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Income Inequality and Voter Turnout in the United States

Introduction to Political Research

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Abstract

While early research on voter behavior pointed out the different types of political participation, the strong positive relationship between participation and socioeconomic status, particularly education, life-cycle changes in participation, and the equal dispersion of participation in countries with strong labor parties, recent research has focused on providing a solid theoretical logic for participation, explaining empirical observations, and accounting for the long-term decline in political participation in the United States. While scholars have noted the strong positive relationship between voter turnout and socioeconomic status, socioeconomic models of voter behavior have been unable to match theory predictions with empirical observations. Rising education levels, the expansion of the electorate, and a reduction in administrative barriers to registration have failed to increase or maintain voter turnout levels in the United States. Aside from income, few studies have explored the relationship between economic distribution and voter turnout. Findings derived from cross-sectional studies that claim the likelihood an individual will vote increases with higher income do not explain how long-term rises in income inequality affect political participation. This study examines the relationship between the Gini coefficient and voter turnout rates at the national level for every election year between 1968 and 2012. Findings from this study support a weak to moderate negative relationship between the Gini coefficient and voter turnout when the education is controlled. The results also support a very strong positive relationship between the Gini coefficient and education level at the national level, indicating that economic inequality and education levels are rising at equal rates.

Ambiguity and the Three Voting Models

Who votes, who doesn't, and why? Like most new fields of research, early studies of voting were narrow in their scope (Evans 2004). Prior to the 20th century there are virtually no examples of voter behavior studies. It wasn't until the franchise was extended across classes and to women at the turn of the 19th century that the first voter studies began to emerge (Ibid). While De Tocqueville, Marx and other theorists predicted that women and working class voters would support the Socialist party and gender-oriented candidates, the extent to which their predictions were invalid and the extent to which working-class parties failed to prevail despite their numerical advantage drove spectators to search for reasons behind the voting patterns of the fully enfranchised electorate (Ibid). However, the absence of quantitative data made it nearly impossible for scholars to conduct valid and reliable quantitative studies. The introduction of survey and polling companies in the 1930's led to major advancements in the study of voter behavior (Evans 2004). The availability of individual-level data improved ecological inference, allowing scholars to perform more precise studies without sacrificing the validity and accuracy of their claims (Jacobs and Skocpol 2005, 215-217). These developments gave birth to the three primary models of voting: the sociological model, the psychosocial model, and rational choice theory.

The Sociological Model

The first quantitative voting study, *The People's Choice,* (Lazarsfeld, Berelson, Gaudet, 1968) used Erie County, Ohio as a sampling district to examine the 1940

Presidential Election. By using panels to interview respondents on a number of occasions, Lazarsfeld and his colleagues were able to measure the influence of the media on voters' attitudes and preferences (Lazarsfeld 1968). While Lazarsfeld's (1968) main hypothesis was that the act of voting is an individual act most affected the voter's personality and their response to media exposure, his study's results failed to support this assumption, instead suggesting that the role of the media is modest and that the social groups to which voters belong have the greatest influence on the choices they make (Lazarsfeld 1968, 63-69).

Lazarsfeld's sociological model of voter behavior was criticized for over-focusing on individuals while failing to address the larger social, political and economic structures that influenced voter behavior. Though it could explain the long-term consistency in how individuals vote, the model did not have the capacity to account for variations that occur due to economic issues specific to each election (Shively and Stein 2002). These limitations gave rise to the psychosocial model of voting.

The Psychosocial Model

The psychosocial model of voting, dubbed 'the Michigan Model' for this paper originated from a series of studies conducted by the Survey Research Center at the University of Michigan during the 1948 Presidential Elections (Campbell, Miller and Stokes 1960). Because of its ability to take into account a wide array of social, political, and economic variables, the Michigan Model has remained one of the most notable theories in voter studies. The central concept of the Michigan model is partisanship, which Campbell and his colleagues describe as a psychological affinity characterized as a stable, long-term relationship with a political party that does not

necessarily stem from a concrete connection with the party (Campbell et al. 1960).

According to Campbell (1960) partisanship develops during the socialization

process of adolescence when individuals adopt the attitudes and values of those

around them (Evans 2004).

The authors use the funnel of causality, a model of decision making within

large groups, to describe the relationship between variables (Campbell et al. 1960).

The sociological characteristics lie at the entrance of the funnel, or the wide end and

influence the next variable, partisanship (Campbell et al. 1960). Though a great deal

of emphasis is placed on partisanship, the model does not pair partisanship with a

specific vote choice (Campbell et. al. 1960, 122). Instead of acting as a variable that

is matched with a specific candidate, the role of partisanship is described as a

decisive variable that shapes how an individual votes by acting as a perceptual filter

that filters in what is ideal to the voter's party and filters out what is unfavorable

(Campbell et al. 1960, 123). In this context, prospective voters will use partisanship

as a tool to evaluate the candidates, the issues, and other relative factors until they

have determined their vote (Evans 2004). While the funnel of causality includes a

multitude of variables thought to influence voter behavior, it places the most

emphasis on partisanship and focuses less on social factors and communication

mechanisms (Nie 1996).

While the Michigan model has received praise since its formulation in 1960,

it has also been met with criticism by those who reject its extreme emphasis on

partisanship. In justifying their concerns, these critics cite difficulty in applying the

model to systems that are not bipartisan and a weakening connection between

individuals and political parties in the United States (Nie, Verba, & Petrocik, 1976,

Stanley & Niemi, 1991). Dalton, Flanagan, & Beck (1984), and Fiorina (1981) reiterated these concerns stating their belief that it is the broader sociological factors that are most involved in deciding how voters will perceive central factors like issues and candidates (Dalton 2000). All of these researchers direct these criticisms at the model's inability to account for the misalignment of voters that has become manifest in Western democracies since the 1960's (Aldrich and Abramson 1982). The controversy surrounding the Michigan Model's emphasis on partisanship has contributed to the prevalence of rational choice theory.

Rational Choice Theory

Since Downs (1957) first published rational choice theory in *An Economic Theory of Democracy*, the model has remained one of the most contentious formal theories in political science due to the fact that it always under predicts turnout rates in mass elections (Levine and Palfrey 2007, 143). Rational choice theory attempts to explain electoral behavior by relating it to economic limitations that produce a political outcome (142). The theory assumes that voters, like individuals, are rational actors capable of weighing the costs and benefits of the outcomes associated with their vote choice (Downs 1957, 291). The theory suggests that voters base their decisions on two things: retrospective voting and prospective voting (Downs 1957, 290). In short, voters evaluate the incumbent party's past performance and make predictions about how the party will perform in the future when deciding how to vote (Levine and Palfrey 2007, 144). Downs compares the parties in democratic societies to entrepreneurs in capitalist economy (Downs 1957, 295-296). In order to fulfill their interests, the parties will create whichever policies they believe will gain them the most votes just as entrepreneurs will produce

whichever products they believe will reap the greatest profits (Downs 1957). The entire theory itself is built on the assumption that all actors, both individuals and the political parties, are rational and rationality is defined as acting in accordance with one's own self-interest (Downs 1957).

To determine their vote, Downs (1957) presumes that voters will compare the expected outcomes of the ruling party retaining their power with the outcomes they expect if the opposition party wins (Downs 1957). If the difference between the outcomes is positive, voters will vote for the governing party, while if the difference is negative, they will vote for the opposition party. In the case that the difference is zero, the individual will not vote (Downs 1957). However, while the nature of democratic societies allows parties to tailor their election proposals to the interests of social groups, their power to adapt is also limited by the voter's need for consistency (Nie et. al. 1996). Without consistency, the voter is unable to predict how each party will perform. According to rational choice theory, voter turnout declines when the voter cannot identify any differences associated with the victory or defeat of either candidate.

Despite its popularity, rational choice theory has been criticized for its lack of explanatory power. Uhlan (1989) discounted the theory for its inability to explain individual participation in collective action (390). Blais (2000) offered a similar criticism, pointing out that unfortunately for the theory, people do vote (Ibid, 300). His findings even go so far as to suggest that about half of all voters make decisions without performing any calculation or analysis of the costs and benefits (Ibid, 315). Green and Shapiro (1994) directed their criticism at Down's methodology, suggesting that the theory is structured in a manner that protects it from encounters

with unsupportive evidence (227). More specifically, they highlight the biased ways in which evidence is selected, used and interpreted (228).

Overall, the vast majority of criticism directed at rational choice theory focuses on the model's underlying requirement that voters are informed, intelligent individuals. The basic theory often under predicts turnout rates in mass elections by a long shot, a paradox that has sparked contentious debate about the validity of the rational choice model in general (Levine and Palfrey 2007, 143). Even scholars sympathetic to the theory have had difficulty resolving the discrepancy between the theory's predictions and empirical observations (143). While some scholars have attempted to mediate these cleavages, their solutions take us back to explanations outlined by the sociological and psychosocial models (Stanley and Niemi 1991, 196).

Modern Variations of the Three Models

Throughout the 20th and 21st centuries, the three models outlined above have served as stable foundations for modern research. In *The Responsible* Electorate, V.O. Key Jr. and Milton C. Cumming (1966) published their Responsible Electorate Model. The Responsible Electorate Model builds on rational choice theory in response to criticisms made by Campbell. In the publication, Key is critical of the Michigan Model for painting such a negative image of the American electorate, insisting that the same data can be re-interpreted to show that the American electorate is in fact capable of making informed decisions (Claggett et. al. 1984, 77-79). In his study, instead of grouping the population by their partisan affiliation, Key categorizes citizens on how they vote in sets of elections (Evans 2004). Key calls those who vote for the same political party in two consecutive elections standpatters. Those who vote for one party in one election and another party in

another election are called switchers. Those who vote in one election after not voting in a prior one are called 'in and outers' or 'new voters'. Key's model states that the 'switchers' are the most rational voters as their lack of partisan affiliation ensures that they are certain to base their vote primarily on their evaluations (Flanigan and Zinghale 2015). Despite the Responsible Electorate Model's ability to explain declining partisanship and the increasing number of independents, Key's work has been criticized for its heavy reliance on survey data (Evans 2004).

Similar to the Michigan Model, Morris Fiorina's (1978) Model of Retrospective Voting asserts that voters base their decisions on information from the past because it is easier for humans to evaluate the past than it is for them to predict the future (429). In his argument, Fiorina (1978) suggests that party image plays the largest role in determining vote choice, as voters are constantly analyzing each of the parties (432). This logic holds that it is rational for individuals to split their vote between Congressional and Presidential elections if they don't want the political agenda to advance too closely to one party's view (Evans 2004). Though Fiorina's model accounts for the trend toward divided party government that the United States has endured since the 1970's, Nie, Junn and Stehlik-Barry (1996) criticize Morris's theory contesting that retrospective voting is impossible because political parties are weak and inconsistent in their policies.

Aggregate voter turnout has been essentially unchanged by increases in educational attainment over the past few decades. This trend has led to the development of another model in which relative, rather than absolute education is what determines political participation (Nie, Junn, and Stehlik-Barry 1996, Tenn 2005, 271). The problem with a relative education model of turnout is that empirical

tests have been unable to separate the impact of education from other variables that influence participation (Ibid, 272). The fact that education has so much explanatory power in cross-sectional variation, but so little explanatory power in time-series trends remains a paradox that is not fully understood by scholars (Ibid, 272).

Declining Voter Turnout and Economic Inequality

While early empirical studies focused on the different types of political participation and socioeconomic status, modern research has focused on explaining empirical observations and accounting for the long-term decline in political participation within the United States (Brady 2004, 670-673). Since the 1960's, voter turnout has only exceeded 60% twice (Flanigan 2015, 70). While the political theorists outlined above have presented a variety of different explanations for why people vote the way they do, none of them can adequately account for this decline. Though most scholars agree that socioeconomic status is the best predictor of voting behavior, developments like the Civil Rights movement, rising education levels, and reduced barriers to registration have failed to equalize the electorate (Jacobs and Skocpol 2005, 216-217). Brady (2004) suggests that socioeconomic models of participation are problematic because they fail to distinguish between preference, resource, and opportunity explanations since socioeconomic and demographic attributes can serve as proxies for all three factors (674). Additionally, though traditional models have supplemented socioeconomic measures of education, occupation and income with some demographic variables, few have dug deep into the actual connection between income distributions and political activity (670). Findings derived from cross-sectional studies that claim the likelihood an individual will vote increases with higher income only capture part of the picture

(667). They do not explain how long-term rises in income inequality affect political participation (668).

Overall, while the past century of research on voting behavior has offered no shortage of explanations for why people vote the way they do, even the most recent models have failed to examine economic correlates and causes (Skocpol and Jacobs 2005, 217). Income levels and income distributions should be considered equal to socioeconomic factors when it comes to examining what influences voter behavior (Ibid, 217). While the co-occurrence of increasing income inequality and declining political participation in the United States from the 1970's onward may be coincidental, given that voting is still one of the least well-understood phenomena in the study of politics, the relationship is certainly worth investigating. This study will examine the relationship between income inequality and political participation in order to test whether or not the decline in voter turnout since the 1970's can be linked to increasing wage and income inequality.

Methodology

As mentioned in the previous section, past models of voting behavior have failed to explain the long-term decline in voter turnout in the United States. While rational choice theory would explain the decline in voter participation since the 1970's by suggesting that the costs and benefits that voters associate with each candidate or party have begun to cancel each other out at an increasing rate in recent decades, the theory does not offer an explanation as to what might cause this centralization of costs and benefits. Likewise, the decline in partisan affiliation since the 1970's has undermined the psychosocial model's explanatory power. Because it

fails to address how social, economic and poltiical structures influence voter

behavior, the sociological model is also unable to account for this decline.

        While scholars have continued to build on the theoretical framework

outlined by these models, most have focused on socioeconomic variables without

considering the role of economic distribution aside from income. A number of these

studies have highlighted the problematic nature of using socioeconomic status to

explain voter turnout. The proximal relationship between socioeconomic variables

and income makes any correlation between indicators of socioeconomic status like

race, age, educational attainment, etc. less meaningful. Socioeconomic variables are

so close to the dependent variable, voter turnout, that it is possible they could be

just as much the result of participation as they could be the cause. For this reason,

some scholars have tried to focus on how income affects the preferences,

opportunities and resources associated with these variables (Brady 2005, 674).

Because the correlation to income is more directly related to all socioeconomic

variables than the variables are to each other, there is reason to believe that income

distribution could be the missing piece of this puzzle. Tenn (2005) and Nie, Junn and

Stehlik Barry (1996) alluded to this idea when they created their Relative Education

Model. While focusing on relative rather than absolute education might help to

explain why increases in educational attainment in the United States have failed to

increase voter turnout, relative education cannot be the root cause of declining

voter turnout since it does not account for the causes of such education devaluation.

Because voter turnout began dropping at the same time the United States began

entering a series of free trade agreements that have been linked to stagnant wages

and unemployment, there is reason to suspect a negative relationship between

income inequality and voter turnout. In other words, the expectation of this study is that increases in income inequality will reduce voter turnout in both Presidential and Congressional elections in the United States.

The process by which voter turnout is measured and calculated has also evolved since the mid-19th century, further misconstruing this decline. Although many scholars now use the eligible population (VEP) as the most accurate turnout model, others have questioned this notion. A number of recent studies argue that because disenfranchised felons tend to belong to socioeconomic groups that don't vote even when they are eligible, the voting age population (VAP) may be a more appropriate measure for calculating turnout (Miles 2004). This study uses voter turnout data calculated using the VAP for several reasons. For one, the argument against using the VAP is that it underestimates voter turnout by not accounting for individuals who would have voted, had they been eligible. Because any increase in the number of disenfranchised felons is likely to reflect an increase in the prison population as a whole, and because there is likely a positive relationship between poverty and the number of felons, the VEP measure and the Gini coefficient measure of income inequality may under-estimate the causal relationship between the two measures since one of the measures is adjusted to account for disenfranchised felons while the other is not (Gini 1912). Second, as mentioned above, it is also highly probable that some felons, if not the majority, would still abstain from voting, even when eligible (Miles 2004). Additionally, even if turnout rates calculated from the VAP underestimate actual turnout and result in a more statistically significant relationship than the VEP and economic inequality, this could indicate a positive relationship between the Gini coefficient and the number of disenfranchised felons.

In other words, if the Gini coefficient increases as the prison population increases, then it would make sense for the relationship between the VAP turnout rate and the Gini coefficient to be more statistically significant than the Gini coefficient and the VEP turnout rate.

Study Design

This study tests the correlation between income inequality and voter turnout (VAP), measured by the Gini coefficient, at the 95% confidence level controlling for two measures of education. As mentioned above, data for the dependent variable, voter turnout, is calculated as a fraction denoted as P/VAP, where P is the number of votes cast and VAP is the total voting age (18 for the United States) population. For this study, the dataset on the VAP will come from the Institute for Democracy and Electoral Assistance (IDEA) and will include calculations for every year between 1968 and 2012 (IDEA 2011).

To measure income inequality in the United States, the study uses the 'Gini Ratios for Households, by Race and Hispanic Origin of Householder' dataset from the United States Census Bureau's Historical Income Tables: Income Inequality page (*Historical Income Tables: Income Inequality*). The data contained in the set is derived from the United States Current Population Survey (CPS) for every even numbered year between 1968 and 2012. While there are a number of different ways one could potentially measure economic inequality, estimations based on averages such as GDP per capita, mean individual income, and GDP growth are less suitable for measuring the distribution of income since they do not take into account how individual income compares to the general population. Measures of central tendency are also very sensitive to outliers. The Gini coefficient is a measure of

inequality that was developed by Corrado Gini (1912). It is a continuous variable ranging from 0 to 1 where 0 indicates perfect equality and 1 equals perfect inequality (Jones 2000). While the Gini coefficient is viewed as the standard measure of income inequality, it also has some limitations as does the data from the CPS. For one, the U.S. Census Bureau calculates the Gini using pre-tax instead of post-tax incomes, which may over-estimate the actual Gini (6). However, while the use of post-tax incomes may increase the chances of standard errors that exaggerate the Gini, because the Gini measure tends to under-estimate income inequality, it is safe to assume that the probability that these types of errors will counter each other once the data is analyzed and tested. The CPS is conducted by the U.S. Bureau of Labor Statistics and the U.S. Census Bureau. The CPS sample consists of independent probability samples from each state and the District of Columbia that are specifically tailored to the economic and demographic characteristics of each area (Zbikowski , 2006). The survey is designed to provide general statistics at both the national and state levels.

This study will focus on the period 1968 to 2012. The study will include 35 cases, split into three studies. One study will include the 12 Presidential elections, one study will include the 12 Congressional elections that took place during Presidential election years, and one study will include the 11 off-year Congressional elections. Breaking the data into three sets allows this study to control for election type, leading to more accurate results. Because it is expected that increases in the Gini coefficient will reduce voter turnout at the same rate for each of the three studies, breaking them up won't impact the effect of the independent variable on the dependent variable.

In addition to election type, the researcher will control for two education variables. One of the education controls measures the percentage of the United States population age 25 or older with a 4-year college degree or above since so many past studies have noted the strong positive relationship between education and voter turnout. The second education control measures the percentage of the United States black population age 25 or older with a 4-year college degree or above. If education levels are rising amongst blacks faster than general population, this could partially explain why increases in educational attainment have failed to increase turnout rates. This would be consistent with Miles' (2004) finding that blacks tend to vote at lower rates than other demographic groups.

Because this study uses aggregate data to examine the relationship between the Gini coefficient and the percentage of the VAP that voted in each election year between 1968 and 2012, the researcher will facilitate analysis by creating a new dataset based on the values obtained from the IDEA and CPS data. For each of the 35 cases, the researcher will record the Gini coefficient for that year and the VAP turnout, expressed as a percentage, and the two education control variables, also expressed as a percentage. By adding a general education control variable and an education control broken down by race, the researcher can examine whether or not any decline in turnout is significantly influenced by changes in the general education level and the general education level amongst blacks.

This study will run a multiple regression to test the hypothesis that increases in income inequality reduce voter turnout in both Presidential and Congressional elections. A multiple regression test will allow the researcher to analyze the isolated effect of each independent variable on the dependent variable when all others are

held contsant. Because the data used for this study reflects the actual levels of income inequality, education, and voter turnout for the United States population, it is a parameter study. Because no sample is used for this study, the p-values generated from the regression test are irrelevant and will not be interpreted. A Pearson correlation will also be run in order to test the relationship between the control variables, the Gini coefficient, and voter turnout. By looking at the results from the Pearson correlation matrix and scatter-dot graphs, the researcher will be able to tell whether or not the relationship amongst variables is positive or negative.

The test statistic that will be used to interpret the results from regression test and the scatter-dot graphis is the adjusted R-squared. The adjusted R-squared value will range from 0 to 1. The greater the value of the adjusted R-squared on the, the greater the association between the Gini coefficient and voter turnout (VAP). Converting the adjusted R-squared value into a percentage will tell the researcher what percentage of variation in voter turnout can be explained by each of the independent variables. The greater the R-squared value, the better the model is able to explain the variance in voter turnout from 1968 to 2012.

The null hypothesis is expressed numerically as $H_0: R^2 = 0$ where B denotes the coefficient of the Gini coefficient. The alternative hypothesis is expressed numerically as $H_A: R^2 > 0$. The null hypothesis states that there is no relationship between the Gini coefficient and voter turnout. R-sqaured values 0 or below will modify no relationship, R-sqaured values between 0 and .2 will denote a weak relationship, R-sqaured values between .2 and .4 will denote a moderate relationship and R-squared values above .4 will indicate a strong relationship.

To see the direction of the relationship between variables, this study will look at the slope of the line of best fit generated for each of the scatter-plot graphs. A positive slope will indicate a positive relationship, while a negative slope will indicate a negative one.

Regression Test:

As mentioned in the previous section, past models of voting behavior have failed to explain the decline in voter turnout since the 1970's. The results from this study support a weak to moderate negative relationship between the Gini coefficient and voter turnout in Congressional elections, but not in Presidential elections. The adjusted R-square value for the relationship between the Gini coefficient and voter turnout was below 0 for Presidential elections when both education controls were included in the model, but once the education controls were removed, the adjusted R-square value increased to .058. The adjusted R-squares value was also well above 0 for both types of Congresional elections. While the study results showed a very weak relationship between the Gini coefficient and voter turnout in presidential elections, this study rejects the null hypothesis that there is no relationship between income inequality and voter turnout in all three election types. The regression test results and the scatter-plot graphs all support the alternative hypothesis.

As it turns out, the relationship between both of the control variables and voter turnout is stronger than the relationship between the Gini coefficient and voter turnout when each of the other variables is controlled. This is hardly surprising given that both of the two control variables were measures of educational attainment. As noted in the literature review, findings from a number of studies support a strong relationship between educational attainment and voter

turnout. The following table lists the results for each of the three independent variables and voter turnout for each type of elections.

Regression Analysis Results: Impact of Gini Coefficient and Education Controls on Voter Turnout					
	Adjusted R	Constant	Variable	Beta	P-Value
Presidential Elections	-.111	76.111	Gini	-27.605	.863
			Education	-1.031	.508
			Race	1.149	.545
On-Year Congressional Elections	.229	108.847	Gini	-111.805	.435
			Education	-1.667	.237
			Race	2.268	.193
Off-Year Congressional Elections	.419	54.112	Gini	22.492	.849
			Education	-2.951	.054
			Race	3.006	.112

As the table shows, 41.9 percent of the variation in voter turnout for off-year Congressional elections between 1968 and 2012 can be explained by the Gini coefficient when the other two independent variables are controlled for. When looking only at on-year Congressional elections, the model's explanatory power decreases. The Gini coefficient accounts for about 22.9 percent of variation in voter turnout between 1968 and 2012. The multiple regression results show that the model's predictive power is lowest for Presidential elections. While R^2 values typically range from 0 to 1, SPSS adjusts R^2 values in order to account for additional vairables. The model's adjusted R^2 values for Presidential elections is negative, suggesting that none of the variation in voter turnout can be explained by the Gini coefficient when all other variables are controlled.

The Beta coefficients in the table above outline the impact a .01 increase in the Gini coefficient will have on voter turnout. In Presidential elections, a .01 increase in the Gini coefficient will decrease voter turnout by about 28%. Likewise, the model predicts that in off-year Congressional elections, a .01 increase in the Gini coefficient will increase voter turnout by about 22%. In on-year Congressional elections, the model predicts a .01 increase in the Gini Coefficient to reduce voter

turnout by about 111% but since a 111% reduction in voter turnout is not possible

because voter turnout cannot be negative, this does not explain much about actual

voter behavior. Overall, income inequality and voter turnout are not related in the

way that this study originally expected. The scatterplot graphs (Figures A1-A3)

A3on pages 29-32 show a weak negative relationship between the Gini coefficient

and voter turnout for each of the three election types. While the line of fit for each

graph has a negative slope, there is significant distance between the plotted points

and the line, suggesting it is not a very good fit. According to the regression test and

the scatterplots, there is a weak relationship between the Gini coefficient and voter

turnout.

In addition to a weak negative relationship between the Gini coefficient and

voter turnout, evidence from the test results support a negative relationship

between educational attainment and voter turnout in all types of elections when the

Gini coefficient is control. This model suggests that for every one percent increase in

the percentage of the 25 and older population that receives a 4-year college degree

or more, voter turnout will decrease by about 3% in off-year Congressional

elections. This relationship is surprising since previous models of voter behavior

have emphasized the strong positive relationship between education and voter

turnout at the individual level. Perhaps the relationship between education levels

and voter turnout differs significantly when national-level data is used.

Correlation and Control Variables:

The correlation amongst all of the variables is measured by Pearson's R

which ranges from -1 to 1, with -1 indicating a negative relationship and 1 indicating

a positive relationship. The correlation matrix for each of the three studies is given

below. As shown, both education controls have an unusually high correlation to each other and to the Gini coefficient. This implies that there is either a spurious or causal positive relationship between the education control variables and the Gini coefficient as both increase at near-equal rates. Because one of the education controls is really just a more specific measure of the other one, it is not surprising that there is such a high level of correlation.

Correlation between Education, Inequality and Turnout Rate in Presidential and On-Year Congressional Elections:						
		Gini Coefficient	Education	Race Education	VAP Turnout (Presidential)	VAP Turnout (On Year Congressional)
Gini Coefficient	Pearson's R	1	.975	.976	-.379	-.546
	P-value		.000	.000	.225	.067
Education	Pearson's R	.975	1	.994	-.389	-.535
	P-value	.000		.000	.211	.073
Race Education	Pearson's R	.976	.994	1	-.367	-.497
	P-value	.000	.000		.241	.100
VAP Turnout (Presidential)	Pearson's R	-.379	-.389	-.367	1	
	P-value	.225	.211	.241		
VAP Turnout (On Year Congressional)	Pearson's R	-.546	-.535	-.497		1
	P-value	.067	.073	.100		

Correlation between Education, Inequality and Turnout Rate in Off-Year Congressional Elections:					
		Gini Coefficient	Education	Race Education	VAP Turnout (Off Year Congressional)
Gini Coefficient	Pearson's R	1	.969	.974	-.502
	P-value		.000	.000	.116
Education	Pearson's R	.969	1	.994	-.581
	P-value	.000		.000	.061
Race Education	Pearson's R	.974	.994	1	-.529
	P-value	.000	.000		.094
VAP Turnout (Off Year Congressional)	Pearson's R	-.502	-.581	-.529	1
	P-value	.116	.061	.094	

The high correlation between the two education controls and the Gini coefficient is interesting for a number of reasons. For one, conventional wisdom would expect increases in educational attainment to reduce inequality. However, if this were true, the study would expect the Pearson correlation for the Gini

coefficient and the two education controls to be negative since increases in the Gini coefficient indicate greater inequality. However, for each of the three case studies, this is not the case. For every even year between 1968 and 2012, increases in educational attainment are associated with an increase in the Gini coefficient. While this could be a coincidence or the result of another confounding variable that is not accounted for in this study, it could also be true that there is some type of causal relationship between the Gini coefficient and educational attainment. This would certainly be consistent with the laws of supply and demand.

It is plausible that increases in educational attainment increase income inequality at the national level. In economics, supply and demand law states that when the supply of a product increases, the price of that product will drop. In theory, if this law were applied to the workforce, increases in the supply of educated workers could reduce wages if the supply of educated workers began to exceed demand for them. This could decrease wages and in turn increase income inequality as increased competition amongst the educated would allow employers to take advantage of the abundance of these workers by providing less compensation. In this context, the results from the correlation matrix are not as far-fetched as they may seem.

Conclusion:

To conclude, the variables included in this study were related in the way that the alternative hypothesis initially expected, but the relationship was not as strong as anticipated. However, the results from this study do not mean that income inequality and voter turnout is not significant. Rather, it may be that because the

nature of this study did not allow data from all election types to be tested together, the sample size was too small to produce evidence of a stronger relationship.

Given the high correlation between educational attainment and the Gini coefficient, future research should focus on examining the long-term impacts of education attainment on inequality. If increases in educational attainment really do increase inequality, the United States may want to re-evaluate the importance of education in the context of economic and political stability. Perhaps the government should promote and emphasize the importance of education only when there is evidence that the supply of educated workers is unable to meet market demands.

While the fundamental laws of economics are embedded in rational choice theory, the model itself focuses more on individual applications than on macroeconomic trends. If the preferences, resources and opportunities associated with socioeconomic status are more influential in determining voter behavior than the variables themselves, placing more emphasis on their relative distribution may alleviate the disparity between model predictions and observations. As previous scholars have noted, despite its high correlation, increases in educational attainment have failed to increase voter turnout. While this paradox has puzzled scholars, it has not spurred much change in how socioeconomic variables are operationalized. While the relative education model measures education distribution, it doesn't take the distribution of other socioeconomic variables into account. It could be that the United States' demographic diversity and complexity have created more distance between socioeconomic measures and the concepts they modify. If so, focusing on the distribution of socioeconomic variables instead of

their absolute values may result in more accurate predictive models that close the

gap between theory expectations and empirical observations.

Appendix: Measures and Limitations

The Gini summarizes the dispersion of income across the entire income

distribution by $Gini = \frac{2}{\mu n^2} \sum_{i=1}^{n} iX_i - \frac{n+1}{n}$ where μ is the population mean, n is the weighted

number of observations, and Xi is the weighted income of individual i, which is also

weighted by individual i's rank in the income distribution (Jones 2000, 11).

While the CPS has served as the primary source of United States labor

statistics since it was first administered in 1940, the survey was redesigned in 1994

in order to accommodate computer-oriented interviewing ((Zbikowski 2006, 2-1).

Although these changes raise questions about the compatibility of the pre and post

1994 datasets, very few changes have been made to the actual questionnaire since

1967, which is outside the time frame of this study (Ibid 2-1). Changes that were

made also sought to improve the validity of concept measures (Ibid).

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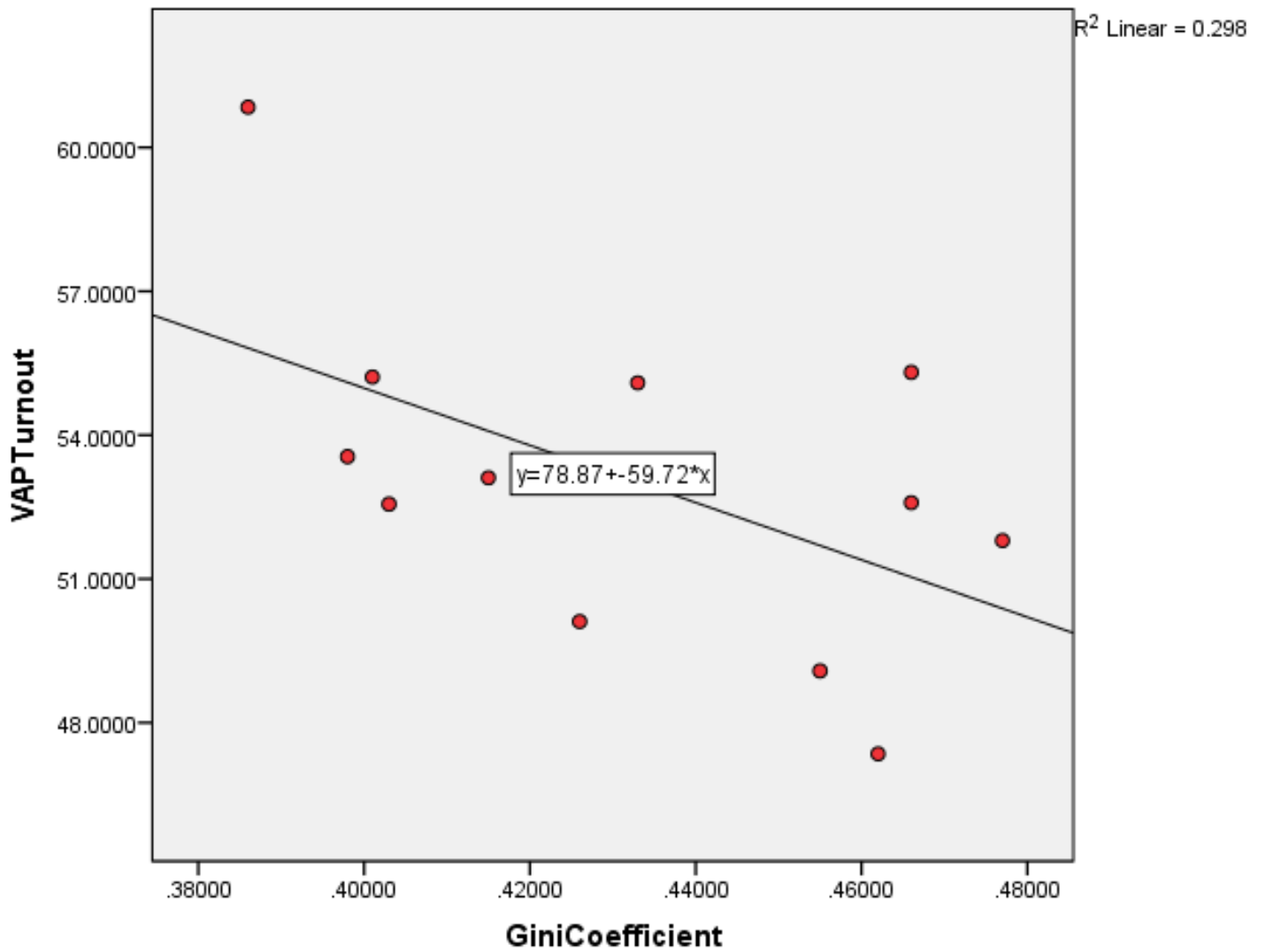
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Figures and Tables

Graph A1:

Gini Coefficient and Voter Turnout: On-Year Congressional Elections 1968-2012

R^2 Linear = 0.298

y=78.87+-59.72*x

(y-axis: VAPTurnout — 60.0000, 57.0000, 54.0000, 51.0000, 48.0000)

(x-axis: GiniCoefficient — .38000, .40000, .42000, .44000, .46000, .48000)

Graph A2:

Gini Coefficient and Voter Turnout: Presidential Elections 1968-2012

R^2 Linear = 0.143

$y=73.48+-39.32*x$
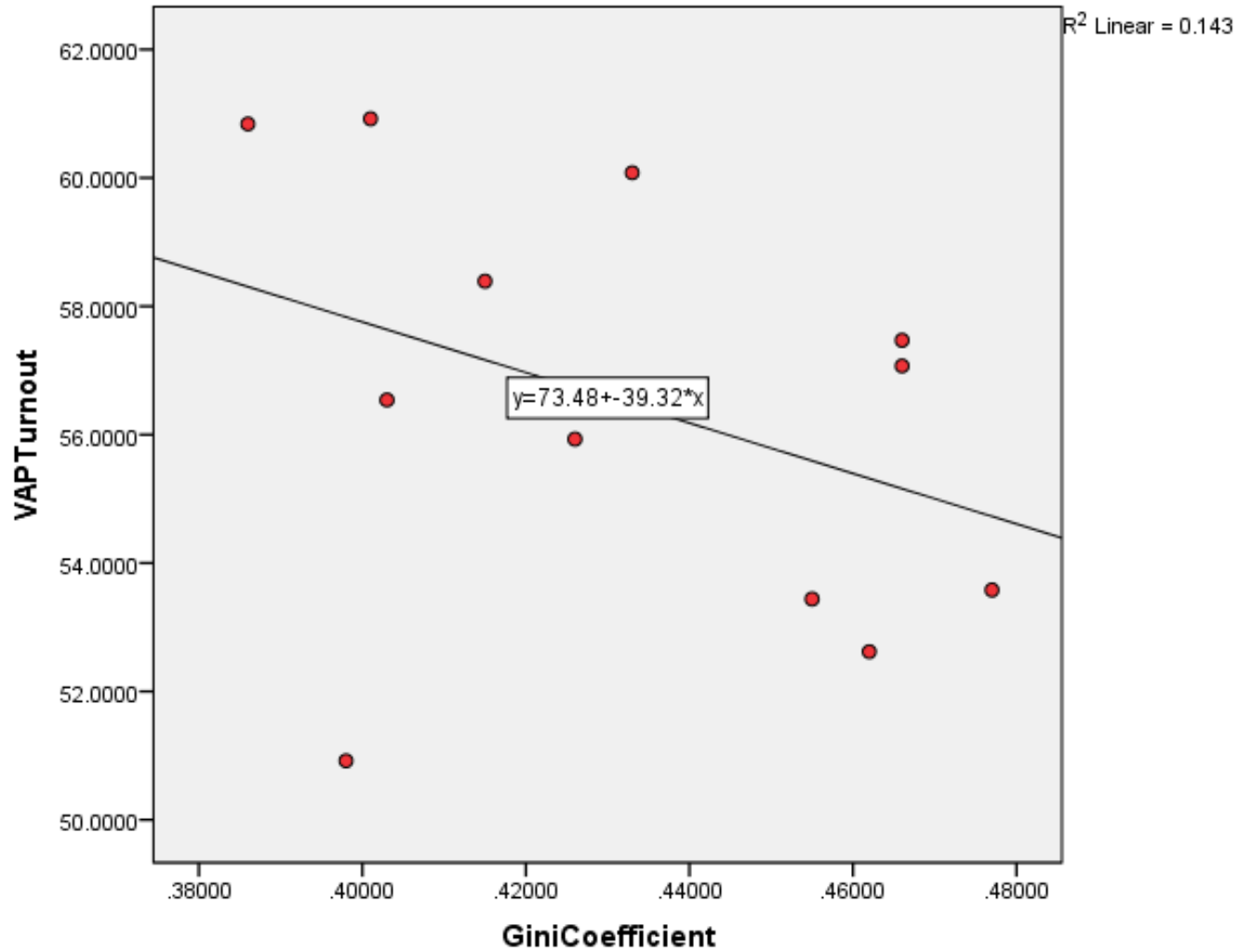
Graph A3:

Gini Coefficient and Voter Turnout: On-Year Congressional Elections 1968-2012

R^2 Linear = 0.298

$y=78.87+-59.72*x$
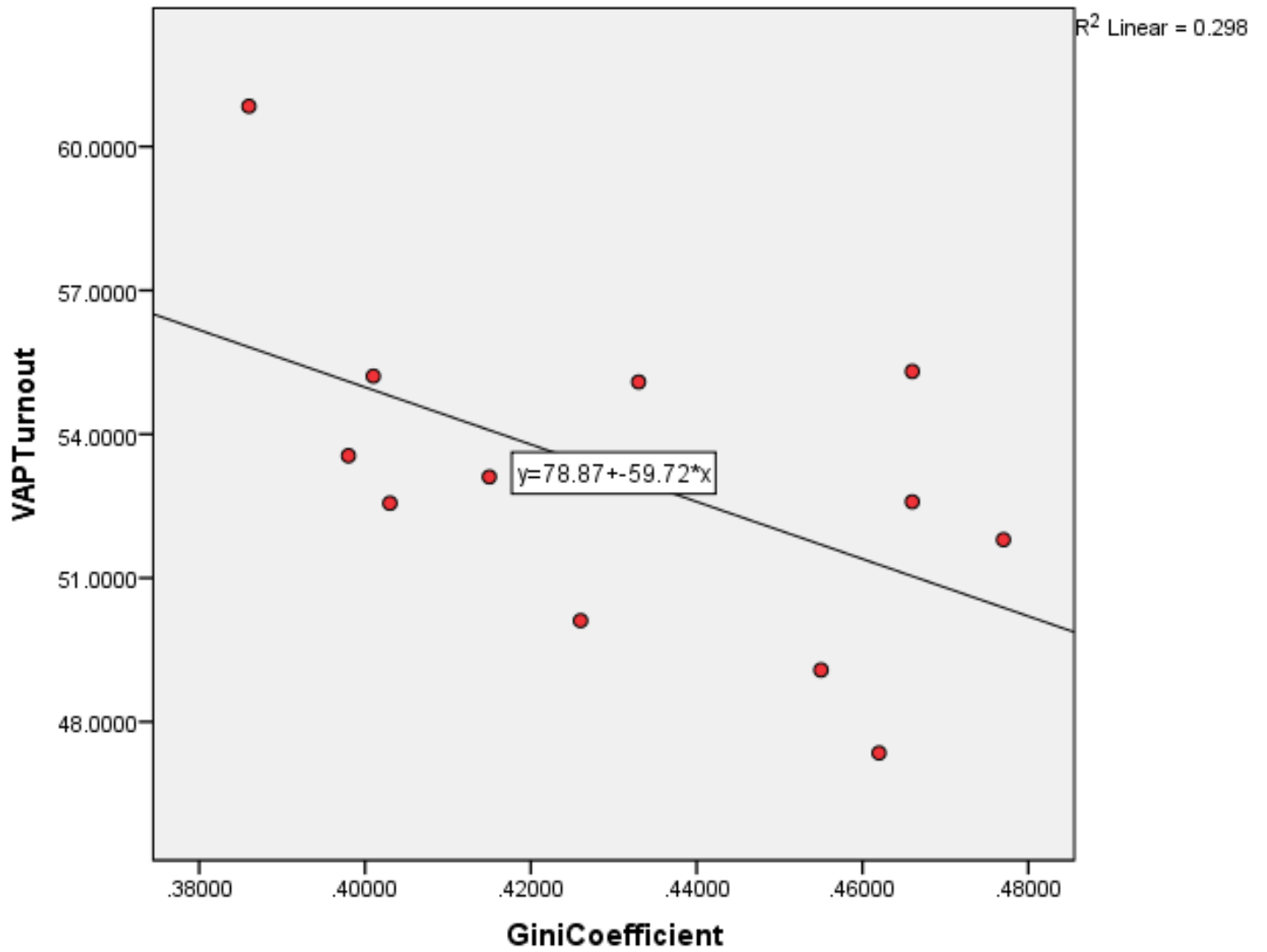
Graph A4:

Education Level and the Gini Coefficient: 1968-2012

R^2 Linear = 0.944

$y=0.33+4.7E-3*x$

GiniCoefficient

Percentage Of People Age 25+ with a 4-Year College Degree or Above