The Relationship Between Spiritual Disciplines and Religiosity: An Exploratory Factor Analysis of Religious Behaviors.

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Abstract
This study explores relationships and patterns of religious behaviors in students at Andrews University. Through a principal component analysis, four dominant factors were extracted. These factors were labeled Low Cost, High Cost, Low Risk and High Risk. The loading patterns suggest that people are using Rational Choice Theory to assist them in making decisions about religious behaviors. This theory makes certain predictions about human behavior which can be used to encourage people to participate in religious activities which has been shown to dissuade practitioners from certain deviant behaviors.

Background
Religiosity
Religiosity has been measured in numerous different ways. Early practices measured solely religious attendance (Tittle & Welch, 1968). Of late the literature has moved to a more multidimensional approach like measuring a combination of religious attendance, prayer and personal views of religion ([Barkan, 2007]. One of most multidimensional approaches is the BMMRS (John E. Fetzer Institute, 1999) which can be used as a whole or in parts (Mann & McKeown, 2007).

Rational Choice Theory (RCT)
RCT is based on three assumptions: (1) There are entities capable of acting purposefully, (2) an entities actions can be described as a function, and (3) the entities attempt to optimize this function as much as possible (Lovett, 2006). With these assumptions in mind RCT claims that people first identify all the variables contributing to the problem. Next the person ads values (or weights) to each variable and finally, using these values in an equation, chooses the option with the most beneficial outcome. It is important to keep in mind that people do not process information perfectly, resulting in differences in choices.

Spiritual Disciplines
Spiritual disciplines are “activities of mind and body purposefully undertaken, to bring our personality and total being into effective cooperation with the divine order” (Willard, 1988 p. 60). A common list of these practices (in no particular order) are: silence and solitude, fasting, simplicity, study, worship, celebration, prayer, service, submission. These have elicited a generally small amount of research in the field.

Hypotheses
Based on the literature we hypothesize that religious behaviors will create identifiable factors along the lines of costs and benefits as suggested by RCT.

Methodology
Data Collection
Data was collected in seven different classrooms over the course of about 10 days. Students filled out a twenty-eight question survey measuring both the frequency of religious behaviors as well as their attitudes towards them. The first eight questions were taken from the religious practices and organizational religiousness sections of the BMMRS (John E. Fetzer Institute, 1999). The questions were chose specifically to coincide with Barkan’s (2007) definition of Religiosity. The following 20 were based on the 10 spiritual disciplines consistently mentioned throughout the literature (Foster, 1978; Willard, 1988; Merton, 1957).

Analytic Approach
Merely reporting all factors with eigenvalues greater than one has been accused of resulting in too few or too many factors (Velecic & Jackson, 1990). Instead eigenvalues should be taken into consideration along with a scree test. To further prevent over extraction of factors a Horn’s (1965) test of the data was also conducted. Lastly, the factors were determined on the following criterion: loadings above .4, no or few cross-loadings and factors had to contain a minimum of 3 items to be considered (Sprang & Craig, 2007).

Findings
The KMO (.883) and Bartlett’s Test of Sphericity (p<.000) both suggest that the data is acceptable for a factor analysis. This is supported by a large amount of correlations between variables above .3. The scree plot was then used to identify the number of variables. Principal component analysis was then run again limiting it to 4 factors. The resulting four factors are Low Risk (LR) behaviors, High Cost (HC) behaviors, Low Cost (LC) behaviors, and High Risk (HR) behaviors which predict about 58% of the variance. The four factors had internal consistencies ranging from .631 to .928.

Discussion
Factors
The first factor, LR, is composed of things like prayer, worship, church attendance and self reported personal guidance from religion. At a mainline protestant campus there is little to no risk involved with participating in these religious behaviors. It is also noteworthy that this factor also includes a lot of attitudes towards different practices. This may support the old adage that “talk is cheap.”

The second factor’s name, HC, reflects the inherent effort and sacrifice of practitioners from certain deviant behaviors. The second factor’s name, HC, reflects the inherent effort and sacrifice of practitioners from certain deviant behaviors. The second factor is composed of things like fasting, monetary giving, bible study, meditation, and church volunteering. People who are participating in these behaviors are sacrificing a large amount of personal resources like time (as in the case of study and volunteering) and even tangibles like money (monetary giving or tithe).

The third factor, LC, contains behaviors which are lower in costs than those in HC and are, for the most part, passive. These behaviors include solitude (setting time aside to be alone), meditation (setting time aside to think about spiritual matters), and helping others. Although helping others may at first not appear to fit this description, keep in mind that college students are more likely to already be spending time with people adding only a little extra effort to go out of their way to help somebody.

The last factor, LR, addresses those religious behaviors which involve a considerable amount of social risk. These include confession of sins to a peer/mentor, and celebration. Confession is a perfect example of this concept of high social risk. Celebration admittedly fits less well with its factor’s definition however, it too could be viewed as containing a certain amount of social risk.

Rational Choice Theory
As a group, these factors fit very nicely into the theory of RCT. They suggest that people are engaging in religious practices based on their perceived costs and benefits. The benefits end of RCT was not addressed by this study but could be conceivably accomplished by looking and peoples claimed benefits of religion as compared to their religious behaviors. If RCT is an accurate description of people’s religious behaviors, then people practicing high risk and high cost behaviors should have a greater perception of the benefits of religion.

Limitations
This study has two main limitations: (1) an extremely religious group of subjects and (2) cross loadings of items. To address the first limitation, this study does not attempt to generalize its findings to others but instead is only looking for an overarching theory of religious behaviors. These religious behaviors are practiced the world over in very much the same way and should create similar effects in many places. As for the second limitation, cross loading may be occurring because of different personal motivation.