & Rahmani, 2017](#)). These two perspectives provide a framework for understanding how the religious inclinations of teenagers may impact their overall psychological outcomes.

To date, research on religious orientation has been heavily dominated by Western samples, ([Doane et al., 2014](#); [García-Alandete et al., 2019](#); [Gonçalves et al., 2018](#); [Vats et al., 2021](#); [You & Lim, 2019](#)), particularly using the Religious Orientation Scale (ROS) developed by [Allport & Ross \(1967\)](#). While the ROS has demonstrated satisfactory psychometric properties in Western contexts, its applicability in non-Western and Muslim-majority populations remains underexplored. In particular, psychometric evaluations of ROS in Indonesian samples are scarce, and existing studies have focused predominantly on adult populations, often overlooking the distinct cognitive, emotional, and social dynamics of adolescence. Moreover, the psychometric evaluation of ROS in adolescent populations has not been thoroughly explored, despite the developmental importance of religion during adolescence. While some studies have attempted to adapt ROS for use in Indonesia, these efforts have largely relied on classical test theory (CTT) and confirmatory factor analysis ([Brewczynski & MacDonald, 2006](#); [Kamaluddin et al., 2017](#); [Khodadady et al., 2012](#)), which pose several methodological limitations.

From a psychometric perspective, CTT-based approaches present challenges in cross-cultural adaptation and instrument validation. First, CTT assumes that measurement properties such as reliability and validity are sample-dependent, thereby limiting the generalizability of findings ([Bond & Fox, 2015](#)). Second, CTT treats ordinal raw scores as interval data, which may reduce the precision of measurement and compromise the interpretation of score differences. Third, CTT does not provide detailed item-level diagnostics, making it difficult to assess whether individual items function effectively across diverse

populations. These limitations underscore the need for more rigorous measurement models that can provide sample-independent estimates and more accurate assessments of scale properties, particularly in culturally specific contexts.

To address these limitations, Item Response Theory (IRT) models, particularly the Rasch model, offer significant advantages. The Rasch model allows for the conversion of ordinal scores into interval-level data and provides sample-independent estimates of item difficulty and person ability ([Linacre, 2019](#)). Moreover, it enables detailed analysis of item fit, rating scale functioning, and person-item reliability, offering valuable insights into the psychometric quality of an instrument. These features make the Rasch model particularly well-suited for validating religious orientation measures in non-Western adolescent populations, where cultural factors may influence the interpretation and endorsement of items. By using Rasch Model, researchers can obtain more accurate and valid data when measuring intrinsic and extrinsic religious orientations in Indonesian teenagers by using the Rasch model. This allows for a deeper comprehension of how these constructs appear in this particular cultural setting. Additionally, the Rasch model enables an evaluation of item fit and misfit, guaranteeing that the instrument's items are operating as intended and offering significant insights into the population being studied.

The aim of this study is to evaluate the psychometric properties of an Indonesian adaptation of the Religious Orientation Scale (ROS) by [Allport & Ross \(1967\)](#) using the Rasch measurement model in a sample of Muslim adolescents. Given the scarcity of validated instruments for assessing religious orientation in this demographic, and the limitations of prior CTT-based evaluations, this study seeks to fill a significant gap in the literature. Through the application Rasch model, this study will examine item fit, person and item separation reliability, and rating scale diagnostics to ensure that the adapted instrument is both psychometrically sound and culturally appropriate. We predict that the ROS-I will maintain strong psychometric properties within the Indonesian Muslim adolescents population, aligning with previous research that established the scale's robustness across different cultural and religious groups. By contributing to the development of valid and reliable tools for measuring religious orientation in Indonesian adolescents, this research would enhance the understanding of religiosity during adolescence, support future psychological research, and inform educational and clinical practices in culturally diverse settings.

Methods

Participants and Research Design

This study employed a quantitative, cross-sectional design to assess the psychometric properties of the Indonesian version of the Religious Orientation Scale (ROS). The sample involved 410 Muslim adolescents aged 15 to 18 years old ($M = 16.83$, $SD = 1.03$) who lived in Indonesia's Greater Jakarta region. The majority of participants were female (76%) and all of the participants were enrolled in public or private secondary schools in the Greater Jakarta area and identified as Muslims.

While the sample size was deemed sufficient for Rasch model analysis—which typically requires at least 200 participants to obtain stable estimates—the absence of a formal power analysis is noted as a limitation. Additionally, the use of convenience sampling may restrict the generalizability of findings due to potential homogeneity in socioeconomic background and geographical representation. Nevertheless, the inclusion criteria ensured participants' ability to comprehend and respond meaningfully to the religious orientation items.

Instruments

[Allport & Ross \(1967\)](#) developed the Religious Orientation Scale (ROS) consists of 21 items to assess the participants' extrinsic and intrinsic religious orientations. In psychological research, the ROS is a commonly used tool for evaluating the underlying reasons for people's religious activities and beliefs. Extrinsic Religious Orientation (ERO) and Intrinsic Religious Orientation (IRO) are the two subscales that make up the scale. The IRO subscale, which includes sample items, such as "My faith involves all of

my life," gauges how much people internalize their religious beliefs as an end in and of themselves. On the other hand, the ERO subscale measures how often people utilize religion to obtain benefits from outside sources. For example, one item on the subscale reads, "I go to church mainly because it helps me make friends."

For this study, the ROS was adapted into *Bahasa Indonesia* (Indonesian Language), comprising 21 items rated on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). The original 5-point scale was modified to a 4-point scale to minimize central tendency bias, a response pattern where participants default to the midpoint option regardless of their true perspective of the measured construct (Chyung et al., 2017; Taherdoost, 2019).

The modified scale consisted of the original 21 items, 9 IRO items and 12 ERO items, with some items being modified into Indonesian Muslim context. For example, Extrinsic Religious Orientation (ERO) item, "I go to church mainly because it helps me make friends", was modified into "Places of worship are important and good places to strengthen social ties" or "*Tempat ibadah adalah tempat yang penting dan baik untuk mempererat hubungan sosial*" in Bahasa. The "church" was replaced with "place of worship" to fit more into Muslim context. Other IRO and ERO items involving "church" and "Bible" were modified into "place of worship" (*tempat ibadah*) and "scripture" (*kitab suci*) respectively.

Translation and Adaptation Process

In the translation process, forward translation was performed by an undergraduate Linguist student with a TOEFL score of 582 to ensure an accurate and understandable initial translation. For backward translation, a professor with international experience in instrument validity conducted the process to ensure the translated items maintained their original meaning and clarity. To ensure participant engagement and data integrity, two attention check items were embedded within the questionnaire (e.g., "Choose 'strongly disagree' from the rating scale below"). Participants who failed either attention check were excluded from the analysis. In accordance with the original instrument guidelines, the 21 items were randomized in the final questionnaire to mitigate potential order bias.

Ethical Considerations

Although this study did not obtain formal ethical clearance from an institutional review board, all research procedures adhered to ethical standards for human research. Participants provided informed consent, and where applicable, parental consent was also obtained. Participants were informed that their participation was voluntary and that they could withdraw at any point without penalty. The study ensured anonymity and confidentiality of participant data, and all responses were used exclusively for research purposes. As the study involved self-report questionnaires on non-sensitive topics, minimal risk was anticipated, and no harm was incurred by participants during the study.

Data Analysis

The data were analyzed using the Rasch measurement model, specifically employing the Partial Credit Model (PCM) to accommodate the Likert-type response format of the ROS. Rasch analysis allowed for the estimation of item difficulty and person ability on a common logit scale and enabled the evaluation of the psychometric performance of each item in the adapted scale. Item fit was assessed using infit and outfit mean square (MNSQ) statistics, with values between 0.5 and 1.5 considered acceptable. In addition, person and item separation reliability indices were calculated to evaluate the scale's ability to distinguish between varying levels of religious orientation among respondents. The analysis was conducted using WINSTEPS software, applying Joint Maximum Likelihood Estimation (JMLE) for parameter estimation. Further details of Rasch analysis procedures and results are presented in the subsequent section.

Results and Discussion

Results

This section comprises of six finding sections, namely 1) Assessment of unidimensionality assumption; 2) Local independence assumption using Q3 method; 3) Rating scale diagnostics for the Intrinsic Religious Orientation (IRO) and Extrinsic Religious Orientation (ERO) subscales; 4) Item infit and outfit determined by the mean square (MNSQ) and Z-Standardised (ZSTD); 5) Summary statistics (person's and item's separation as well as reliability); and 6) Wright Map of each subscale. Each section will articulate the results for both subscales, starting from IRO and followed by ERO.

Unidimensionality

Unidimensionality refers to whether a test accurately measures the specific latent variable. It is designed to assess and not unintended constructs ([Aryadoust et al., 2020](#)). We use the criteria of variance explained with the size of 20% - 40% as an acceptable range, > 40% is good, and > 60% as excellent in providing the evidence of unidimensionality ([Ahmad & Siew, 2021](#); [Holster & Lake, 2016](#)). The observed explained variance by measures for Intrinsic Religious Orientation (IRO) was 35.7% (first contrast eigenvalue = 1.6089), shared by persons (17.5%) and items (18.2%). Meanwhile, Extrinsic Religious Orientation (ERO) showed the observed explained variance by measures size of 43% (first contrast eigenvalue = 2.5), shared by persons (15.3%) and items (27.9%). According to both results, the assumption of unidimensionality is fulfilled and further analysis shall be conducted.

Local Independence

Local independence assumes that for individuals with a given ability level, performance on one item does not affect performance on other items ([Mair, 2018](#)). We employed the Q3 method by [Yen \(1984\)](#). Local independence was determined using Q3 coefficient obtained from the correlations between items' residuals with the criteria of Q3 coefficient is not larger than |.3| as indication of an acceptable degree of local independence ([Fan & Bond, 2019](#); [Yen, 1984](#)). The results of Q3 analysis are shown in the **Table 1**.

Table 1 show that all items' local independence was fulfilled (Q3 coefficient < |.3|). The results of item pairs' residuals correlation for both intrinsic and extrinsic religious orientation indicate no dependency on one another. In conclusion, the answers from Indonesian Muslim adolescent participants on each item do not depend on the answer of other items. Thus, local independence was fulfilled.

Table 1. Q3 Analysis for Religious Orientation Scale

Intrinsic Religious Orientation		Extrinsic Religious Orientation	
Q3 Coef.	Item Pairs	Q3 Coef.	Item Pairs
-.28	Item 3 and Item 8	.30	Item 2 and Item 3
-.25	Item 5 and Item 8	.28	Item 1 and Item 2
-.23	Item 6 and Item 9	-.39	Item 3 and Item 10
-.23	Item 3 and Item 7	-.31	Item 2 and Item 10
-.23	Item 3 and Item 6	-.30	Item 1 and Item 10
-.22	Item 1 and Item 3	-.29	Item 8 and Item 9
-.21	Item 4 and Item 8	-.29	Item 2 and Item 8
-.21	Item 1 and Item 9	-.28	Item 3 and Item 5
-.21	Item 4 and Item 5	-.28	Item 2 and Item 5
-.21	Item 2 and Item 8	-.27	Item 7 and Item 9
-.19	Item 6 and Item 8	-.27	Item 3 and Item 7
-.19	Item 5 and Item 9	-.27	Item 1 and Item 5
-.18	Item 2 and Item 9	-.24	Item 5 and Item 9
-.18	Item 3 and Item 9	-.24	Item 5 and Item 11
-.16	Item 7 and Item 9	-.22	Item 1 and Item 8
-.15	Item 4 and Item 8	-.22	Item 9 and Item 10
-.15	Item 2 and Item 7	-.21	Item 5 and Item 12
-.14	Item 5 and Item 7	-.21	Item 2 and Item 7
-.14	Item 2 and Item 3	-.20	Item 10 and Item 11
-.13	Item 4 and Item 7	-.19	Item 8 and Item 11

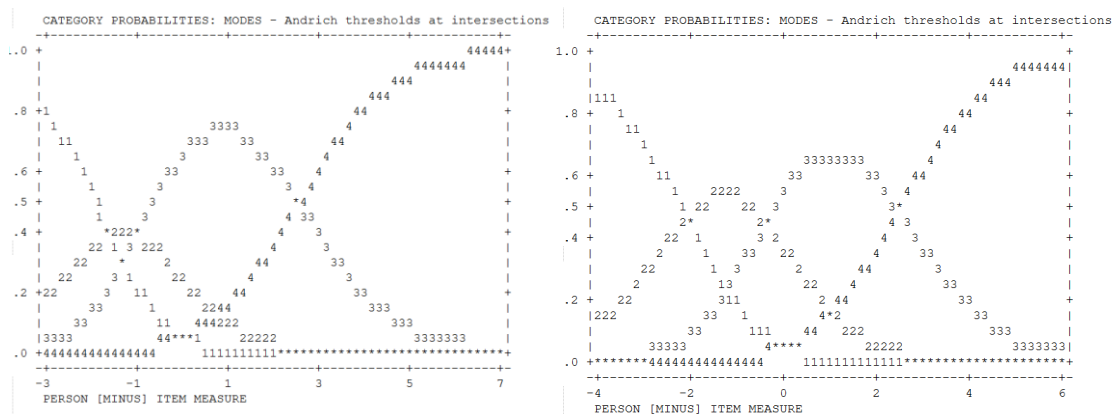
Rating Scale Diagnostics

Religious Orientation Scale (ROS) uses a 4-Likert rating scale which consists of “1 = strongly disagree”, “2 = disagree”, “3 = agree”, and “4 = strongly agree”. We conducted a rating scale diagnostic that aims to analyze the response patterns of participants. This diagnostic aimed to provide information on how effectively respondents discerned and utilized the various categories within the Likert scale across each subscale. The Rasch model ensures that the intervals between response categories are meaningful, reflecting the underlying latent constructs, whether intrinsic (internalized faith) or extrinsic (externally motivated religious behavior) (Dwiliesanti & Yudianto, 2022). This also ensures that the scale provides reliable and consistent measures of the respondents' orientation within each subscale. The results of the rating scale diagnostic for each dimension are shown below:

Table 2. Rating Scale Diagnostics of Religious Orientation Scale

Dimension	Rating Scale	f	%	Average Measure	Infit MNSQ	Outfit MNSQ	Threshold
Intrinsic Religious Orientation	1	78	2	.14	1.27	1.52	NONE
	2	352	10	.32	1.05	1.10	-1.56
	3	1965	53	1.17	.87	.86	-1.00
	4	1295	35	2.87	.94	.92	2.56
Extrinsic Religious Orientation	1	163	3	-.04	1.77	2.04	NONE
	2	806	16	-.14	.84	.83	-2.07
	3	2358	48	1.25	.92	.95	-.39
	4	1593	32	2.81	.91	.91	2.46

As shown in **Table 2**, the frequency distribution exhibits a negative skew, indicating a tendency for participants to choose higher response categories. The thresholds were determined accurately, following a consistent increase from the more negative to more positive values across the four response categories. Additionally, the infit and outfit values remained below the threshold of 2.0 for all items except ERO1 (Outfit MNSQ = 2.04), further reinforcing the precision of the rating scale (Linacre, 2010). In general, the data aligns well with the Rating Scale Model (RSM). The response categories curve is shown to be distributed more towards the higher response categories in **Figure 1**.

**Figure 1.** Response Category Curve of IRO (Left) and ERO (Right)

Item Fit

To make sure that the items from both subscales fit the predicted measurement model, we assessed the item fit inside the Rasch model using infit, outfit, and point measure statistics. The recommended MNSQ range for outfit and infit is between .5 to 1.5 (Dülger, 2020). We also looked at the point-measure correlation (PT-MEA), which shows the direction and intensity of the relationship between a single item and the entire construct being measured, in addition to infit and outfit statistics. Positive point-measure correlations in the Rasch model imply that respondents with higher ability levels typically endorse items correctly or perform better on more challenging tasks, as would be predicted. Point-measure correlations

should generally be in the range of .4 to .85 and be positive (Fisher, 2007). The result of the item fit analysis on the IRO and ERO is presented in **Table 3** (see Appendix A for the original instrument in English).

Tabel 3. Rasch Item Fit Statistics of IRO and ERO

	Items	Measure	SE	Infit MNSQ	Outfit MNSQ	PTMEA
A. Intrinsic Religious Orientation (IRO)						
3	<i>Doa-doa yang saya panjatkan ketika saya sendirian membawa banyak makna dan memunculkan emosi pribadi</i>	.97	.08	1.42	1.56	.54
9	<i>Jika tidak ada halangan, saya akan beribadah ke tempat ibadah</i>	.43	.09	1.39	1.47	.55
5	<i>Keyakinan agama saya adalah tolak ukur untuk seluruh hal yang saya lakukan dalam kehidupan</i>	.14	.09	1.11	1.10	.59
8	<i>Jika saya bergabung dengan kelompok tempat ibadah, saya lebih banyak bergabung dengan (1) kelompok Pembelajaran Kitab Suci, daripada (2) kelompok sosial</i>	.82	.08	.93	1.01	.58
2	<i>Saya sangat menyadari kehadiran Tuhan atau Wujud Ilahi</i>	-1.19	.11	.99	.95	.55
1	<i>Saya berusaha keras untuk menerapkan nilai agama saya ke dalam semua urusan saya yang lain dalam hidup.</i>	-.16	.10	.83	.92	.59
4	<i>Penting bagi saya menyisihkan waktu untuk menghayati nilai keagamaan dan meditasi pribadi</i>	-.13	.10	.76	.75	.66
6	<i>Agama sangat penting bagi saya karena agama menjawab banyak pertanyaan tentang makna hidup</i>	-1.07	.10	.76	.76	.60
7	<i>Saya membaca literatur tentang iman (atau tempat ibadah)</i>	.21	.09	.67	.66	.63
B. Extrinsic Religious Orientation (ERO)						
5	<i>Meskipun saya orang yang religius, saya menolak untuk membiarkan nilai agama mempengaruhi urusan saya sehari-hari.</i>	2.05	.09	1.50	1.59	.47
10	<i>Agama membantu menjaga keseimbangan dan stabilitas hidup saya dengan cara yang persis sama seperti cara kewarganegaraan, persahabatan, dan kemasyarakatan saya lainnya.</i>	1.67	.08	1.33	1.44	.48

3	<i>Agama menawarkan kenyamanan ketika kesedihan dan kemalangan melanda saya.</i>	-.89	.09	1.15	1.19	.46
1	<i>Tempat ibadah adalah tempat yang penting dan baik untuk mempererat hubungan sosial</i>	-.64	.09	1.03	1.11	.46
8	<i>Saya merasa perlu untuk mengkompromikan keyakinan agama saya untuk melindungi kesejahteraan sosial dan ekonomi saya.</i>	.84	.08	1.05	1.07	.56
7	<i>Alasan utama ketertarikan saya pada agama adalah karena tempat ibadah saya memiliki kegiatan sosial yang menyenangkan.</i>	.48	.08	1.01	.99	.64
4	<i>Apa yang saya yakini bukan sesuatu yang perlu dipermasalahkan selama saya menjalani kehidupan moral.</i>	.14	.09	.84	.92	.52
6	<i>Saya berdoa terutama karena saya telah diajarkan untuk berdoa</i>	-.63	.09	.90	.84	.57
9	<i>Tujuan utama dari doa adalah untuk mendapatkan kelegaan dan perlindungan.</i>	-1.23	.10	.78	.90	.52
2	<i>Tujuan berdoa adalah untuk menjamin kehidupan yang bahagia dan damai.</i>	-1.27	.10	.83	.84	.51
12	<i>Salah satu alasan saya menjadi anggota tempat ibadah adalah karena hal tersebut membantu mengembangkan seseorang di sebuah komunitas atau perkumpulan sosial</i>	.11	.09	.82	.81	.63
11	<i>Agama membantu menjaga keseimbangan dan stabilitas hidup saya dengan cara yang persis sama seperti cara kewarganegaraan, persahabatan, dan kemasyarakatan saya lainnya.</i>	-.61	.09	.63	.69	.60

As shown in **Table 3**, most of the items fall within the predicted boundaries, indicating that the test operates well within the Rasch framework even with the modest mismatch in a few items. In order to improve their alignment with the model, items with outfit mean square values slightly above 1.3 will be watched in subsequent iterations. Their wording or content may need to be changed to more uniformly convey the construct across a range of skill levels.

Misfit item analysis, however, reveals that problematic outfit values of 1.56 and 1.59 (> 1.50) are displayed by IRO 3 and ERO 5, respectively. These variations imply that some respondents might not have interacted with some items as anticipated, possibly because of misreading the item or finding a discrepancy between what was written in the item and what they personally experienced. Furthermore, the value of point-measure correlation of all items are in the range between .4 - .85, indicating no miscoding detected and all items measure the IRO and ERO as intended.

Person and Item Summary Statistics

The items and person summary statistics for the intrinsic religious orientation (IRO) subscale show that the items' difficulty ranges from -1.19 logits to .97 logits, indicating that the items' difficulty is

normally distributed. The persons' ability ranges from -1.09 logits to 6.13 logits, and the mean person measure shows a positive score of 1.84 ($SD = 1.38$), indicating that a larger number of persons (Indonesian Muslim adolescents) highly endorsed intrinsic religious orientation in their lives, which can also be seen from the Wright Item-Person Map (see Figure 2). The Wright Map in Figure 2 shows that respondents' ability (person measure on the left) relatively surpasses the item difficulties (item measure on the right). The most difficult item is IRO 3, "*Doa-doa yang saya panjatkan ketika saya sendirian membawa banyak makna dan memunculkan emosi pribadi.*" The easiest item is ROI 2, "*Saya sangat menyadari kehadiran Tuhan atau Wujud Ilahi.*"

For the Extrinsic Religious Orientation (ERO) subscale, the items' difficulty ranges from -1.27 logits to 2.05 logits, and the persons' ability ranges from -0.93 logits to 6.69 logits. The mean person measure for ERO is 2.34 ($SD = 1.52$), suggesting that a substantial number of respondents strongly endorsed extrinsic religious orientation in their lives. As with IRO, the Wright Map (see Figure Y) shows that the respondents' ability (person measure on the left) exceeds the item difficulties (item measure on the right). The most difficult item in the ERO subscale is ERO 5, "*Meskipun saya orang yang religius, saya menolak untuk membiarkan nilai agama mempengaruhi urusan saya sehari-hari,*" while the easiest item is ERO 2, "*Tujuan berdoa adalah untuk menjamin kehidupan yang bahagia dan damai.*"

Through summary statistics ($N = 410$), the person separation index for the IRO subscale is 1.65, with a reliability of .73, indicate that there are at least 1.65 levels of ability among the sample. The relatively moderate reliability (.6 - .8) suggests that ability levels among the persons are varied enough (Othman et al., 2014). For the ERO subscale, the person separation index is 1.83, with a reliability of .77, indicating slightly greater variation in ability levels compared to IRO. Item separation and reliability for the IRO subscale are 7.16 and .98, respectively, while for the ERO subscale, item separation is 11.47, with a reliability of .99. This indicates that both subscales have multiple levels of item difficulty and demonstrate high item reliability (Aryadoust et al., 2020; Linacre, 2019; Saal et al., 1980).

Overall, according to the Wright map, most respondents scored high on both religious orientation subscales, and they also had strong person-item reliability ratings. This suggests that the majority of Indonesian Muslim young respondents had a strong religious orientation, both extrinsically (seeing religion as a way to get social or material rewards) and intrinsically (seeing religious rituals and beliefs as essential to their life). The scale's validity in identifying religious orientation within the sample is further supported by the excellent reliability scores, which imply that the measures for these respondents were reliable and consistent.

As shown in **Figure 2**, the left side of the vertical logit line shows the distribution of persons, and the right side represents the distribution of items. The top part across the logit line demonstrates the person who highly endorsed the IRO and ERO on the right side and the most difficult items on the left side. Each "#" represents five participants for IRO and four for ERO, while each "." represents one to four for IRO and one to three respondents for ERO (Alhadabi et al., 2021).

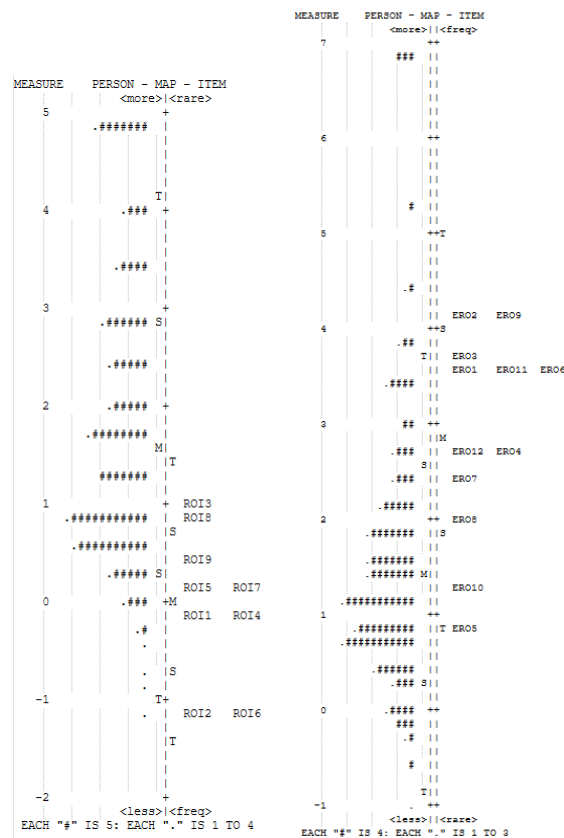


Figure 2. The Wright Item-Person Map for the Intrinsic Religious Subscale (Left) and the Extrinsic Religious Subscale (Right)

Discussion

This study demonstrated the validity and reliability of the Indonesian version of Religious Orientation Scale (ROS-I) in adolescent sample, an adapted instrument used to examine the intrinsic and extrinsic religious orientation of Indonesian Muslim youth. The findings supported the hypothesis that the ROS-I maintains strong psychometric properties within this population, aligning with previous research that established the scale's robustness across different cultural and religious groups. However, the results also highlighted areas where the scale may require refinement, particularly regarding item misfit.

IRO 3's and ERO 5's outfit mean square (MNSQ) values, however, showed a slight misfit and were higher than the acceptable range. IRO 3 translates to "My prayers are deeply meaningful and elicit personal feelings when I'm by myself," which emphasizes a particularly private and introspective aspect of religious activity. The misfit in this item may stem from its emphasis on emotional and personal spirituality, which may not resonate equally with responders. Religious practices in Indonesian society might be more socially oriented (Arlı & Tjiptono, 2014; Sakai & Fauzia, 2013; Syahid et al., 2024), emphasizing group activities over very private or emotional experiences, mainly among adolescents. Given that some teenagers do not regularly pray in private or with considerable passion, this item could not always fit. Furthermore, the diversity of responses could be explained by teens' difficulty in fully expressing the abstract nature of the emotions connected to prayer.

On the contrary, ERO 5, "Even though I am religious, I refuse to let religious values influence my daily affairs", may not fit because of its directness and harsh tone. The phrasing might have led participants to interpret the item differently based on their views on the harmony between religious beliefs and practical life decisions. Some respondents may perceive a distinction between religious values and daily affairs as a natural separation, while others may see the statement as conflicting with their integrated religious identity. This variability in interpretation could explain the unexpected response patterns.

Furthermore, the abstract nature of the emotions linked to prayer may have contributed to response inconsistencies among adolescents, who might struggle to articulate such experiences.

Compared to traditional test theory (CTT), the Rasch model analysis offered deeper insights into the psychometric qualities of the scale, enabling a more sophisticated comprehension of item fit, scale validity, and reliability. While CTT focuses on sample-based statistics, the Rasch model allows for more precise item-level analysis, which helps detect misfitting items and give a better illustration of how the scale functions across various respondent ability levels. This approach enhances the generalizability of results and ensures a more precise measurement of the religious orientation construct.

Even though there is still no Rasch model analysis from previous studies, existing studies have demonstrated that ROS generally has good validity and reliability ([Brewczynski & MacDonald, 2006](#); [García-Alandete et al., 2019](#); [Kamaluddin et al., 2017](#); [Voci et al., 2017](#)). These studies have assessed the psychometric properties of ROS across various cultural and religious contexts, reinforcing its structural validity and internal consistency. For instance, [García-Alandete et al. \(2019\)](#) found that the ROS-Revised demonstrated strong validity and reliability among Spanish Catholics, while [Kamaluddin et al. \(2017\)](#) provided evidence for its applicability in the Malay-speaking Muslim population. Such findings affirm the robustness of ROS as a tool for measuring religious orientation across different populations, despite the need for further refinements in specific cultural settings.

Despite its strengths, this study has several limitations. First, the sample was limited to Muslim adolescents from Greater Jakarta, which may restrict the generalizability of findings to other religious or regional groups in Indonesia. Given the cultural and religious diversity within Indonesia, further validation across different regions and religious communities is necessary to confirm the scale's broad applicability. Second, the cross-sectional design captures religious orientation at a single point in time, preventing an assessment of how intrinsic and extrinsic orientations evolve over time. Future longitudinal studies could explore the stability of these constructs and how they change in response to developmental, educational, or societal influences.

Third, while the Rasch model analysis provided important insights into item functioning, some misfitting items suggest that slight revisions might improve measurement accuracy. For example, IRO 3 could be reworded to reflect both private and communal religious experiences, ensuring it aligns more closely with Indonesian adolescents' lived realities. Similarly, ERO 5 could be rephrased to reduce potential ambiguity, ensuring that respondents interpret it more consistently. Future research should also explore cross-cultural comparisons, both within Indonesia and in other countries, to evaluate the scale's robustness across various religious traditions. Expanding the sample to include a wider range of age groups and religious affiliations would further enhance the generalizability of the findings.

Conclusion

Despite these few misfits on the outfit MNSQ, the overall findings indicate that the ROS-I is a reliable and valid tool for assessing religious orientation among Indonesian Muslim adolescents. Strong person and item separation indices imply accurate measurement of both internal and extrinsic orientations. The rating scale diagnostics also revealed that participants used the four Likert response categories to a sufficient degree, indicating the instrument's sensitivity in distinguishing between the various religious inclinations within the sample.

For future research, studies should examine cross-cultural contexts within Indonesia or even compare it to other nations to evaluate the scale's generalizability across a range of religious beliefs. In addition, misfit items such as IRO 3 and ERO 5 could use a little rewording or more research to ensure that they resonate more consistently with respondents' experiences and cultural backgrounds. Lastly, in order to guarantee the tool's resilience and generalizability, it would be beneficial to broaden the sample to cover various age groups, religious backgrounds, and geographic locations.

The findings of this study have practical implications for improving the measurement of religious orientation in Indonesian adolescents. The validated ROS-I provides a reliable tool for assessing intrinsic

and extrinsic religious orientation that can be used by educators, policy makers, and interfaith researchers, ensuring more accurate and culturally relevant measurement. Its application in research and psychological assessments can enhance the understanding of religious orientation, allowing for more precise data collection.

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Appendix A.

Religious Orientation Scale (ROS) developed by Allport and Ross (1967)

A. Intrinsic Religious Orientation (IRO)

Original Items in English	Adapted Items in Bahasa Indonesia
1 It is important for me to spend periods of time in private religious thought and meditation.	<i>Penting bagi saya menyisihkan waktu untuk menghayati nilai keagamaan dan meditasi pribadi</i>
2 If not prevented by unavoidable circumstances, I attend church.	<i>Jika tidak ada halangan, saya akan beribadah ke tempat ibadah</i>
3 I try hard to carry my religion over into all my other dealings in life.	<i>Saya berusaha keras untuk menerapkan nilai agama saya ke dalam semua urusan saya yang lain dalam hidup.</i>
4 The prayers I say when I am alone carry as much meaning and personal emotion as those said by me during services.	<i>Doa-doa yang saya panjatkan ketika saya sendirian membawa banyak makna dan memunculkan emosi pribadi</i>
5 Quite often I have been keenly aware of the presence of God or the Divine Being.	<i>Saya sangat menyadari kehadiran Tuhan atau Wujud Ilahi</i>
6 I read literature about my faith (or church).	<i>Saya membaca literatur tentang iman (atau tempat ibadah)</i>
7 If I were to join a church group I would prefer to join a Bible study group rather than a social fellowship.	<i>Jika saya bergabung dengan kelompok tempat ibadah, saya lebih banyak bergabung dengan (1) kelompok Pembelajaran Kitab Suci, daripada (2) kelompok sosial</i>
8 My religious beliefs are really what lie behind my whole approach to life.	<i>Keyakinan agama saya adalah tolak ukur untuk seluruh hal yang saya lakukan dalam kehidupan</i>
9 Religion is especially important because it answers many questions about the meaning of life.	<i>Agama sangat penting bagi saya karena agama menjawab banyak pertanyaan tentang makna hidup</i>

B. Extrinsic Religious Orientation (ERO)

Original Items in English	Adapted Items in Bahasa Indonesia
1 Although I believe in my religion, I feel there are many more important things in my life.	<i>Agama membantu menjaga keseimbangan dan stabilitas hidup saya dengan cara yang persis sama seperti cara kewarganegaraan, persahabatan, dan kemasyarakatan saya lainnya.</i>
2 It doesn't matter so much what I believe so long as I lead a moral life.	<i>Apa yang saya yakini bukan sesuatu yang perlu dipermasalahkan selama saya menjalani kehidupan moral.</i>
3 The primary purpose of prayer is to gain relief and protection.	<i>Tujuan utama dari doa adalah untuk mendapatkan kelegaan dan perlindungan.</i>
4 The church is most important as a place to formulate good social relationships.	<i>Tempat ibadah adalah tempat yang penting dan baik untuk mempererat hubungan sosial</i>
5 What religion offers me most is comfort when sorrows and misfortune strike.	<i>Agama menawarkan kenyamanan ketika kesedihan dan kemalangan melanda saya.</i>
6 I pray chiefly because I have been taught to pray.	<i>Saya berdoa terutama karena saya telah diajarkan untuk berdoa</i>
7 Although I am a religious person I refuse to let religious considerations influence my everyday affairs.	<i>Meskipun saya orang yang religius, saya menolak untuk membiarkan nilai agama mempengaruhi urusan saya sehari-hari.</i>
8 A primary reason for my interest in religion is that my church is a congenial social activity.	<i>Alasan utama ketertarikan saya pada agama adalah karena tempat ibadah saya memiliki kegiatan sosial yang menyenangkan.</i>
9 Occasionally I find it necessary to compromise my religious beliefs in order to protect my social and economic well-being.	<i>Saya merasa perlu untuk mengkompromikan keyakinan agama saya untuk melindungi kesejahteraan sosial dan ekonomi saya.</i>
10 One reason for my being a church member is that such membership helps to establish a person in the community.	<i>Salah satu alasan saya menjadi anggota tempat ibadah adalah karena hal tersebut membantu mengembangkan seseorang di sebuah komunitas atau perkumpulan sosial</i>
11 The purpose of prayer is to secure a happy and peaceful life.	<i>Tujuan berdoa adalah untuk menjamin kehidupan yang bahagia dan damai.</i>
12 Religion helps to keep my life balanced and steady in exactly the same way as my citizenship, friendships, and other memberships do.	<i>Agama membantu menjaga keseimbangan dan stabilitas hidup saya dengan cara yang persis sama seperti cara kewarganegaraan, persahabatan, dan kemasyarakatan saya lainnya.</i>