Final Exam

Gustavo Arruda

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# Religious Participation versus Democratic Participation

rel\_vars <- c('Q22', 'Q8', 'Q45',  
 'Q66b', 'Q66c', 'Q17',  
 'Q48a','Q48b', 'Q48c')  
  
rel\_df <-  
 read\_sav("Religion in Latin America Dataset.sav",  
 col\_select = all\_of(rel\_vars))  
  
rel\_df <- as.data.frame(rel\_df) %>%  
 zap\_missing() %>%  
 zap\_label() %>%  
 zap\_labels() %>%  
 drop\_na() %>%  
 na\_if(., "98") %>%  
 na\_if(., "99") %>%  
 drop\_na()

Contradicting previous sociological views on secularization, which predicted the decline of the importance of religion in the political arena as modernization progressed, since the 1980s religion has re-awakened in the public arena, both in the United States and in Brazil (Casanova 1994). In the United States, the Evangelical and Fundamentalist revival characterized the New Religious Right, backing the Moral Majority, prompting continued analytical relevance within sociology and political science (Hackett and Lindsay 2008; Kellstedt and Smidt 1991). Meanwhile, in Brazil, the Pentecostal movement, which shares multiple characteristics with the American Evangelical and Fundamentalists, has presented extraordinary growth since mid-20th century. In many countries, the Pentecostal movement ended up characterized by support to the military dictatorships of the 1970s and 1980s (Chesnut 1997; Martin 1990; Stoll 1990). More recently, in Brazil they now represent a third of the population, with proportional representation in Congress and increasing weight in presidential elections (Nicolau 2014), given their high political articulation and cohesion which allow for cheap and effective campaigns (Baptista 2009). In the 2018 election of the authoritarian populist President Jair Bolsonaro, who won with 55%, Pentecostals disproportionally voted for him when compared to Catholics and the religiously unaffiliated.

Simultaneously, social scientific traditions on democratic participation drawing from a Tocquevillian perspective draw attention to the role of institutional religious involvement. This current understands free civic association as a necessary connective tissue to maintain the smooth functioning of a democracy, stimulating trust, cooperation and productivity while avoiding the descension of democratic freedom into chaos. Free civic association is then correlated with both democratic values, meaning attitudes of support towards democracies, and behaviors that characterize political participation, for instance voting, writing letters or organizing a rally. Perspectives associated with this tradition ranged from preoccupation with the erosion of social ties accompanying secularization (Putnam 2000), to the operationalization of civic skills learnt in religious settings to measure political participation (Brady, Verba et al 1995). To extend these quantitative analyses to a Latin American context, I decided to use Spearman correlations and Principal Factor Analysis on the large-scale survey “Religion in Latin America” conducted by the Pew Research Center in 2014, which includes both religious and political participation variables.

# Methods

## Polychoric Factor Analysis and Spearman Correlation

The data used in this project comes from the “Religion in Latin America” 2014 survey published by the Pew Research Center, a nonpartisan think tank that researches public opinion with an expertise in religion. The survey, through 3 different languages (Spanish, Portuguese and Guarani), included nationally representative samples from 18 different countries, which together include more than 95% of the population in Latin America. In total, the dataset included 30,326 observations, going to 24,341 observations after removing all empty responses from the variables of interest.

This paper uses principal Spearman correlations and principal factor analysis (PFA), built with polychoric correlations, to explore the relationship among 9 variables, ordinal and dichotomous, from the 2014 “Religion in Latin America” survey conducted by the non-partisan think tank Pew Research Center. I grounded the variable selection on literature concerning civic association in religious contexts, political participation and democratic values. Three of the variables regard “secular politics” more strictly, two of them measuring political participation, either by community involvement or political interest, and the remaining one measuring support to democracy versus a strong leader. The other six variables measure involvement with church activities, from attendance to leadership roles.

Principal factor analysis is a technique that allow us to uncover latent dimensions in a dataset, thus facilitating the comprehension of a relatively large number of variables at the same time. PFA does not assume any prior theory or dependent variable, configurating an exploratory data analysis method rather than a confirmatory one. Using polychoric and Spearman correlations rather than Pearson’s, on the other hand, allows us to analyze a set of ordinal and dichotomous variables, given Pearson correlation assume continuous variables with linear relationships. Polychoric correlations assume data points to be binned continuous values on a normal distribution, which permits a correlation estimation of ordinal and dichotomous variables, while Spearman correlations assume only monotonicity, or a relationship that either strictly increases or decreases, not linearity. At last, I used a Varimax orthogonal rotation on my PFA model a way to facilitate the analytic distinction among factors.

# Results

The first issue that stands out is the low communality of the variables measuring democratic values (Q17) or political participation (Q8) and political interest (Q22). That means that the resulting PFA model accounts little for the variance of any of those variables. As expected, however, most of the religious participation variables show relatively high communalities, except perhaps for Q45, which measures church attendance, and Q66c, which measures conversations about own’s faith or God with people from other religions. One possible explanation is that the two items might be too broad to measure the underlying construct of religious participation, which the other variables might be measuring. Additionally, when looking at the proportion of variance in the model explained by each factor, we see a sharp decline between Factor 2 and Factor 3 (0.18 to 0.04), which justifies not including any additional factors to the model. Given that the items selected from the “Religion in Latin America” survey (Pew Research Center 2014) all indicate decrease in participation as the scale number increases, we might interpret positive correlations as going in the direction of decrease in participation or affiliation as well.

cor(rel\_df, method = 'spearman')

## Q8 Q17 Q22 Q45 Q48a Q48b  
## Q8 1.00000000 0.040721487 0.109435085 0.092165186 0.099989476 0.10762950  
## Q17 0.04072149 1.000000000 0.050429081 0.010028712 0.002086722 0.01945003  
## Q22 0.10943509 0.050429081 1.000000000 0.000568316 0.010969638 0.02390719  
## Q45 0.09216519 0.010028712 0.000568316 1.000000000 0.305401401 0.29757930  
## Q48a 0.09998948 0.002086722 0.010969638 0.305401401 1.000000000 0.49431382  
## Q48b 0.10762950 0.019450027 0.023907194 0.297579298 0.494313820 1.00000000  
## Q48c 0.08801497 0.023762679 0.034521691 0.196067917 0.364885835 0.46834243  
## Q66b 0.15007920 -0.007421158 0.010354089 0.483616171 0.321704670 0.32832500  
## Q66c 0.12304040 -0.002291214 0.037652250 0.362768640 0.240810955 0.24113573  
## Q48c Q66b Q66c  
## Q8 0.08801497 0.150079204 0.123040400  
## Q17 0.02376268 -0.007421158 -0.002291214  
## Q22 0.03452169 0.010354089 0.037652250  
## Q45 0.19606792 0.483616171 0.362768640  
## Q48a 0.36488584 0.321704670 0.240810955  
## Q48b 0.46834243 0.328324998 0.241135731  
## Q48c 1.00000000 0.230059198 0.179678175  
## Q66b 0.23005920 1.000000000 0.573933144  
## Q66c 0.17967818 0.573933144 1.000000000

fa(rel\_df, rotate = 'varimax', cor = 'poly', weight = NULL,  
 nfactors = 3, warnings = TRUE, fm = 'pa')

## Warning in polychoric(r, correct = correct, weight = weight): The items do not  
## have an equal number of response alternatives, global set to FALSE.

## Factor Analysis using method = pa  
## Call: fa(r = rel\_df, nfactors = 3, rotate = "varimax", warnings = TRUE,   
## fm = "pa", cor = "poly", weight = NULL)  
## Standardized loadings (pattern matrix) based upon correlation matrix  
## PA1 PA2 PA3 h2 u2 com  
## Q8 0.13 0.14 0.33 0.146 0.85 1.7  
## Q17 0.03 -0.03 0.17 0.032 0.97 1.1  
## Q22 -0.02 0.02 0.40 0.157 0.84 1.0  
## Q45 0.46 0.44 -0.01 0.401 0.60 2.0  
## Q48a 0.78 0.30 0.06 0.698 0.30 1.3  
## Q48b 0.88 0.30 0.14 0.890 0.11 1.3  
## Q48c 0.77 0.26 0.22 0.705 0.30 1.4  
## Q66b 0.38 0.83 0.02 0.836 0.16 1.4  
## Q66c 0.25 0.67 0.08 0.521 0.48 1.3  
##   
## PA1 PA2 PA3  
## SS loadings 2.41 1.60 0.37  
## Proportion Var 0.27 0.18 0.04  
## Cumulative Var 0.27 0.45 0.49  
## Proportion Explained 0.55 0.37 0.09  
## Cumulative Proportion 0.55 0.91 1.00  
##   
## Mean item complexity = 1.4  
## Test of the hypothesis that 3 factors are sufficient.  
##   
## The degrees of freedom for the null model are 36 and the objective function was 3.56 with Chi Square of 86600.03  
## The degrees of freedom for the model are 12 and the objective function was 0.02   
##   
## The root mean square of the residuals (RMSR) is 0.01   
## The df corrected root mean square of the residuals is 0.02   
##   
## The harmonic number of observations is 24341 with the empirical chi square 157.2 with prob < 2e-27   
## The total number of observations was 24341 with Likelihood Chi Square = 453.28 with prob < 1.9e-89   
##   
## Tucker Lewis Index of factoring reliability = 0.985  
## RMSEA index = 0.039 and the 90 % confidence intervals are 0.036 0.042  
## BIC = 332.08  
## Fit based upon off diagonal values = 1  
## Measures of factor score adequacy   
## PA1 PA2 PA3  
## Correlation of (regression) scores with factors 0.93 0.89 0.55  
## Multiple R square of scores with factors 0.86 0.79 0.30  
## Minimum correlation of possible factor scores 0.72 0.57 -0.41

Factor 1 shows a high positive correlation among occupying different church leadership positions, a moderate correlation with church attendance and with participation in scripture study or praying groups (SSPG), and a low but observable correlation with community cooperation and disposition to talk about religion with people from different faiths. Factor 2 is similar to Factor 1, but inverts between church leadership and SSPG the moderate and high associations. Finally, Factor 3, which has low eigenvalue thus not offering the same sturdiness than the other two factors, shows more sizeable correlation with the democratic participation variables (support to democracy, political interest and community cooperation), in conjunction with relatively low correlations with SSPG.

The Spearman correlation matrix repeats some of the same patterns. The only correlations above 10% among the explicitly democratic participation variables are between Q8 and Q22 (community cooperation and political interest), Q8 and Q48b (community cooperation and church leadership), Q8 and Q66b (community cooperation and SSPG), and Q8 and Q66c (community cooperation and religious conversation with other faiths). Overall, the political participation variable that seems most associated with the rest is community participation, which seems partially aligned with a social capital perspective on civic association. With the regards to the other two political variables, it is uncertain whether the association between religious and political participation in this dataset was low, or whether the validity of the constructs I am using are low. For future exploration I would suggest considering additional variables as to increase the sturdiness of the model.

# References

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# Appendix A - Questionnaire

## Democratic Participation

ASK ALL Q17 Some feel that we should rely on a democratic form of government to solve our country’s problems. Others feel that we should rely on a leader with a strong hand to solve our country’s problems. Which comes closer to your opinion?

1 Democratic form of government 2 Strong leader  
98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)

ASK ALL Q22 Would you say you follow what’s going on in government and public affairs (READ )?

1 Most of the time 2 Some of the time 3 Only now and then, OR 4 Hardly at all 98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)

ASK ALL Q8 How often, if at all, do you work with other people in your neighborhood to improve conditions in your community? Do you do this (READ)? 1 Often 2 Sometimes 3 Rarely OR, 3 Never 98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)

## Religious Participation

ASK ALL Q45 Aside from weddings and funerals how often do you attend religious services… more than once a week, once a week, once or twice a month, a few times a year, seldom, or never?

1 More than once a week 2 Once a week 3 Once or twice a month 4 A few times a year 5 Seldom 6 Never (SKIP TO Q52) 98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)

ASK IF ATTENDS RELIGIOUS SERVICES MORE THAN NEVER (Q45 = 1 THRU 5) Q48 Thinking of the church or place of worship that you attend most often, are you [INSERT], or not?

1. a member of the church council there?
2. the leader of any small groups or ministries there?
3. a teacher in Sunday school or other religious education classes?

1 Yes 2 No 98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)

ASK ALL Q66 Please tell me how often you do each of the following. Would you say at least once a week, once or twice a month, several times a year, seldom, or never? (READ LIST) (SHOW CARD)

1. participate in prayer groups or scripture study groups
2. share your faith or views on God with people from other religions

1 At least once a week 2 Once or twice a month 3 Several times a year 4 Seldom OR 5 Never 98 Don’t know (DO NOT READ) 99 Refused (DO NOT READ)