

Statistical Analysis:
The Relationship Between Religious Attendance and the Obama Vote in 2012

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Abstract

As a nation founded upon principles of Christianity that prides itself on religious freedom, the United States has always considered religion at the polls. Citizens tend to seek out political candidates that reflect and promise to uphold their values in office. However, church attendance has been declining over the past 50 years, which can partially explain Barack Obama's 2012 victory in the presidential election over his devoutly active Mormon challenger, Mitt Romney. The question of which demographics voted for Obama more has become a question among statisticians. They have discovered that the less-religious, more educated voters tended to vote for Obama, the Democrat candidate, in 2012. Upon further statistical analysis, a moderate statistical relationship exists between a state's population that regularly attends worship services and the percentage of a state's population that voted for Obama. More specifically, there is a negative or indirect correlation, meaning that the more a person attended worship services, the less they tended to vote for Obama in 2012. While causation cannot be proven between variables, this correlation can help political candidates understand how to appeal more effectively to voters of the opposing party in the future.

Keywords: religion gap, voting demographics, statistical relationship, indirect correlation, linear regression, worship services

I. History and Current State of Related Academic Literature

Religion and politics are inextricably connected, and it is easy to understand why; these facets of life share a moral component, so it follows that citizens would prefer to vote for those who reflect the values they practice in their respective religions.

The connection between church attendance and candidate choice is one that has been scrutinized closely in the academic world, and the literature on the topic is vast; one researcher examined citizen perception of political candidates' faith and how these perceptions may relate to electoral behaviors (Sheets, Domke & Greenwald 2011). They measured the level of religiosity and patriotism demonstrated by McCain and Obama in 2008 and how citizen perception of their traits correlated with attitudes toward these individuals as well as the citizens' level of confidence in their votes (Sheets, Domke & Greenwald 2011). They found that perceptions of the aforementioned traits "related to voters' overall candidate attitudes and intended vote choice and that they were connected significantly more strongly for self-described Republicans than Democrats" (Sheets, Domke & Greenwald 2011).

Additional studies have been conducted to determine whether a person's moral foundations can predict whom they voted for in 2012 (Franks & Scherr 2015). According to the results, conservatives are most likely to adhere to the tenants of binding foundations, or foundations of order and cohesion, because they emphasize purity, authority, and in-group loyalty over harm and fairness (Franks & Scherr 2015). On the other hand, liberals are more likely to adhere to individualizing foundations, or community values and the common good, because they tend to emphasize harm and fairness over loyalty, purity, or authority in their political behavior (Franks & Scherr 2015).

Research has also confirmed that sociopolitical categories, including religion and church attendance, have a major shaping influence on America's voting tendencies and contribute to voting patterns over time (Warf & Leib 2011). The Republican Party, which has family values and freedom of religion in common with Christianity, for example, has enjoyed the support of the Christian population for decades (Warf & Leib 2011). This has helped Republican candidates to consistently earn the votes of the Southern and Midwestern United States (Warf & Leib 2011). In fact, 70% of those who attend church services weekly have voted Republican since 1992. (DiSalvo & Copulsky 2009). This is not to say, however, that religious identity can always predict candidate preference or that party affiliation can predict the likelihood that a person attends church (Warf & Leib 2011). For example, although Republicans usually lean more religious, Obama won more support from Catholic voters in the 2008 presidential election than McCain, but not Baptist voters (Warf & Leib 2011). Additionally, in 2012, Pew Research found that traditionally Democrat groups, like Hispanic Catholics, Jews, black Protestants, and religiously unaffiliated people, showed the most support for Obama, while those who historically voted Republican, including white evangelicals, supported Mitt Romney ("How the Faithful Voted" 2020). This entails that political support varies by denomination. Interestingly, 2008 exit polls from 33 Democrat primary elections also show that Obama's voters tend to be educated, young, wealthy, non-religious, and male (Fisher 2011).

The existing literature on religious adherence and voting behavior has also shed light on religious trends in America; in the aforementioned analysis of voting behaviors of various demographics from 33 Democrat primary elections, researchers discovered that there is a widening religious gap between church attendance today compared to church attendance 50 years ago (Fisher 2011). Attendance is on the decline, and the authors of this particular study

attribute Obama's 2012 electoral victory to his support among secular states with large populations of non-churchgoers, including Oregon and the entire Northwest region of the United States (Fisher 2011). They infer that ideological liberals and the educated population are less likely to vote for religious political candidates (Fisher 2011).

It is clear from existing research that religion is a positive tool that motivates people to participate politically. Social scientists have proven the impact of religion on electoral habits; they have highlighted the general shift away from religion in the United States; and they have identified the tenants of conservatism found in Christianity as well as the tenants of liberalism found in secularism. Nevertheless, few have attempted to be as specific as proving a statistically significant relationship between church attendance and support for or against Barack Obama — or explaining what the implications of such a relationship might entail. This paper will conduct a statistical analysis to determine the relationship between religious attendance and the percentage of the vote Obama received in the 2012 election. It will conclude by discussing what these findings mean for the future and pose questions for further research.

II. Research Question, Hypothesis, and Methodological Approach

The research question for this paper is, "What is the relationship between the percentage of the state's population who frequently attend religious services and the percentage of the vote Obama received?" For this research question, the hypotheses are as follows:

Null hypothesis: There is no relationship between the percentage of the state's population who frequently attend religious services and the percentage of the vote Obama received.

Research hypothesis: There will be a relationship between the percentage of the state's population who frequently attend religious services and the percentage of the vote Obama received.

Directional research hypothesis: The state's church-attending percentage of the population will give a smaller percentage of the vote to Obama

Independent (X): % of a state's church-attending population

Dependent (Y): % of the vote Obama received

Salkind's flow chart in chapter 9 indicates how to choose the proper statistical test for the research hypothesis (Salkind & Frey 2020, 178). Following the flowchart, the first question is, "Are you examining relationships between variables or the difference between groups of one or more variables?" (Salkind & Frey 2020, 178). The correct choice on the flow chart is, "I'm examining relationships between variables" because the research question deals with two variables — regular church attendance and votes for Obama (Salkind & Frey 2020, 178). The best calculation for determining whether a significant relationship exists between two variables is the correlation coefficient, according to Salkind & Frey (2020). The correlation coefficient is "a numerical index of the relationship between two variables" (Salkind & Frey 2020). Simple linear regression will be used to establish how strong the relationship is between the dependent and independent variables. Furthermore, the data will be charted with a scatterplot, and a line of best fit will be calculated and drawn to show what kind of correlation exists. There will also be a bar graph that depicts which regions of the United States gave the most votes to Obama and determine the level of religiosity of the states that gave him the most votes. This will make it clear if there is a relationship between the percentage of a state's population that regularly

attends religious services and the percentage of the vote Obama received — and it will indicate the strength of the relationship as well.

III. Statistical Analysis Findings

Figure 1 below shows the SPSS calculations for the correlation coefficient.

Figure 1:

Correlations		Obama percentage 2012	Percent frequently attend relig serv (Pew)
Obama percentage 2012	Pearson Correlation	1	-.595**
	Sig. (2-tailed)		<.001
	N	50	50
Percent frequently attend relig serv (Pew)	Pearson Correlation	-.595**	1
	Sig. (2-tailed)	<.001	
	N	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

According to Salkind and Frey (2020), the higher the correlation value, regardless of its sign, the stronger the relationship. The correlation coefficient shown in Figure 1 is -.595, indicating a moderate correlation between -1.00 and .00. The SPSS output above also shows that the two variables are related to one another and that as the percentage of the state's population who attend religious services increases, the percentage of the population given to Obama decreases.

The scatterplot in Figure 2 below visualizes that, as Y decreases in value, X increases in value, and it is depicted with the regression line or line of best fit. This chart has a negative slope reflecting an indirect or negative correlation, so it appears that, given the data, the more one attends religious services, the less one tends to vote for Obama.

Figure 2:

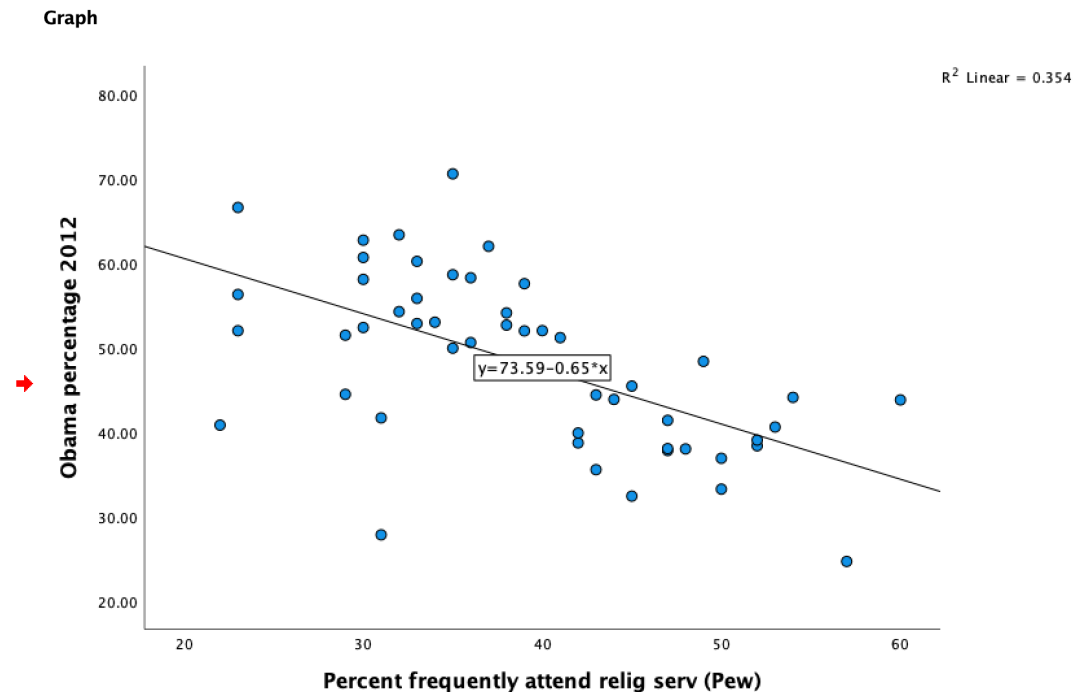


Figure 3:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.669 ^a	.447	.436	7.72782

a. Predictors: (Constant), Percentage high religiosity (2012)

In terms of the meaningfulness of this particular relationship, Figure 3 demonstrates that the coefficient of determination is 0.669 squared, which is 0.447. This means that approximately 45% of the variance in one variable, votes for Obama, can be accounted for by the other, religious attendance. Of course, this does not mean causation; it only implies that the two variables are correlated. However, the adjusted R-squared, which provides a more honest value

to estimate the R-squared for the population, is .436, a relatively modest and somewhat weak association, according to Salkind & Frey (2020).

Figure 4:

Coefficients^a						
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	78.340	4.965		15.779	<.001
	Percentage high religiosity (2012)	-.766	.123	-.669	-6.232	<.001

a. Dependent Variable: Obama percentage 2012

This part of the linear regression calculation shown in Figure 4 indicates in the first two columns that, for every -.766 unit decrease in religiosity, a .123 unit increase in support for Obama is predicted.

Figure 5:

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2319.650	1	2319.650	38.843	<.001 ^b
	Residual	2866.519	48	59.719		
	Total	5186.169	49			

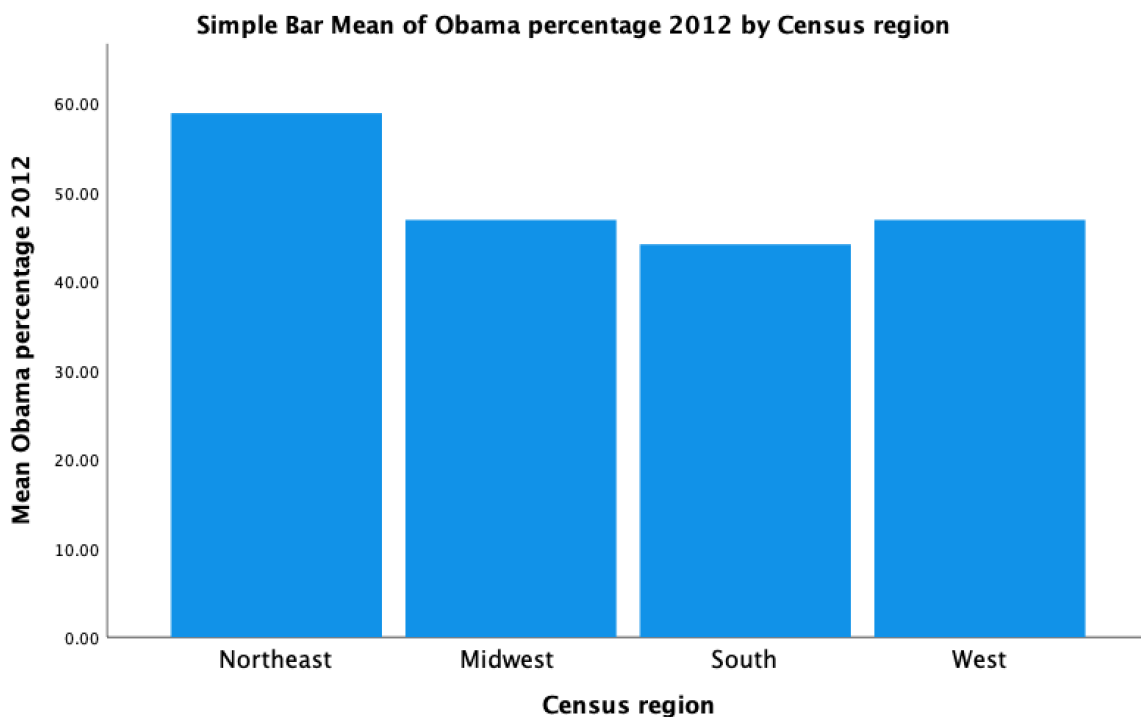
a. Dependent Variable: Obama percentage 2012
b. Predictors: (Constant), Percentage high religiosity (2012)

Using the ANOVA table in Figure 5 above, we can use the last two columns to answer, “Do the independent variables reliably predict the dependent variable?” Because the p-value is less than 0.05 at $p < .001$, we can safely conclude that, yes, the independent variables (religious attendance rates) reliably predict the dependent variable (votes for Obama in 2012). It can safely

be concluded that the percentage of the state that frequently attends religious services can be used to reliably predict whether or not they voted for Obama.

The academic literature has established that the Northeastern United States has lower rates of religious attendance than the other regions of the nation (“How the Faithful Voted” 2020). After inputting the data on Obama’s support by region into SPSS and generating the bar graph below, it became clearer that Obama’s support comes from non-religious areas of the country. Figure 6 further supports the hypothesis that those who regularly attend religious services tended to give fewer votes to Obama in 2012 and vice versa.

Figure 6:



IV. Conclusion and Questions for Future Research

The statistical analysis from section III confirms the hypothesis that the independent and dependent variables are correlated, even though the correlation is moderate. There is, in fact, a relationship between the percentage of a state’s church-attending population and the percentage

of the vote Obama received from those states in 2012, so the null hypothesis can be rejected.

This entails that much of the church-going population in the future will favor Republican candidates and that Democrats will need to understand religious and conservative values better and campaign harder to win the support of red states.

In the future, it would be worthwhile to study whether the political influence of pastors, priests, or other religious leaders has an impact on candidate choice; it may appear from statistical analysis that Republicans are religious voters because of shared personal values between church and party, but because a correlation does not equate to causation, there may be underlying factors influencing their vote. It would also be interesting to explore the religious tendencies of Democrats. Not all left-leaning citizens are secular, and knowing which religions they gravitate toward and the values that compel them to identify as Democrats would help to explain why Obama won more support from certain denominations than the other religious candidates in two separate elections.

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