

Validity and Psychometric Properties of Malay Translated Religious Orientation Scale-Revised among Malaysian Adult Samples

(Kesahan dan Sifat-Sifat Psikometrik Skala Orientasi Keagamaan-Semakan yang diterjemahkan dalam Bahasa Malaysia dalam Kalangan Sampel Dewasa Malaysia)

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ABSTRACT

Religious Orientation Scale-Revised (ROS-R) has been used increasingly as an important measure in psychology of religion based researches and widely administered in cross-cultural settings. Unfortunately, there is no valid and reliable ROS-R available in Malay language to assess religious orientations among Malaysians. With that in mind, the present study aims to validate and document the psychometric properties of Malay translated ROS-R (henceforth, M-ROS-R) among sample of Malaysian adults. This study commenced with Forward-Backward translations and was followed by content and face validities. Subsequently, a cross-sectional study was conducted among Malaysian adults (n = 226) using convenience sampling method for the purpose of construct and factorial validations. Later, construct and factorial validity was performed via Exploratory Factor Analysis using Principal Component Analysis with Varimax rotation. Finally, reliability testing was performed to determine the internal consistency of the items which was achieved using Cronbach's Alpha coefficient method (α). The factor loading consisted of three factors with a total variance of 64.76%. The final version of M-ROS-R consisted of 14 items with Factor 1 (Intrinsic Orientation) comprised of 8 items, Factor 2 (Extrinsic-Socially Orientated) with 3 items while Factor 3 (Extrinsic-Personally Orientated) constituted 3 items. The internal consistency values of the factors ranged between 0.68 and 0.86, indicating the scale is reliable. The intercorrelations between factors were also significant with each other. M-ROS-R was concluded as a valid and reliable scale to measure and assess religious orientations among Malaysians.

Keywords: Internal consistency; psychometric properties; religiosity; Religious Orientation Scale-Revised; validation

ABSTRAK

Religious Orientation Scale-Revised (Skala Orientasi Keagamaan-Semakan; ROS-R) telah semakin banyak digunakan sebagai pengukuran penting dalam kajian berasaskan psikologi keagamaan dan ditadbirkan secara meluas merentasi budaya. Malangnya, masih belum ada versi ROS-R dalam Bahasa Malaysia yang mempunyai kesahan dan kebolehpercayaan untuk mengukur orientasi keagamaan dalam kalangan rakyat Malaysia. Dengan itu, kajian ini bertujuan untuk mengesahkan dan mendokumenkan sifat-sifat psikometrik ROS-R diterjemah ke dalam Bahasa Malaysia (M-ROS-R) dalam kalangan sampel kajian orang dewasa Malaysia. Kajian ini bermula dengan penterjemahan berbalik dan diikuti dengan kesahan kandungan dan muka. Kemudiannya, satu kajian keratan rentas dijalankan dalam kalangan orang dewasa Malaysia (n = 226) dengan menggunakan kaedah persampelan mudah untuk mendapatkan kesahan konstruk dan faktorial. Kemudian, kesahan konstruk dan faktorial telah dijalankan melalui Analisis Faktor Eksploratori menggunakan Analisis Komponen Utama dengan putaran Varimaks. Akhir sekali, kebolehpercayaan diuji untuk mendapatkan kebolehpercayaan dalaman dengan menggunakan kaedah pekali Alfa Kronbach (α). Muatan faktor terdiri daripada tiga faktor dengan jumlah varians sebanyak 64.76%. Versi terakhir M-ROS-R

terdiri daripada 14 item dengan Faktor 1 (Orientasi Dalaman) terdiri daripada 8 item, Faktor 2 (Orientasi Sosial-Ekstrinsik) terdiri daripada 3 item manakala Faktor 3 (Orientasi Personal-Ekstrinsik) terdiri daripada 3 item. Nilai kebolehpercayaan dalaman faktor-faktor tersebut adalah antara 0.68 hingga 0.86, menunjukkan skala ini boleh dipercayai. Korelasi antara faktor-faktor juga adalah signifikan. M-ROS-R ditentukan sebagai skala yang sah dan boleh dipercayai untuk mengukur dan menilai orientasi keagamaan dalam kalangan rakyat Malaysia.

Kata kunci: Kebolehpercayaan dalaman; sifat-sifat psikometrik; keagamaan; Skala Orientasi Keagamaan-Samakan; kesahan

INTRODUCTION

It is a common practice that the term religion and religiosity are used interchangeably, although the two words are slightly distinct from each other. In general, religion can be defined as an organized system of beliefs, practices and symbols which was designed to enable closeness to God (Matthews 1996). Meanwhile, religiosity or sometime referred as religiousness is described as a multidimensional construct which is commonly viewed as society-based beliefs and practices in relation to God or a higher power that is related or associated with a church or any organized groups (Elgbert, Mickley & Coeling 2004). According to Barnes et al. (2000), religion traditions provide structures and framework for moral development and for socialization into ideals of personhood and behaviour. Furthermore, it also acts as a framework for better understanding of social relations, the natural world, and the link between daily life and the sacred world (Barnes et al. 2000).

According to Hill and Hood (1999), religiosity involves the use of cognition, emotions and behaviours in the search of the sacred. Since there is a wide array of explanations, opinions, and definitions made available regarding the concept of religion due to the existence of different types of religion (Jones 2005), many scholars shifted their attention by focusing on religious orientation in general and defined it as the motivation behind every religious behaviour (Francis 2007). Reflecting the issue of religious orientation, an early study (Allport 1966) classified religiosity into two main umbrellas, namely intrinsic and extrinsic which act as major motivations underlying all religions.

In the past few decades, many studies were conducted on religiosity and religious orientations (Allport 1950; Allport & Ross 1967; Koenig, McGue & Iacono 2008; Sapp 2010). There were also many empirical and qualitative studies which

investigated the influences and/or effects of religiosity towards other aspects/ variables such as health (Hunter & Merrill 2013), diet (Hart et al. 2004), stress (Norzarina Mohd-Zaharim 2010), psychological well-being (Kuyel, Cesur & Ellison 2012), criminality and delinquency (Barnes et al. 2000), mental health (Hunter & Merrill 2013), racial and sexual attitudes (Herek 1987) and many more.

Although the importance of religious orientation in addressing other measures such as health, psychological well-being, mental health, lifestyles, stress and coping, criminal behaviour and other parameters is widely acknowledged, and a number of scales are available to assess the religious orientations; a valid Malay version of an appropriate scale is still lacking. One of the readily available tool in Malay language is Duke University Religion Index (DUREL) (Koenig, Meador & Parkerson 1997) which was validated among a group of nursing students (Nurasikin et al. 2010). In general, DUREL measures dimensions of religiosity such as organization religious activity, non-organization religious activity and intrinsic religiosity. Since voluminous studies have identified religious orientation as an important predictor for many aspects of life, the present study focussed on religious orientation instead of dimension. Having said that, it is imperative to validate a tool that measures religious orientation in Malay language.

A valid Malay version instrument is considered an important element in a research process (Jeannot & Khairul Anuar 2012) as there may be cultural and terminology differences in the original scale that make direct English language usage not appropriate for the Malay-speaking population (Mohammad Rahim, Nadiyah Syariani & Geshina Ayu 2013). In fact, studies in cross-cultural psychology and sociology attest to this need. In

addition, questionnaires or any scales are highly recommended to undergo a series of evaluations in order to test their psychometric properties before they are relied on for making decisions. Such evaluations are important in producing a valid and reliable scale for the purpose of obtaining accurate and legitimate results. This indicates the need for such religious orientation scale not only to be translated into Malay, but also requires the determination of validity, reliability and psychometric properties prior to its wider usage in Malaysian settings.

Over the years, several scales have been designed to measure the religious orientations. Some examples include Religious Orientation Scale (Allport & Ross 1967), Age-Universal Intrinsic-Extrinsic Scale (Gorsuch & Venable 1983), New Indices of Religious Orientation (Francis 2007) and Modified Religious Orientation Scale (adaptation version) (Khodadady & Bagheri 2012). All these scales are aimed to assess the religious orientations of an individual. Among these, Religious Orientation Scale (ROS) which was developed by Allport and Ross (1967) is often viewed as one of the fundamental and most widely used scales since it was established. Upon the establishment of ROS, many scholars modified and upgraded the existing ROS into different versions. Noteworthy examples are Religious Orientation Scale-Revised (ROS-R) by Gorsuch and McPherson (1989) and Age-Universal Intrinsic-Extrinsic Scale (Gorsuch & Venable 1983).

ROS-R is a modified version of ROS which measures both the intrinsic and extrinsic religious orientations which was originally developed by Allport (1950). This ROS-R was a revised and short version of Age-Universal Intrinsic-Extrinsic Scale (Gorsuch & Venable 1983). In this scale, the extrinsic orientation was further divided into two sub-categories: Socially orientated - extrinsic (Es) and Personally orientated - extrinsic (Ep) (Gorsuch & McPherson 1989). The decision of amendment was due to the reanalysis of several studies that used Allport and Ross (1967) scale (Kirkpatrick 1989).

This ROS was developed by Gorsuch and McPherson (1989), addresses three important dimensions of religious orientations: Intrinsic, Socially orientated-extrinsic (Es) and Personally orientated - extrinsic (Ep). According to Allport (1966: 455), intrinsic dimension is defined as "faith as a supreme value in its own right and it

is orientated toward a unification of being, takes seriously the commandment of brotherhood, and strives to transcend all self-centred needs". Meanwhile, the extrinsic dimension is referred as "strictly utilitarian; useful for the self in granting, social standing, solace and endorsement for one's chosen way of life".

In other words, the extrinsic component of an individual reflects a self-serving and instrumental approach conforming to social conventions while the intrinsic component provides them with a meaning-endowing framework in terms of which all life is understood (Allport & Ross 1967 cited in Herek 1987). Here, Allport and Ross (1967) pinpoint "the extrinsically motivated person uses his religion, whereas the intrinsically motivated lives his religion" (p.434 cited in Herek 1987). Reiterating on the intrinsic and extrinsic concepts, intrinsic religiousness is a true believer in religious practice for its own sake whereas extrinsic religiousness reflects religious practice as an avenue to a social (socially orientated-extrinsic) or personal (personally orientated-extrinsic) end such as comfort and acceptance.

Many scholars refer this ROS-R as a Revised Intrinsic-Extrinsic Religious Orientation (I/E-R) and have been widely used in religion-based researches. According to one of the classical review by Donahue (1985), more than 70 studies were benefited with the existence of ROS and ROS-R. Indeed, this scale was found to be amenable to individuals from all educational levels (Gorsuch & Venable 1983; Gorsuch & McPherson 1989). Previous studies evident ROS-R as a promising tool to assess the religious orientations among test takers as the psychometric properties of ROS seemed to be satisfactory and promising. The study among 771 students indicated the reliability estimate of ROS-R was promising and within the acceptable range (Gorsuch & McPherson 1989). Additionally, this ROS-R was accredited as a valid tool and the factor structure was confirmed in several studies using traditional religious orientation scales (Kirkpatrick 1989).

Having said that, it is practical to administer ROS-R within Malaysian settings and therefore, the present study aimed to validate ROS-R (Gorsuch & McPherson 1989) among Malaysian adult samples. By doing so, the present validation study is expected to document the validity and psychometric properties of M-ROS-R which may benefit many scholars for the purpose of researches.

METHODOLOGY

STUDY DESIGN AND RESPONDENTS

The present validation study adapted a cross-sectional research design method. The factorial validation study was conducted among Malaysian adults. A series of selection criteria was imposed prior to the recruitment of the respondents. Selection criteria included those who are able to read Malay and 18 years old and above.

The objective of the study was clearly explained to the respondents prior to their participation. In addition to that, the respondents were informed about the aspect of data confidentiality and they were also assured with anonymity of the data. Prior to their recruitment in this study, a written consent was obtained from each of the respondents. The questionnaire was administered individually and they took about 15 minutes to complete the questionnaire. Upon completion of the questionnaire, the researchers thanked the respondents and a token of appreciation was given.

A total of 226 Malaysian adults from Klang Valley were recruited in this study using a convenience sampling method. The average age of the respondents was 30.17 years old ($SD = 7.13$) with the youngest respondent was 18 years old and the oldest was 55 years old. Out of 226, 120 respondents were male (52.9%). Majority of the respondents were Malay (95.1%) and non-Malay viz. Chinese, Indian, and other ethnicities comprised of 4.9%. With regards to religion, majority of them were practicing Islam (95.6%). The rest of the respondents were practicing Christianity (1.3%), Buddhism (1.8%) and Hindu (1.3%). As regards to marital status, 54.0% of the respondents were bachelor and the rest of them (46.0%) were married.

INSTRUMENT

The Religious Orientation Scale-Revised/ Revised Intrinsic-Extrinsic Religious Orientation is a 14-item inventory which was designed to evaluate religious orientations among the test takers. In ROS-R, eight items were listed to assess the intrinsic dimension while six items to measure the extrinsic dimension of religious orientation. Reflecting the extrinsic orientation, three items tap the Es orientation (socially orientated – extrinsic), whereas another three items were listed under Ep

orientation (personally orientated – extrinsic). The intrinsic orientation consists of items such as “*I enjoy about my religion*” and “*I often have a strong sense of God’s presence*”. Meanwhile, items such as “*I go to place of worship because it helps me to make friends*” (Es) and “*Prayer is for peace and happiness*” (Ep) were listed under extrinsic component (social and personal categories of extrinsicness) of religious orientation.

All the items in ROS-R were rated on 5-point Likert scales ranging from strongly disagree to strongly agree. Three items (item no. 3, 10 and 14) were reverse scored. The scores of each dimension and sub-dimensions are determined by summing its item’s responses, resulting in a range of 8-40 for the intrinsic orientation scale and 3-15 for each extrinsic orientation (Es/ Ep) scale.

VALIDATION PROTOCOL

The present validation study involved several validation protocols in order to establish a valid and reliable Malay version ROS-R.

FORWARD-BACKWARD TRANSLATIONS

The study commenced with Forward and Backward translation processes. These two types of translation processes improve the reliability and validity of the translated questionnaire. Therefore, a Forward-Backward translating procedures were carried out to translate ROS into Malay. For the purpose of translations, three independent bilingual experts were assigned to perform forward translation. A professional language proof-reader was hired to endorse the Malay translated ROS-R. Consequently, the Malay version ROS-R was termed as M-ROS-R (the suffix “M” indicates Malay version). After a week, another three independent bilingual experts who had no exposure with original ROS-R was selected for a back-translation procedure. In order to produce a harmonized Malay ROS-R, the researchers compared the original scale with M-ROS-R and necessary amendments were made.

CONTENT AND FACE VALIDATIONS

Following the translation processes, the M-ROS-R was subjected to content and face validations. The content validation protocol ensures that the tool includes an adequate and representative set of items that tap the concept investigated (Dharmalingam, Kamaluddin & Hassan 2016). Often, content

validity refers to the appropriateness of the items on the instrument to measure the constructs. Since content validation often performed by the experts within the field, three experts from religious education and psychology backgrounds were assigned to validate the items listed in M-ROS-R.

As ROS-R is an established scale that is used worldwide, the primary role of the experts assigned herein was more to ensure that those items were relevant and suitable to the scope of measurement within Malaysian context. While content validity ensures the 'content' aspects of the items, the face validity was carried out among 20 respondents to confirm that newly translated M-ROS-R were able to measure what they were intended to measure and also to ensure the 'technical' aspects of M-ROS-R. In general, face validity can be defined as the degree to which a test or scale appears to measure what it claims to measure (Gay, Mills & Airasian 2014).

At face validation phase, the respondents were asked to give feedbacks in terms of layout of the questionnaires, font size, readability and appropriateness of language used in M-ROS-R. In addition, the respondents were also asked to assess whether the sentences were clear, concise, easy to understand and free from typographical errors. Based on the responses from the 20 respondents, minor amendments were made in terms of layout of the questionnaire and font size.

CONSTRUCT AND FACTORIAL VALIDATIONS

Construct validity is an objective validation which assesses the degree to which an instrument or scale measures what it supposed to measure. According to Hinton, Brownlow, McMurray and Cozens (2004), construct validation is often measured by ascertaining the relationships between the scores of the items and also by examining the correlation values between the items. According to Ratray and Jones (2007), factor analysis is one of the way to assess the construct validity of a scale. Therefore, factor analysis was conducted as an approach to assess the construct validation of M-ROS-R. For the purpose of construct validation in the present study, the sample size was based on Comrey and Lee's (1992) sample size formula in which a total sample of 200 and above indicates a fair sample size for a validation study. Thus, the present study was conducted among 226 respondents.

STATISTICAL ANALYSES

Data obtained from this study was organized and analysed using the IBM Statistical Package for the Social Sciences (SPSS) version 22.0. Three different types of analyses: descriptive, validity and reliability analyses; were conducted. Descriptive analysis was performed in order to generate the socio-demographic profiles of the samples. The preliminary analyses for factor analysis were assessed in order to ensure the sample adequacy and non-violation of data. The preliminary analyses assessed were: correlation matrix, anti-image correlation matrix, Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity (Field 2009). The sample will be considered adequate if two conditions are met: KMO values must be more than 0.60 and Bartlett's test of sphericity must be significant ($p < 0.05$) (Field 2009).

Following the preliminary analyses, factorial validations were carried out. The factorial validity of items was tested using Exploratory Factor Analysis (EFA) by extracting factors via Principal Component Analysis (PCA). The factors were rotated using Varimax rotation with Kaiser normalization to get the best possible loadings on the factors. A loading factor of more than plus or minus 0.3 was considered as acceptable.

The final number of items in M-ROS-R was subjected to internal reliability testing. Reliability analysis was done to determine the internal consistency of the dimensions of M-ROS-R. The internal consistency of each dimension in M-ROS-R was measured using the Cronbach's Alpha coefficient (α) method. Measuring the internal consistency is an imperative step in order to produce a reliable scale. Here, internal consistency can be defined as the overall degree of relatedness of each item in M-ROS-R within the dimension or scale. Finally, the intercorrelations among Intrinsic, Extrinsic and their sub-dimensions were checked using Pearson correlation coefficient method.

RESULTS AND DISCUSSION

FORWARD-BACKWARD TRANSLATIONS OF M-ROS-R

Overall, the translations processes were considered good and the wordings seemed to be suitable to be used among Malaysian samples. The backward translated items in M-ROS-R were similar to the

original version. A professional language proof-reader resolved word ambiguity issues and ensured the overall suitability of the M-ROS-R. Only a few amendments were made due to ambiguously worded items and colloquial wordings. After minor adjustments, the final M-ROS-R was endorsed as the items were similar with the original scale in terms of meaning and content.

CONTENT AND FACE VALIDITY OF M-ROS-R

The experts who reviewed the 'content' aspects of the items in M-ROS-R agreed that the items are relevant and suitable in measuring the religious orientations among Malaysian test takers. The elements of subjectivity in relation to determining the content validity were not raised by the experts, indicating the promising content validity of the items in M-ROS-R. With that, it was concluded that all the items in M-ROS-R were valid in terms of content. With regards to face validity, respondents acknowledged the readability and comprehension of the M-ROS-R items. Therefore, the language and terms used in M-ROS-R were concluded as appropriate, suitable and culturally acceptable to be administered among Malaysian populations.

CONSTRUCT AND FACTORIAL VALIDATIONS OF M-ROS-R

As mentioned earlier, the construct validation of the M-ROS-R items was assessed using exploratory factor analysis. The results indicated several correlations in the correlation matrix which are above 0.30 – hence, the data are suitable for factor analysis (Allen, Bennet & Heritage 2014). In addition, the determinant value was 0.01 indicating there is no issue of multicollinearity in the data set, favouring the factor analysis. The anti-image correlation matrix of 14 items ranged from 0.75 to 0.90 which further supports the suitability of the data for factor analysis. The KMO value was 0.87, suggesting adequate sampling to enable factor analysis. In addition, Bartlett's Test of Sphericity was highly significant, $\chi^2 = 1551.04$, $df = 91$ with $p < 0.001$, indicating that the correlation matrix was not an identity matrix and factor analysis could proceed with collected data. In general, findings of

preliminary analyses were found to be promising and excellent for further factor analyses.

Similar to the original scale, the factor analysis revealed three loading factors that explained 64.76% from the total variance. Hence, the scree plot displayed 3 sub components with eigenvalues above 1. With reference to the eigenvalues, the first factor (Factor 1) showed 37.07% and the second factor (Factor 2) explained up to 22.03% of the total variance. Finally, the third factor (Factor 3) explained 7.45% of the total variance. The scree plot is shown in Figure 1.

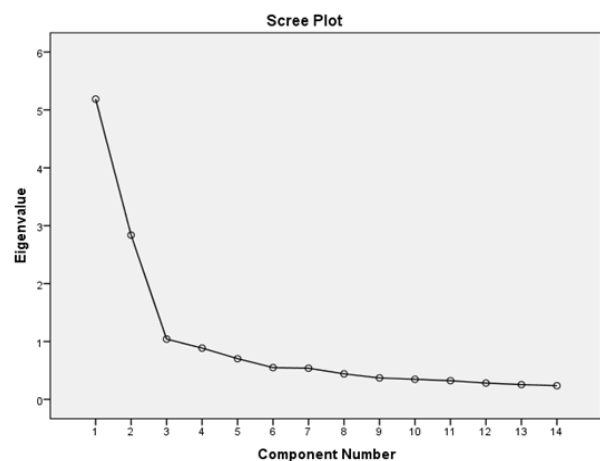


FIGURE 1. The Final Scree Plot of M-ROS-R

After considering the minimum factor loadings of 0.30, item correlations, and the meaningful interpretation of the items, none of the items was removed. All these items exhibited factor loading of 0.30 and above. Based on the factor loadings matrix presented in Table 1, Factor 1 consisted of 8 items, Factor 2 with 3 items while Factor 3 comprised of 3 items. With reference to the original ROS-R, the factors were identified based on the number of items that were highly loaded into each factor. As such, Factor 1 was identified as intrinsic orientation, Factor 2 as socially orientated – extrinsic (Es) and Factor 3 as personally orientated – extrinsic (Ep). Although there were few cross-loadings items in factorial validation output, the decision to place the item in a particular factor was based on the highest factor loading value of the respected item within the factor.

TABLE 1. Component Matrix of Exploratory Factor Analysis of M-ROS-R

Original Factor	(No) Item	Component		
		Factor 1 (Intrinsic)	Factor 2 (Extrinsic-Es)	Factor 3 (Extrinsic-Ep)
I	(7) I try hard to live all my life according to my religious beliefs <i>Saya cuba sedaya upaya untuk hidup mengikut kepercayaan agama saya</i>	0.84		
I	(5) I have often had a strong sense of God's presence <i>Saya sentiasa merasai kewujudan Tuhan/Allah</i>	0.83		
Ep	(9) Prayer is for peace and happiness <i>Sembahyang/doa ialah untuk ketenangan dan kebahagiaan</i>	0.83		
Ep	(8) What religion offer me most is comfort in times of troubles and sorrow <i>Paling banyak agama memberikan saya adalah ketenangan semasa saya dalam kesusahan dan kesedihan</i>	0.77		
I	(4) It is important to me to spend time in private thought and prayer <i>Adalah penting bagi saya mempunyai masa untuk bertafakur dan berdoa</i>	0.74		
I	(1) I enjoy reading about my religion <i>Saya seronok membaca tentang agama saya</i>	0.74		
I	(12) My whole approach to life is based on my religion <i>Keseluruhan pendekatan hidup saya adalah berdasarkan kepada agama saya</i>	0.73		
Ep	(6) I pray mainly to gain relief and protection <i>Saya sembahyang/berdoa semata-mata untuk mendapat ketenangan dan perlindungan</i>	0.43		
Es	(13) I go to place of worship (mosque/temple/church) mainly because I enjoy seeing people I know there <i>Saya mengunjungi rumah ibadat (masjid/kuil/gereja) kerana saya seronok berjumpa dengan orang yang saya kenal</i>		0.83	
Es	(11) I go to place of worship (mosque/temple/church) mostly to spend time with my friends <i>Saya mengunjungi rumah ibadat (masjid/kuil/gereja) selalunya untuk menghabiskan masa dengan kawan-kawan</i>		0.81	
Es	(2) I go to place of worship (mosque/temple/church) because it helps me to make friends <i>Saya mengunjungi rumah ibadat (masjid/kuil/gereja) kerana ia membantu saya mendapat kawan</i>		0.78	
I	(3) It doesn't matter much what I believe so long as I am good <i>Tidak penting apa yang saya percaya asalkan saya seorang yang baik</i>			0.78
I	(14) Although I believe in my religion, many other things are more important in life <i>Sungguhpun saya percaya kepada agama saya, banyak perkara lain yang lebih penting dalam hidup saya</i>			0.63
I	(10) Although I practice teachings of my religion, I don't let it affect my daily life <i>Sungguhpun saya seorang yang mengamalkan ajaran agama, saya tidak membiarkan ianya mengganggu kehidupan harian saya</i>			0.35
Total Items		8	3	3

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization; I: Intrinsic; Es: Socially orientated - Extrinsic; Ep: Personally orientated - Extrinsic

Based on the component matrix of final factor loading in Table 3, Factor 1 (Intrinsic) comprised of 8 items with factor loadings ranged from 0.43 to 0.84. The items are 1, 4, 5, 6, 7, 8, 9, and 12. Examples of items loaded highly into Intrinsic Orientation are *"I enjoy about my religion"*, *"It is important for me to spend time in private thoughts and prayers"* and *"I try to live all my life according to my religious beliefs"*. Contrary to the original ROS-R, three items from Ep (item 6, 8 and 9) were loaded in intrinsic orientation. For instance, the item *"Prayer is for peace and happiness"* (item 9) was loaded in Intrinsic Orientation instead of Extrinsic Orientation.

Meanwhile, Factor 2 (Es Orientation) comprised of 3 items: items 2, 11 and 13. The factor loadings of items in Factor 2 ranged from 0.78 until 0.83, indicating excellent range of factor loadings. Interestingly, the factor loadings of these items correspond to the original Es in ROS-R. Items loaded in Es are *"I go to place of worship (mosque/temple/church) mostly to spend time with my friends"*, *"I go to place of worship (mosque/temple/church) mainly because I enjoy seeing people I know"*, and *"I go to place of worship (mosque/temple/church) because it helps me to make friends"*. The exact loadings as in original scale indicate that Malaysians perceive religious practice as a part and an avenue for social conventions such as building networking, forming friendships with acquaintances and get to know each other.

The final factor (Ep Orientation) also consists of 3 items. The items are item 3, 6, and 10 which exhibited factor loadings of 0.78, 0.63 and 0.35 respectively. However, the items which loaded in Ep Orientation belong to Intrinsic Orientation. Although such items loaded highly in different factor, it was decided to retain these items as in the current factor loading structure after consulting few experts from the religious education and spiritual-psychology fields. This is not surprising because most (95.6%) of the respondents in this study were Muslims. For the Muslims, Islam is a way of life. As reported by Abu Raiya (2009) and Abu Raiya and Pargament (2010), Islam is deeply embedded in the lives of most Muslims. Muslims pray in good and bad times. During hard time, they usually turn to Allah for support and help. Therefore, it is concluded that Islamic concept as well as the Malaysian perception towards religious orientations could be the reasons that may explain

why certain items in M-ROS-R are highly loaded into different factors compared to the original ROS-R.

The findings did not map onto the original conceptualisation of the Intrinsic, Extrinsically-social, and Extrinsically-personal which indicated a possible re-conceptualisation of the religious orientation among Malaysian respondents particularly for Muslims. The possible reasons for non-replication of the factor structure must be done by understanding the meaning of extrinsic and intrinsic religious orientations in the Malaysian context. Intrinsic religion is defined as being an ultimate end in itself, the intrinsic component provides them with a meaning-endowing framework in terms of which all life is understood (Allport & Ross 1967) and thus two items formerly measuring extrinsically-personal (*"prayer is for peace and happiness"* and *"what religion offer me most is comfort in times of troubles and sorrow"*) are actually measuring Intrinsic orientation of religiosity among majority of Malaysian respondents.

Extrinsic religion is defined as a means of achieving some self-serving end, as a tool that promotes social support, comfort and self-esteem (Hunter & Merrill 2013). Thus, three items measuring Extrinsically-social orientation were replicated perfectly in this study as all three items reflect religious practice as an avenue to a social end.

The results also showed that items measuring the Extrinsically-personal were replaced by formerly Intrinsic items. Extrinsically-social orientation is defined as religious practice as an avenue to a social end such as comfort. Therefore, the three items (*"it doesn't much matter what I believe so long as I am good"*, *"although I believe in my religion, many other things are more important in life"*, and *"although I practice teachings of my religious, I don't let it affect my daily life"*) more accurately measure Extrinsically-personal rather than intrinsic orientation. This may indicate different meaning than what the original authors wanted to convey. The present findings also may instigate further related researches on re-conceptualization of ROS-R.

INTERNAL CONSISTENCY OF M-ROS-R

The internal consistency of the M-ROS-R was calculated using the Cronbach's alpha method.

This method is widely known as the basic formula to determine the reliability value of an instrument in which the Cronbach's alpha values may range from zero to one. The values closer to one indicate that the instrument has better internal consistency. In the present study, the internal consistency values of each dimension seemed to be within the range of satisfactory and excellent. The internal consistency value for Intrinsic Orientation was 0.86 while Es - Extrinsic Orientation indicated internal consistency value of 0.81 and Ep - Extrinsic Orientation was 0.68. These values are considered within the acceptable range as a cut-off alpha value above 0.70 (except for Ep orientation) is considered good in the field of social science (George & Mallery 2003).

Subsequently, item-total statistics were tested (Table 2) to ensure the corrected-total item correlations of M-ROS-R are within acceptable range. Upon examination of the item-total statistics table, it was found that the internal consistency of Ep - Extrinsic Orientation will increase to 0.71 if item 10 is deleted. However, researcher decided to retain item 10 mainly for two reasons: (i) the current internal consistency value of 0.68 is considered within acceptable range and (ii) it was asserted that at least three items needed to form a scale / factor. Inspection of item-total statistics also revealed the corrected-total item correlation values were good and exceeded values of 0.30, reflecting M-ROS-R as a reliable tool in measuring the religious orientations among Malaysian test takers.

TABLE 2. Item Total Statistics of Items in ROS-M

Dimension/item	Corrected-total item correlation	Cronbach's alpha if item deleted	Cronbach's alpha
Factor 1 (Intrinsic)			0.86
Item 7	.774	.826	
Item 5	.694	.838	
Item 9	.733	.834	
Item 8	.677	.835	
Item 4	.652	.839	
Item 1	.632	.844	
Item 12	.665	.836	
Item 6	.429	.897	
Factor 2 (Es-Extrinsic)			0.81
Item 13	.749	.638	
Item 11	.697	.705	
Item 2	.564	.833	
Factor 2 (Ep-Extrinsic)			0.68
Item 3	.492	.581	
Item 14	.622	.385	
Item 10	.384	.706	

INTERDIMENSIONAL CORRELATIONS

The interdimensional correlations between/ within Intrinsic and Extrinsic sub-dimensions revealed positive and significant associations except for Total Religious Orientation (TRO) - Ep pair. The correlation values between TRO - Intrinsic pair was 0.83 ($p < 0.001$), TRO - Es was 0.49 ($p < 0.001$) and TRO - Ep pair was 0.11 ($p > 0.05$).

Meanwhile, Intrinsic - Es pair revealed positive and significant associations ($r = 0.30$, $p < 0.001$) but exhibited negative and significant correlation with Ep ($r = -0.21$, $p < 0.001$). The correlation between sub-dimensions of Extrinsic also revealed negative but significant associations: Es - Ep pair was -0.57 ($p < 0.001$). The correlation matrix is displayed in Table 3.

TABLE 3. Inter Domain Correlations of ROS-M Dimensions

	TRO	Intrinsic	Es - Extrinsic	Ep - Extrinsic
TRO	1.00	0.83*	0.49*	0.11
Intrinsic		1.00	0.30*	-0.21*
Es - Extrinsic			1.00	-0.57*
Ep - Extrinsic				1.00

Note: * $P < 0.001$

In this validation study, researchers were aware of the importance of test-retest reliability. However, the researchers could not perform the test-retest reliability due to logistics and accessibility constraints. At the completion of this validation study, it was found that M-ROS-R evident good psychometric properties and was concluded as a valid and reliable scale for measuring religious orientations for Malaysian samples.

CONCLUSION

One of the limitations acknowledged in this study is the unequal religious distribution of the respondents. The higher percentage of Muslim respondents in this study may skewed the results and limit the generalizability to members of other religions in Malaysia. However, the findings that were generated in this study presented clear evidence that the M-ROS-R is a valid and reliable measure of religious orientation. With that, it can be concluded that validity and psychometric properties of M-ROS-R were successfully established for the use of Malay speaking populations. In conclusion, the M-ROS-R can be administered in various research fields within Malaysian settings. In future, it is highly recommended that this M-ROS-R should be tested and validated among different religion practitioners within Malaysian populations.

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