

Measuring the Spiritual and Behavioral Dimensions of Religiosity in a Muslim Sample

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Abstract

This study examines the dimensions of religiosity based on a sample of undergraduate students in a large state university in Kuwait. It aims to develop and test a multi-dimensional scale to measure religiosity in a Muslim sample. More specifically, the current research tests the properties of a newly developed religiosity scale designed for a Muslim sample consisting of two sub-scales, a spiritual and a behavioral one. The self-report data support the two dimensions of religiosity but, while the two dimensions are related, their statistical distributions were different indicating a possible “desirability bias” effect. Future studies should guard against this possibility by using complex survey techniques such as randomized responses and unmatched count.

Keywords: religiosity, methodology, Muslim, Islam, psychometrics, Kuwait

1. Introduction

The religious dimension of the human experience has interested many thinkers and philosophers over the years. With few exceptions, empirical social science has not made it a coherent or legitimate area of investigation (Krauss et al., 2007; Joseph & DiDuca, 2007). Religious behavior and belief offer a rich and challenging area of study. Furrow and Wagner (2000) suggest that critical influences and resources emanating from religious belief are an essential part of socialization process of youth in many parts of the world. Spirituality and religion are central characteristics of the human experience (King & Boyatzis, 2004). A Gallup poll on a sample of 50,000 participants in 60 countries found that 87% of the participants identified themselves as being members of a religious group, 63% mentioned that God is very significant in their lives and 75% believe in God, or some divine power (Gallup, 1999).

According to psychological theory, beliefs are learned because they are rewarding and can reduce anxieties caused by uncertainties in life. In recent years, the scientific investigation of the psychology of religion has made considerable progress with numerous studies examining a variety of religious contexts. For example, Lu and Argyle (1992) found a link between religious attitude and happiness. Rim (1993) found a positive association between social competence, self-esteem, coping mechanism and religiosity. Francis and his team of researchers carried out a series of investigations in diverse social groups, and they discovered higher levels of contentment in people with religious beliefs and practice (Francis et al., 2000). A study in England found a considerable correlation between religious feelings and being happy in general (Argyle & Hills, 2000). Koenig and his colleagues (2001) evaluated more than 850 research papers that examined the connection between religiosity and general health and discovered that 70% of them show a beneficial effect on general wellbeing.

Some research revealed a negative association between religiosity and psychological wellness. A small number of studies were unable to show an association between religiosity and general health, surprising some researchers (Francis et al., 2004). In a study of 154 undergraduates, no link was found between religiosity and happiness and having a life with purpose (Lewis et al., 1997). The same authors, studying two samples of Christian priests, found no significant association between religiosity and happiness (Lewis & Cruise 2006).

To understand better the relationship between religiosity and mental health, DiDuca and Joseph (1997) developed Dimension of Religiosity Scale (DRS) containing 24-items to assess four dimensions of religious belief and practice: preoccupation, guidance, conviction and emotional involvement. However, the authors did not report structural properties of the four sub-scales. In a subsequent study, they subjected this scale to principal

component analysis. The results revealed that factor structure of the Dimensions of Religiosity Scale depends on the number of religious persons in the sample (Joseph & Diduca, 2007). Caird (1988) reported that including a large number of non-religious individuals in the sample results in higher inter-item correlations leading to a one-dimensional scale, whereas a sample consisting of religious people usually leads to a multidimensional scale.

Although many religiosity scales were originally developed to be used for Judeo-Christian traditions, few have been adapted to Muslim samples (Spilka et al., 2003). However, no known adaptation of a Muslim religiosity scales to be used by non-Muslims is known to exist. Nevertheless, several religiosity scales based on the Islamic worldview have been developed in Western countries (e.g. Krauss et al., 2006). Similarly Krauss et al. (2007) in an attempt to develop a universally applicable test, adapted the Religious Personality sub-scale of the Muslim Religiosity-Personality Inventory for assessment of religiosity of Malaysian youth including Muslims, Hindus, Buddhists, and Christians. The researchers reported evidence concerning reliability, validity, and relevance for multiple faith groups. Argyle (2002) believes that psychologists can investigate determinants, correlates and impact of religion on people, but it is difficult to explicate religiosity. Since religiosity does not only refer to the extent to which one acts upon religious injunctions, it seems imperative to define religiosity and devise instruments for its measurement in an Islamic context. Toward that end, this paper attempts to develop and test a multi-dimensional scale to measure religiosity in a Muslim sample. More specifically, the current research will try to test the properties of a newly developed religiosity scale designed for a Muslim sample consisting of two sub-scales, a spiritual and a behavioral one.

2. Method

2.1 Sample and Procedures

The research used survey data where respondents completed a written questionnaire. The sample consisted of purposively chosen university students mirroring the fact that youth constitute the bulk of social media users. Students enrolled in communication classes at the main state university were asked to participate in this study. The questionnaires were distributed to them over a period of three months beginning in March 2014. The sample used in the analysis consisted of 1327 respondents. Arabic was the language used in the questionnaire.

The procedure guaranteed the anonymity of the participants who were free not to take part in the survey if they chose not to. The age of the participants ranged from 18 to 31 with 96% of them between 18 and 25 years. The average age is 21.87 years. The sample contained 395 (29.8%) males and 931 (70.2%) females. The gender distribution reflects the enrollment contour of the students in this university with 70% of them being female. Finally, because this is a state university, the greater part of the student body consists of Kuwaiti nationals by law, so accounting for their nationality was not needed. The questionnaires were given out throughout usual class meetings. The questionnaire contained Likert scale questions, used to measure the individual's perceptions, attitudes and behaviors. In addition, there were questions about demographics and media use behavior in general.

2.2 Measurement

2.2.1 The Spiritual Religiosity Sub-Scale

The measurement of the spiritual aspect of religiosity was based on five items using a Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The items were designed to measure the strength of the role that religion plays in one's life and are based on beliefs rather than specific behaviors. These items were generated following extensive focus group activities in the pre-test stage of the research of the project to reflect matters relevant to the respondent. The items are as follows:

- *Religion plays an important role in my life.*
- *Without religion, my life would be in chaos.*
- *Religion gives meaning to my life.*
- *Religion organizes my life.*
- *Prayer has a positive effect on my life.*

2.2.2 The Behavioral Religiosity Sub-Scale

The behavioral aspect of religiosity was based on five items measuring the frequency of actions related to the practice of the Islamic faith such as the number of times a person prays or fasts ranging from 'one' (1) to 'five or more' (5). These items were generated following extensive focus group activities in the pre-test stage of the research of the project to assure their reliability and cultural sensitivity. The items are as follows:

- *Number of times you pray daily.*
- *Number of times you performed Omra.*
- *Number of Quran verses you memorize.*
- *Number of days you fast outside Ramadan.*

3. Results

3.1 Descriptive Statistics

First the study looked at the descriptive statistics of the two religiosity sub-scales across the sample. Table 1 shows the wording of the items along with the means and standard deviations of the spiritual subscale while table 2 displays the same for the behavioral subscale. Looking at the two tables it is clear that the sample scored much higher on the spiritual scale. The grand mean of the spiritual subscale is 4.58 with a standard deviation of 0.67. The skewness levels of all the items on the spiritual subscale are -1 or less, confirm that the scale is skewed to the left indicating higher scores than a theoretically symmetrical distribution. To illustrate the skewness of the distribution, a summative composite of the sub-scale was calculated and plotted on a histogram in chart 1.

Table 1. Descriptive statistics of the spiritual religiosity sub-scale

Item	Mean	SD	Skewness
1. Religion plays an important role in my life.	4.5	.71	-1.77
2. Without religion my life would be in chaos.	4.6	.69	-2.13
3. Religion gives meaning to my life.	4.6	.64	-2.28
4. Religion organizes my life.	4.5	.70	-2.01
5. Prayer has a positive effect on my life.	4.7	.63	-3.05

n = 1327, range = 1-5

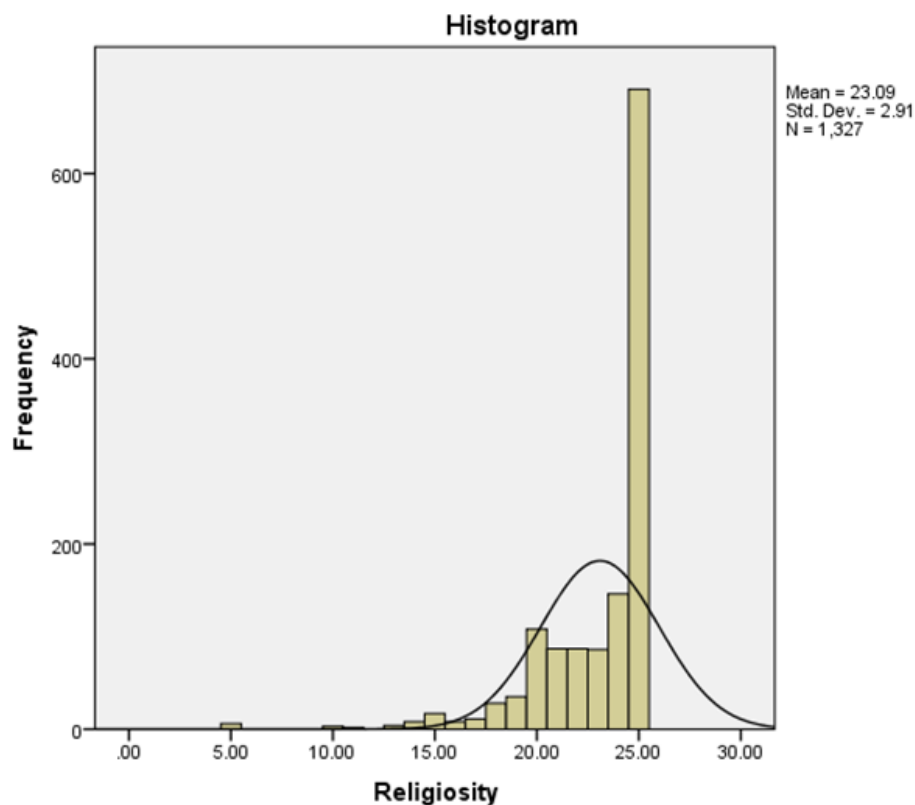


Figure 1. Frequency distribution of the spiritual dimension sub-scale composite

The behavioral subscale, on the other hand, is less straightforward. It has a grand mean of 2.48 and a standard deviation of 1.26. However, the skewness is uneven within its components, with item 1 skewed to the left (-1.39) and item 3 skewed to the right (1.54). Items 2 and 4 have a symmetrical distribution with a skewness score of 0.30 and 0.37, respectively. The interpretation of this result is that respondents generally perform prayer frequently, but memorize very little of the Quran. They also tend to be around the average when it comes to fasting or performing Omra with very few scoring high or low and most hover around the middle.

Table 2. Descriptive statistics of the behavioral religiosity sub-scale

Item	Mean	SD	Skewness
1. Number of times you pray daily.	3.8	.84	-1.39
2. Number of times you performed Omra.	1.76	1.53	0.30
3. Number of Quran verses you memorize.	1.75	1.13	1.54
4. Number of days you fast outside Ramadan.	2.64	1.56	0.37

n = 1327, range = 1 -5

3.2 Item Analysis and Reliability

Factor analysis was performed separately on the two religiosity subscales to examine their underlying structure and dimensionality. Table shows results of principal component analysis performed on the religiosity spiritual subscale. The analysis revealed a single factor solution comprising all the items with strong factor loading ranging from .79 to .89. The eigenvalue is 3.66 and the explained variance is %73.35 further confirming the strength of the loadings. To assess the internal consistency of the subscale, Cronbach's alpha was calculated. The result is .90 indicating a strong reliability in that measure. Kaiser-Meyer-Olkin Measure of Sample Adequacy (KMO) is 0.82 indicating that the sample size is sufficient for the measures undertaken. Bartlett's test of sphericity ($\chi^2 = 4405, p \leq .001$) indicating that the items in the scale are sufficiently correlated.

Table 3. Factor analysis of the spiritual religiosity sub-scale: PCA with varimax rotation

Item	Factor Loading
1. Religion plays an important role in my life.	.79
2. Without religion my life would be in chaos.	.88
3. Religion gives meaning to my life.	.89
4. Religion organizes my life.	.89
5. Prayer has a positive effect on my life.	.80
Eigenvalue	3.66
% of the variance explained	73.35
Cronbach's alpha	.90

n = 1327, range = 1 -5, KMO = 0.882, Bartlett's Test $\chi^2 = 4405, df = 10, p \leq .001$

Table 4 shows results of principal component analysis performed on the religiosity behavioral subscale. The analysis revealed a single factor solution with acceptable, but not strong loadings ranging from .57 to .70. Eigenvalue was also acceptable at 1.60 and the variance explained at %40. However, the scale has a Cronbach's alpha of .47 which is considered weak. This is not surprising given what we saw in the distribution of the individual items comprising this scale, especially given the skewness of their distribution. Kaiser-Meyer-Olkin Measure of Sample Adequacy (KMO) is 0.6 indicating that the sample size is marginally sufficient for the measures undertaken. Bartlett's test of sphericity ($\chi^2 = 227, p \leq .001$) indicates that the items in the scale are adequately correlated to justify the analysis.

Table 4. Factor analysis of the behavioral religiosity sub-scale: PCA with varimax rotation

Item	Factor Loading
1. Number of times you pray daily.	.622
2. Number of times you performed Omra.	.573
3. Number of Quran verses you memorize.	.620
4. Number of days you fast outside Ramadan.	.70
Eigenvalue	1.60
% of the variance explained	40.01
Cronbach's alpha	.47

n = 1327, range = 1-5, KMO = 0.644, Bartlett's Test $\chi^2 = 277$, df = 6, $p \leq .001$

3.3 Validity of the Religiosity Sub-Scale

The question to be answered in this part is: Do the subscales measure related constructs? In other words, is religious practice related to spiritual belief as they are measured in this study? One would assume that the two dimensions go together where strong beliefs are demonstrated in consistent actions. To answer this question a correlation was calculated between all items in the subscales. If the two dimensions are indeed related then, the analysis should reveal strong positive correlations. Table 5 shows results of this analysis. As can be seen in the table, all items show strong inter-correlations with the exception of the "Quran" item in the behavioral subscale. This particular item has no significant correlation whatever with any item on the spiritual scale. This suggests that, outside of memorizing the Quran, the two subscales seem to be measuring related constructs that reflect different dimensions of the overarching religiosity concept, one reflecting the spiritual aspect and another measuring the behavioral facet.

Table 5. Correlations between core beliefs and religious practice

Variable	Pray	Omra	Quran	Fast
Important Role	.331**	.081**	.005	.157**
Life in Chaos	.283**	.068*	.019	.142**
Meaning to life	.264**	.057*	-.038	.098**
Organize my life	.252**	.066*	.005	.090**
Positive effect	.285**	.054*	.009	.094**

*= $p \leq .05$, **= $p \leq .001$

4. Discussion

Religiosity is a complex concept that has fascinated social scientists for decades. The difficulty of measuring such a concept is that it is primarily a matter of belief. Therefore most measures of religiosity are fundamentally surrogate measure of "something else." However, we try our best to construct scales to approximate this concept in a way to reflect its multi-dimensionality. This study was an attempt to do just this. It was reasoned that religiosity has, at least, two measurable dimensions, a behavioral and a spiritual one. The behavioral dimension is reflected by self-reports of performing a variety of religious rituals such as prayer and fasting. The spiritual dimension is also based on self-reports, but of the beliefs about the role of religion in one's life.

The study used two scales to measure aspects of religiosity, and the results showed that each scale contained a single dimension neither of which had a normal distribution. The spiritual scale has a distribution skewed to the left indicating higher scores than would be expected in a normal distribution. On the face of it, this indicates a sample higher in religious beliefs than a normal population. The behavioral scale has what we might loosely term bi-polar distribution in two items with one skewed to the left (praying) and one skewed to the right (Quran memorization). The two remaining items (performing Omra and Fasting) had a normal distribution.

When it comes to the validity of the two scales, the results show that all their items were correlated, save one.

This indicates that the behavioral and spiritual measures go hand in hand. However, these results should be interpreted with caution given the asymmetrical distribution of some of the items and the low reliability of the behavioral scale as indicated by Cronbach's alpha. Components of this particular scale were erratic and internally inconsistent such that a person can regularly pray, yet memorize very little of the Quran, perhaps just enough to perform prayer. This is interesting given that the sample speaks Arabic as their mother tongue, so there are no language issues that one might expect in a non-Arabic speaking Muslim population.

Future studies should further refine the measurement of religion in a Muslim population. While self-report measures tend to be reliable on various types of activities, this may not be the case for religious behavior. A social desirability bias could be in play here with subjects over-reporting certain aspects of their piety such as the frequency of prayer, even with reporting being anonymous. Topics where socially desirable responding (SDR) is of special concern, are self-reports of abilities, personality, religious behavior, and any culturally sensitive topic. Therefore, the mean rates of prayer frequency derived from self-reports could be severe overestimates. To overcome this problem more complex methods to promote honest answers can be used such as randomized responses (Warner, 1965; Greenberg, 1969) and unmatched count (Raghavarao & Federer, 1979).

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