

**AN ASSESSMENT OF THE INCOME AND EDUCATION DETERMINANTS OF
PARTY IDENTIFICATION IN THE UNITED STATES**

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This thesis is dedicated to: my father upon whose shoulders rest the laurels of my achievements; my mother, the compassionate and simple caregiver; and my family, for their eternally endearing love, faith, and encouragement.

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ABSTRACT

This thesis presents an empirical assessment of specifically, the effects of people's income and education on their identification as either Democrats or Republicans. The hypothesis is that – political choices based on an indicator of people's income levels are relatively more significant and consistent than choices based on their educational attainment. The strategy of this paper is then twofold: 1) to establish whether the relationship between the primary indicator variables and the dependent variables is statistically significant; and, 2) if significant, to determine if this relationship remains observably robust across all models for both the linear probability model and logit regression methods employed in this assessment. The analyses in this thesis is based on the United States "Citizenship, Involvement, Democracy," (CID) survey data of 2005 from the Center for Democracy and Civil Society (CDACS) at Georgetown University. The findings demonstrate that education had no significant impact on people's choices of political parties. It did however, prove that income was a significant and relatively robust indicator even though this outcome held for high-income respondents only. The analyses indicate that there is a statistically significant and positive relationship between respondents from high-income households and their likelihood to associate with the Republican Party. This finding begs the question then; do income groups make "*policy-oriented*" voting choices, for it reinforces the notion that at factional levels, significant and consistent income-based differences in voting choices, exist.

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I. INTRODUCTION

The debates about the inclusivity of an increasing body of social characteristics, let alone their significance in determining people’s voting behavior, are central to the analysis of political differences. A commonality does exist however. It is generally acknowledged that a growing and varying number of group characteristics and social trends are becoming significant in explaining why people vote the way they do. Also, the study of these relationships is imperative given their far-reaching implications for not only societal mobilization but also in the distribution of power and wealth in society. Nevertheless, even as academic arguments surrounding the causal relationships of social factors and political preferences remain universal, the fervor to determine these dynamic trends is perhaps most pronounced in the United States. This thesis outlines the unique historical circumstances of electoral behavior in the U.S and how it is influenced by its voting citizens’ socio-economic characteristics (here called, “group identifications”¹). We also ask, “Is this influence statistically significant?” And, if significant, which of our two primary variables (income or education) is observably robust in determining the political preferences of the population of U.S voters.

The gradual elimination of barriers to registration and voting since the adoption of the *United States Constitution* in 1787, including suffrage in 1920; the *Voting Rights Act* of 1965, and, the lowering of the voting age to 18 in 1971, endowed significant

¹ David Knoke makes a reference to “group identifications” in his essay, “A Causal Model for the Political Party Preferences of American Men,” which is frequently cited in this thesis. The term is also used by various other political analysts (also cited in this essay) in similar references to “ethnic, racial, religious, age, gender, marital status,” and other socio-demographic bases that determine party identification and voting behavior. “Group foundations” and “group identifications” used synonymously in this paper.

rights and responsibilities on U.S citizens to elect their leaders. In the United States, therefore, Bartel's (2002) observation that "one of most basic principles of democracy is the notion that every citizen's preference should count equally in the realm of politics and government," has largely been achieved. Nevertheless, the achievements in increased liberal democratic rights in the political and legal spheres have far outpaced those of other complementary, but equally fundamental conditions for social and economic equality. In particular, the lag in the development of socio-economic spheres has meant that while the right to voice preferences has been recognized and legitimated, it has not necessarily ensured that every citizen is guaranteed an equal opportunity and therefore, share in national wealth. It is these socio-economic conditions, which influence the political identification and crucially, the voting behavior of people that is assessed at length in this thesis.

The efforts to determine party preferences on the basis of group identifications such as race, religion, ethnicity, age, gender, marital status, income, education, and numerous such social, political, demographic and economic variables have continued despite debate among electoral scholars surrounding their measurement and robustness. On the contrary, as Jackson and Carsey (2002) notes, "political identification remains central to the study of American political behavior."

The rationale for the growing interest in analyzing electorate behavior based on group-characteristics is distinctively different today as compared with fifty years ago. Saunders' (2006) study of the dynamic shifts in the socio-economic bases of political parties recalls that:

Fifty years ago it was relatively easy to predict how somebody was likely to vote simply by knowing their social class background. While a substantial minority of working class voters supported parties of the right, very few middle class voters supported parties of the left. If you knew someone was middle class, therefore, you could assume with a reasonable level of confidence that they were also politically conservative. (p.3)

Much has changed in fifty years. Minorities and women have become economically important; issues-based political support has become as important as the ideologies of the ‘old parties’; and, people in general, have become more mobile both domestically and internationally. In all, the tectonics of social characteristics shifted from only ‘class’ indicators to include other socio-economic characteristics.

Studies in recent decades however, have focused more intensely on a few of these socio-economic characteristics. The two that political analysts have increasingly turned to in order to explain both “vote choice and change in the outcome of elections” (Brooks & Brady, 1999) are economic sources such as income (see Brooks & Brady, 1999; Bollen & Jackman, 1995; Muller, 1988; Haynes & Jacobs, 1994); and, social sources such as education (see Campbell, 2006; Campbell, 2007; Dee, 2004; Tenn, 2005). Studies of these factors have produced often surprising findings about the causal relationships between these variables and party identification. A growing body of recent studies indicate that individuals in higher income groups and more-educated individuals are more likely to make well-formulated and more-informed choices; more likely to turn out to vote; much more likely to have direct contact with public officials; and more likely to contribute to public office campaigns (thereby influencing public policies disproportionately), relative to low-income groups and less-educated people.

In view of the importance of individual socio-economic characteristics in determining voting behavior the aim of this paper are: first, to analyze whether the factors of income and education are significant in explaining people's decision to identify with either the Republican Party or the Democratic Party within the confines of the dataset used in this study; and, second, to assess if either of these factors is relatively more stable and consistently indicative of people's political inclinations.

Previous literature in the field of electoral studies has been limited in analyzing the simultaneous effect of indicators comparatively. When comparisons were made, they were often tailored to the interests and specific goals of the study, with authors claiming predictive superiority of their variable of interest over others. While this thesis is not in any way an attempt at providing a decisive judgment on the explanatory power of either income or education as a determinant of voting behavior, it does seek to lend credence to the hypothesis that: economic sources such as income, are relatively more significant and consistent² than educational sources in determining people's identification with either the Republican Party or the Democratic Party in the U.S.

II. LITERATURE REVIEW

As Knoke (1972) notes, "Lipset's seminal work³ with cross national surveys was instrumental in creating the image of elections as 'the Democratic translation of the class struggle (p.679).'" Since then, several works in political analysis have pointed to the importance of ethnicity, race, gender, religion, marital status, parental influence,

² "Consistent" here is defined as "significant results that are reproducible and is constant," over both the LPM and the Logit models employed in the analyses of this thesis. It is also sometimes used synonymously with "stability" and "robust."

³ This is a reference to Lipset's influential *Political Man: The Social Bases of Politics* published in 1963.

peer influence, income, education, class, issues, and even culture and history in determining party affiliations or simply, the vote. Lipset's pioneering electoral studies, however, would not have been complete and possible without the efforts of earlier analysts in developing econometric methods that allowed for "the causal interpretation of statistical relationships" (Duncan, 1966); preeminent among them, Sewall Wright⁴ and his proposed method of path coefficients or path analysis.⁵ Otis Dudley Duncan (1966), in his work on the application of statistical methods to social studies notes that, "linear causal models are conveniently developed by the method of path coefficients," and are "... useful in making explicit the rationale of conventional regression analysis."

A second noteworthy development in the causal interpretation of statistical relationships is also the Simon-Blalock "method of partial correlation coefficients" (Knoke, 1972) developed by Hubert M. Blalock Jr.⁶ and Herbert A. Simon,⁷ as a step further in the development of this discipline. As Knoke (1972) points out, this model was later adopted by Arthur Goldberg⁸ in attempting to "determine the influence of social characteristics on voting." Even though other academics⁹ at the time critiqued this model as a "weak form" of path analysis, the path dependence formula set down by

⁴ An American geneticist known for his influential work on evolutionary theory and also on path analysis.

⁵ Path Analysis is an extension of the regression model, "used to test the fit of the correlation matrix against two or more causal models which were being compared by the researcher." For more information on this method, refer: <http://www2.chass.ncsu.edu/garson/pa765/path.htm>

⁶ See Blalock, H. M. (Jr.). (1964) *Causal Inferences in Non-Experimental Research*. Chapel Hill: University of North Carolina Press.

⁷ See Simon H. A. (1957). *Models of Man*. (Chapter ii) New York: John Wiley & Sons.

⁸ Knoke's observation is in reference to two articles published by Arthur Goldberg: "Discerning a Causal Pattern Among Data on Voting Behavior," and "Social Determinism and Rationality as Bases of Party Identification;" both published by the *American Political Science Review* in 1966 and 1969 respectively.

⁹ Knoke, in his essay, "A Causal Model for the Political Party Preferences of American Men," makes a reference to one such critique: notably, Raymond Boudon. (See Boudon, R. (1965, June) A Method of Linear Causal Analysis: Dependence Analysis. *American Sociological Review*. XXX, 365-74.)

Wright, and Blalock & Simon continue to influence and provide a fundamental basis for later methods.

The empirical framework constructed in this thesis draws upon some of the features of a linear causal model that are highlighted above in order to interpret the results of the regressions conducted here. This is especially the case in the first set of linear probability model regressions that seek to test the influence of the adult population's income and education variables (controlled for various socio-economic and demographic factors) on their identification with either the Republican Party or not; and, with the Democratic party or not. This study does go one step further though; in that it also incorporates a non-linear prediction method or, a binary logit regression to predict the probability of a certain event occurring (i.e. identifying as a Republican or not; and as a Democrat or not) based on a number of categorical independent variables.

It is important to note that the study of the causal relationships of social characteristics to the distribution of party preferences of U.S citizens in the past years have relied not only on defining specific paths and models to study the causal relationship of dependent and independent variables; as well as amalgamating a number of identified variables; but also, on the nature of the attachment of people to a particular party.

The following paragraphs will therefore, present a literature review of the growing use of the social variables of income and education in determining party identification. First, however, we should review the works that shed light on the meaning, importance, and measurement properties of party identification itself.

Herbert F. Weisberg's (1980) work characterizes the variety of literature on this concept by stating that that, "Over the years, the party identification concept has acquired many different usages. Some treatments have stressed its affective components, others its cognitive aspects, and still others, its rational basis, and so on" (p.34). Despite the fact that we base our conceptual definition on Weisberg's development of the concept of party identification as a "multidimensional conceptualization," it is important to caution that the usage of the concept in this paper in no way, lives up to the ideal that he had developed. In contrast, for obvious shortcomings, the concept of party identification in this paper suffers from most of the drawbacks that Weisberg lists in his article. These are that:

... it assumes that citizens can identify with only a single party, rather than examining more fully their attitudes towards both parties; it assumes that political independence is just the opposite of partisanship; it assumes the importance of parties, rather than the person's identification with the party system" (p.35); and that "... Republican and Democratic identification are opposites of one another; and, that opposition to political parties is equivalent to independence (p.36).

It is hoped that listing the limitations of the concept of party identification in this paper would state clearly its objectives (and not seem to go beyond what it attempts to explain), but also appeal to readers that all avenues of interpretation of this important notion have been considered. The concept does however retain its validity for the purposes of this thesis regardless of falling short of Weisberg's ideal. As Katz (1979) notes, "At a minimum, considering intensity of partisanship as independent from direction of choice allows for reasonable explanations of patterns of partisan conversion in Britain and the United States" (p.161). The coding of the 'political identification'

variable used in our dataset ranges from “Strongly Republican” to “Strongly Democratic,” therefore grouping the intensity of partisanship and allowing for a reasonable explanation of party choice. A further quality of the concept in this thesis is also that it implies a “non-predispositional” view of party identification, i.e., instead of seeing “partisanship as primarily inherited or virtually immutable,” (Haynes & Jacobs, 1994); it is seen to be “situational,” accounting for an individual’s current situation such as income and educational level.

The relationship between education and political party identification is, as Helliwell and Putnam (1999) claim, “the most important predictor of political and social engagement.” Their study finds that there “is no systematic evidence that increases in average education has any negative effects on (political) participation, let alone of the size required to offset the large positive effects of own-education.” It is important to distinguish here nevertheless, that these were claims that education determines the general levels of political and social participation. And, we have already hypothesized in the introductory paragraphs of this thesis that, over the last few decades, higher-educated groups of people were more likely to make more well-formulated and well-informed decisions; much more likely to have direct contact with public officials; more likely to contribute to public office campaigns; and overall, more likely to turn out to vote i.e., participate in the social act of elections, than people with relatively lower levels of education.

Thomas Dee (2003) in his studies to justify government intervention in the market of education corroborates Helliwell’s and Putnam’s conclusions. Dee finds that

“educational attainment has large and statistically significant effects on subsequent voter participation” (p.1697). Campbell (2007) also adds the assertion that, “education has a strong and consistently positive relationship to virtually every dimension of Democratic citizenship.” Yet, the question remains: how then do the political preferences of ‘highly-educated’ individuals differ from those individuals who fall in the “not” or “lower-educated” groups?¹⁰

Weiner’s & Eckland’s (1979) examination of the relationship between education and political party preference for non-Southern males and females sheds light directly on the correlation between educational attainment and being either a Republican, Democrat, or otherwise. Using a national sample of high-school students, followed up in 1970 at about the age of 30, Weiner and Eckland find a positive relation between educational attainment and a person’s identification as a Republican. However, they point out that this correlation is negated for men and women when controlled for “inherited partisan loyalties, class origins, and socio-economic attainment” (p.911). They conclude therefore, that “being a Republican does not reflect the direct effects of higher education but can be accounted for by two social processes unrelated to whatever direct impact college has on political values” (p.911). The first of these is:

... the selective recruitment into higher education of persons from middle and upper-middle class Republican backgrounds, coupled with the tendency for party preferences to be acquired early in life from parents ... and a second set is that after the completion of formal schooling people tend to adjust partisan loyalties to match those of the

¹⁰ For more on the subject of educational determinant of political participation, see also: David E. Campbell’s “The Theory of Educational Relativity: Reconsidering Education’s Relationship to Democratic Citizenship” at http://www.allacademic.com/meta/p211888_index.html

dominant status groups to which they belong or in which membership depends on educational attainment. (p.912)

The findings of this study are supported by similar studies conducted by Greeley and Spaeth (1970) who also show that, in the years after graduation, 1961 college graduates “moved away from Democratic political affiliation towards “independence,” while the net loss among Republicans was quite small.” They observe that:

College is presumed to have a “liberalizing” effect on its graduates, although it is reasonable clear that there are many different and not necessarily correlated dimensions to liberalism. On the other hand, college graduates are also more likely to be Republicans, and hence to be affiliated with a more conservative political party. (p.106)

These studies imply that attaining a higher education indicates that an individual is more likely to identify as a Republican. Nevertheless, as Greely & Spaeth (1970) also observe, education endows a “liberalizing tendency” on individuals which makes them more likely to describe themselves as “liberals,” as opposed to Democrats or even Republicans as they become more informed. Whether this theory holds true within the framework of the dataset used in this thesis remains to be seen.

Responding to Axelrod’s (1972) questions, “Where do the Democrats get their votes from? Where do the Republicans get their votes from?” this thesis attempts to show if the answers lie in individuals’ economic characteristics, particularly their household incomes. Clem Brooks and David Brady say yes. Their 1999 study of the effects of income on voting behavior and outcomes of presidential elections in the U.S since 1952 finds that, “income had a significant and generally stable impact on vote choice; it also had a very far-reaching impact on the outcomes of elections” (p.1361).

They argue that, after 1979, the realization of the significant impact of “economic sources on both vote choice and change in outcome of elections”¹¹ led to more focus from political analysts on factors such as income.

To further address Axelrod’s query, we also look to Brooks’ and Brady’s (1999) studies as well as David Segal’s and David Knoke’s (1970) analysis of the bases of political party choice in the United States. As stated above, Brooks and Brady find that growth in income “always benefitted Republican presidential candidates because growth in income leads voters to prefer a smaller welfare state and a smaller domestic role for the federal government” (p.1361). Similarly, Segal and Knoke find that, “high income people prefer the Republican Party” (p.257). The common perception then, that higher-income groups are more likely to vote Republican seems to hold true. On the other hand, Knoke (1972) points out that Segal’s (1970) findings were not chiefly concerned with income; rather, in explaining political cleavages. In fact, he places greater emphasis on “ the importance of race, religion, occupation, education, region of residence, and class identification, while variables such as income, property ownership and employment status carried little, if any weight” (p.679). Nevertheless, given that much has changed since Segal’s studies in the late 1960s to 1970s, to Brooks and Brady research in 1999, this thesis assumes that it is useful to explore the questions of whether income is a significant indicator of political identification and whether income is a more powerful determinant of party identification than education.

¹¹ Brooks and Brady refer to a number of studies that highlight the growing interest in the relationship of income to vote choice and outcomes of elections. Some are cited in this essay, while others could not be accessed through Georgetown University’s Lauinger Library, such as: David Weakliem and Anthony Heath’s (1994) Rational Choice and Class Voting. *Rationality and Society*, 6, 327–350.

Given the range of factors in addition to education and income that may influence party identification, and the need to test the significance of our key variables in the presence of other factors, it is important to consider the literature addressing some of these significant factors also. The division of political domains based on gender commands considerable interest. The historical context of women's emancipation coupled with the increasing tendency for women to work, earn higher incomes, and in all, to stand up and be counted, has meant that they have become a political force to contend with. Kaufman & Petrocik (1999) and Manza & Brooks (1998) have examined the role of gender in modern political extensively. In a similar vein, the growing importance of minorities in the income and social class brackets has also meant that ethnicities other than Whites also figure more prominently in party politics. Daren Shaw (1997) shows racial polarization in U.S. states with data gleaned from the 1992 presidential elections. David Weakliem (1997) and Giles & Hertz (1994) study of the role of race in American politics is also noteworthy.

A third significant variable in determining party identification in the United States is religion. Knoke's (1974) research of the American electorate in the 1960s, finds that "people's religion remains a potent source of political cleavage."¹² Layman & Carmine's (1997) similarly argue that "culture" and "values," which are derived from people's religious background, are significant influences on the political behavior of American voters.

¹² Geoffrey Layman's (2001) *The Great Divide: Religious and Cultural Conflict in American Party Politics*. New York: Columbia University Press; brings together the two strands of research of electoral behavior in the United States by studying party system change and the role of religion in party politics.

Finally, region, especially the South versus the non-South division in political alliances in the United States is also a significant factor in exploring American voting patterns. On this issue, we defer to the studies carried out by Nadeau et al. (2004) that examine the significant U.S. North-South differences in political identification over the past 50 years, and Stonecash's & Brewer's (2001) study of the decline in Democratic support among Southern Whites in the South.

These factors however, do not encompass the range of variables associated with studies of electoral patterns. A notable exclusion is the transmission of political values from parent to child which is central to the studies of Lane (1959) and Jennings & Niemi (1968). Yet other factors that serve as significant explanatory variables for people's political choices are the rural-urban division of party bases in the United States and, the question of whether an individual is a blue-collar or a white collar worker. They are excluded from this thesis given the lack of data on these factors in our dataset.

III. THEORETICAL FRAMEWORK

To test if people's identification as either Democrats or Republicans is significantly influenced by their household income and education; and, to compare their robustness, a simple causal model with two separate regression methods are estimated in this paper. It is important to emphasize that: a) the application of statistical methods in this thesis is limited by the dataset; b) the independent variables are a mix of economic, social and demographic factors which are generally used as control variables in similar studies; and, c) the regression methods are based on the nature of the dependent variable, which is nominal and binary (0, 1). A simple schematic

representation of the ordering of variables based on a simple classification of non-inherent and inherent characteristics of individuals is shown in Figure 1 below to better illustrate the causal flow proposed in the hypothesis of this thesis.

FIGURE 1. SCHEMATIC REPRESENTATION OF VARIABLES IN MODEL OF PEOPLE’S INCOME AND EDUCATION EFFECT ON PARTY IDENTIFICATION¹³

<u>Background Variables</u>	<u>Respondent’s Variables</u>	<u>Primary Variables</u>	
Main Religion	Age	Income	Party Identification
Region of Residence	Gender	Education	
	Race		
	Marital Status		

In procedural terms, both regression estimations adhere to some recursive standards as well: a) the set of independent variables used in all models of LPM and Logit are similar; b) there are four models for each regression controlling for social and demographic factors at each step; and, c) given that we are predicting a binary outcome, the LPM and the Logit regression models are employed to estimate two sets of results; one each for the probability of identifying as a Republican or not; and of identifying as a Democrat or not. The outcomes from each model are analyzed individually for Democrats and Republicans, and then compared for significance and consistency.

IV. DATA AND DESCRIPTIVE STATISTICS

The research utilizes the United States Citizenship, Involvement, Democracy (CID) survey data, which is “a major study of American civic engagement in comparative perspective” conducted in 2005 by the Georgetown University’s Center for

¹³ Figure 1. is based on David Knoke’s (1972) “Schematic Representation of Causal Assumptions in Model of Social and Political Effects on Respondent’s Party Identification,” (p.680) in A Causal Model for the Political Preferences of American Men, *American Sociological Review*, 39 (6), 679–689.

Democracy and Civil Society (CDACS) and the European Social Survey (ESS).¹⁴ Howard et al. (2005) notes that the study used a cluster sample design¹⁵ to “specifically represent the adult population residing in occupied residential housing units, and by definition excluded residents of institutions, group quarters, or those residing on military bases.” The two-month survey fielded across the continental United States yielded 1,001 completed interviews (N = 1001).

The primary independent variables derived from the USCID survey dataset are education (*EDUC2*) and income (*INCOME*) of individual respondents. The *EDUC2* variable, which is coded as the respondents’ highest grade completed is recoded as *educ_1* in the dataset of our analyses. This new variable groups all respondents i.e. those with no education; are educated till at least grade 8; as well as those who haven’t completed high school (finished grade 11 but not 12) as people who have had only low levels of education. This is the *notgradhs* variable in the extract dataset. Those who are high school graduates (finished grade 12) or have a General Equivalency Diploma (GED) are categorized under the variable *gradhs*. Respondents who have attended college partially (less than four years and have not attained a degree) or acquired vocational, technical or some business training are grouped as *techandcoll*. And, those with a four year college degree, graduate, and post-graduate or professional education are classified as *gradandpro*. A preliminary breakdown of the *educ_1* variable according to the frequency of people identifying as Democrats, Independents, or

¹⁴ See <http://www.uscidsurvey.org> for more information.

¹⁵ For more on survey sample designs, Howard et al. (2005) refers to Leslie Kish’s (1965) *Survey Sampling*. New York: John Wiley & Sons.

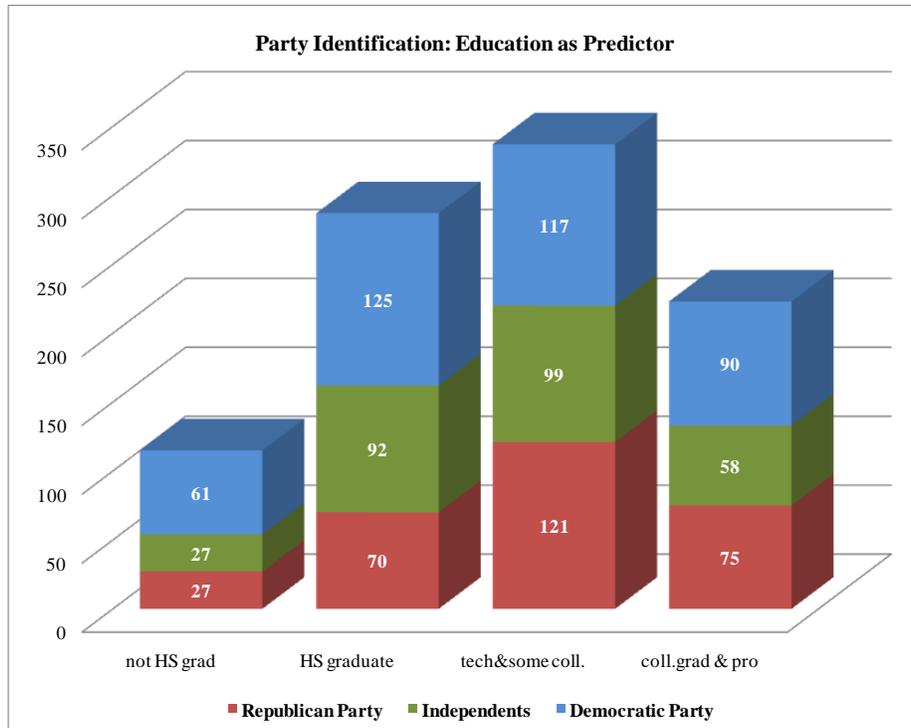
Republicans is presented in Table 2. Figure 1 is a graphical report of the figures presented in Table 2, which show that, people with lower educational attainment (high school graduates and below) frequently identify themselves with the Democratic Party; but at higher levels of educational, the gaps in support base is not as wide.

TABLE 1. PARTY IDENTIFICATION: EDUCATION AS THE PREDICTOR

partyid_1	educ_1				Total
	Not HS graduate	HS graduate	Tech.& some Coll.	Coll. Graduates & Professionals	
a Republican	27	70	121	75	293
b Independent	27	92	99	58	276
c Democrat	61	125	117	90	393
Total	115	287	337	223	962
d : r *	2.26:1	1.79:1	0.97:1	1.20:1	1.34:1

* Democrats to Republicans ratio within the respective education level, e.g. in the High School Graduates group, the frequency of Democrats to Republicans represented is 1.79 Democrats to 1 Republican.

FIGURE 2. PARTY IDENTIFICATION: EDUCATION AS PREDICTOR



The second primary indicator *INCOME* is also re-coded as *incomec_1*. It is important to state that the USCID’s variable *INCOME* is an adjusted or “corrected” income variable. Howard et al. (2005) notes that this is because the original variable *hinctnt* had a great deal of missing data. *INCOME* is therefore, based on “imputations of a combination of home ownership (*OWNHOME*); the interviewer’s estimate of the respondent’s social class (*RCLASS*); the respondent’s response to a question about “how do you feel about your household’s income nowadays (*HINCFEL*); and, a follow up question about whether the respondent’s income is “under \$50,000 or \$50,000 or more”” (Howard, 2005) to establish an individual’s total annual net household income.

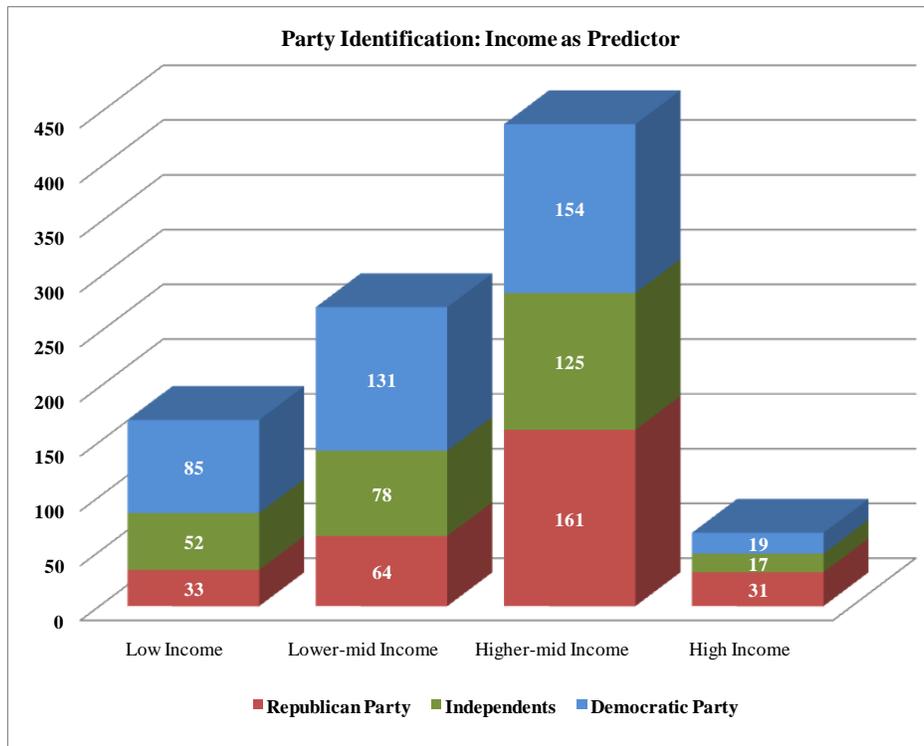
incomec_1 has four categories: low income (estimated at less than \$20,000); lower-middle income (\$20,000 or more, but less than \$40,000); higher-middle income (\$40,000 or more, but less than \$100,000); and, high income households (\$100,000 or more). To identify the income base upon which the analysis in this paper is constructed, Table 3 and Figure 2 show that at lower levels of income, there are significantly more people who identify with the Democratic Party. But, this gap is not significant at the higher–middle and high income groups of respondents.

TABLE 2. PARTY IDENTIFICATION: INCOME AS THE PREDICTOR

partyid_1	incomec_1 (household)				Total
	Low income	Lower-mid Income	Higher-mid Income	High Income	
a Republican	33	64	161	31	289
b Independent	52	78	125	17	272
c Democrat	85	131	154	19	389
Total	170	273	440	67	950
d : r *	2.58:1	2.05:1	0.96:1	0.61:1	1.35:1

* Democrats to Republicans ratio within the respective income range, e.g. in the Low Income group, the frequency of Democrats to Republicans represented is 2.58 Democrats to 1 Republican.

FIGURE 3. PARTY IDENTIFICATION: INCOME AS THE PREDICTOR



It is a concern of this study that the primary independent variables may be correlated. Higher income groups of people may also be more educated or, higher educated respondents would more likely earn higher incomes as well. Table 17 in the Appendices section conducts a pair-wise correlation test, and finds no correlation that is significant¹⁶ between all categories of the *incomec_1* and *educ_1* variables.

The dependent variable *partyid_1* classifies the six groups¹⁷ of party identification in the USCID survey data into three: *republican*, *democrat*, and *independent*. The categories of “leaning Democrat” and “leaning Republican” have

¹⁶ The pair-wise correlation of each pair of variables (dummies of *incomec_1* and *educ_1*) is followed by a corresponding p-value associated with the hypothesis test that the correlation is 0.

¹⁷ The USCID survey data codes the six groups of party identification as: *Strong Republican*, *Republican*, *Leaning Republican*, *Independent*, *Leaning Democrat*, *Democrat*, and *Strong Democrats*.

been categorized as *independent* to not only equalize the observations under each category, but also because “leaning” implies that their votes remain uncertain.

The other variables employed as controls in this analysis include the following:

1. *gender_1* is a recode of the *GENDER2* variable used in the USCID survey data, which codes male as a high value. *gender_1* codes *male* as 1 and *female* as 0.
2. *age_1* accounts for the adult voting population across the continental United States. The categories are: 18 – 30 year olds are young voters (*yngvtrs*); 31 – 45 are early middle-aged (*elymidvtrs*) voters; 46 – 60 are late middle-aged voters (*ltemidvtrs*); and 61 – 90 year olds are the old voters (*oldvtrs*).
3. *marital_1* is grouped as married; unmarried (respondents who are separated, divorced, or widowed); and single (respondents who have never married).
4. *rrace_1* is a revision of *RRACE* variable in the USCID dataset, which itself was a constructed variable given that people in the United States may identify with more than one race. The *RRACE* variable yields a single race, which is categorized in our analysis as *white*, *black*, and *hispothers* (Hispanic and others).
5. *mrelig_1* is the respondent’s identification with a main religion. In this analysis, we use *protestant*, *otherchristian* (other Christian religions), *catholic*, and *otherreligs* (other religions).
6. *state_1* groups the location of residence of respondent according to the south and non-south categorization used in similar studies. The USCID data did not release the location of residence of the respondents. However, based on the states identified, they were separated into *south* and non-South (*north*) states.

Table 3 below is an overview of the demographic base of the major political parties in the United States. The recoding of the *partyid_1* variable in our dataset has allocated a roughly equal base of respondents among the three political parties as shown here (293 as *republican*, 276 *independent*, and 393 as *democrat*).

TABLE 3. DEMOGRAPHIC BASE OF PEOPLE IDENTIFYING AS REPUBLICANS, INDEPENDENTS OR DEMOCRATS IN THE U.S (IN PERCENT)

#	Variables	Total		Republican		Independent		Democrat	
		<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%
1	male	423	43.97	127	43.34	133	48.19	163	41.48
2	female	539	56.03	166	56.66	143	51.81	230	58.52
3	not high school grad (<12)	115	11.95	27	9.22	27	9.78	61	15.52
4	high school grad. (12, but no college)	287	29.83	70	23.89	92	33.33	125	31.81
5	technical training and some college	337	35.03	121	41.30	99	35.87	117	29.77
6	college graduate and professionals	223	23.18	75	25.60	58	21.01	90	22.90
7	low income	170	17.89	33	11.42	52	19.12	85	21.85
8	low-middle income	273	28.74	64	22.15	78	28.68	131	33.68
9	high-middle income	440	46.32	161	55.71	125	45.96	154	39.59
10	high income	67	7.05	31	10.73	17	6.25	19	4.88
11	white	701	72.87	252	86.01	207	75.00	242	61.58
12	black	151	15.70	15	5.12	32	11.59	104	26.46
13	hispanic and others	110	11.43	26	8.87	37	13.41	47	11.96
14	young voters	214	23.19	63	21.95	74	28.03	77	20.70
15	early mid-age voters	289	31.31	96	33.45	82	31.06	111	29.84
16	late mid-age voters	257	27.84	83	28.92	69	26.14	105	28.23
17	old voters	163	17.66	45	15.68	39	14.77	79	21.24
18	married	492	51.74	177	60.62	124	45.59	191	49.35
19	unmarried (separated, divorced, widowed)	212	22.29	61	20.89	59	21.69	92	23.77
20	single	247	25.97	54	18.49	89	32.72	104	26.87
21	protestant	303	39.10	115	46.37	75	37.13	113	34.77
22	other christian	182	23.48	55	22.18	45	24.46	82	25.23
23	catholic	213	27.48	59	23.79	65	32.18	89	27.38
24	other religions	77	9.94	19	7.66	17	8.42	41	12.62
25	north	620	64.45	146	49.83	202	73.19	272	69.21
26	south	342	35.55	147	50.17	74	26.81	121	30.79

* Percent figures are in **bold font**

* Missing values are dropped from the sample

The inclusion of the descriptive outlays¹⁸ in the section above is an attempt to construct an effective message, which proposes that: while determining the consistency of effect of people's income and education on party choice is important, it is also considered a necessity to enrich the prescriptive conclusions of the statistical methods used in this thesis with some descriptive findings of the differences in support bases between the major political parties of the U.S.

V. EMPIRICAL SPECIFICATION

To reiterate, this research attempts to first determine the relative significance, and then the consistency of people's income and education levels on their identification with either the Republican Party or the Democratic Party. This is required to support the hypothesis that political choices based on the indicator of peoples' income, are relatively more significant and stable (See Footnote 2, Page 9 for definition of "consistent" used here) than people's identification with political parties based on their education levels. Since the dependent variable *partyid_1* is a qualitative event i.e. a binary variable; two bivariate regression models are used to test this theory. The first is the linear probability model (LPM),¹⁹ which predicts the probability of "success" (in our case, to be a Republican or not; and, to be a Democrat or not) for a number of independent variables. The following are the specifications of the linear probability model to predict an event of success which is that, a respondent identifies himself or herself as a Republican or not (Equation 1), or, as a Democrat or not (Equation 2):

¹⁸ See Appendices Section: Table 13, Table 14, Table 15, and Table 16, for the definitions of all variables as well as their descriptive statistics.

¹⁹ The Appendices Section also includes Table 20, which is the Linear Probability Model regression output for people's identification as *independents*. The results yield no significant coefficients.

$$P(\mathbf{republican}=1|\mathbf{x}) = \beta_0 + \beta_1 \text{gradhs} + \beta_2 \text{techandcoll} + \beta_3 \text{gradandpro} + \beta_4 \text{lowermidinc} + \beta_5 \text{hiermidinc} + \beta_6 \text{highinc} + \beta_7 \text{male} + \beta_8 \text{hispothers} + \beta_9 \text{black} + \beta_{10} \text{hispothrmn_d} + \beta_{10} \text{blackmen_d} + \beta_{11} \text{married} + \beta_{12} \text{unmarried} + \beta_{13} \text{yngvtrs} + \beta_{14} \text{ltemidvtrs} + \beta_{15} \text{oldvtrs} + \beta_{16} \text{otherchristian} + \beta_{17} \text{protestant} + \beta_{18} \text{otherreligs} + \beta_{19} \text{south} + \mu^{20}$$

$$P(\mathbf{democrat}=1|\mathbf{x}) = \beta_0 + \beta_1 \text{gradhs} + \beta_2 \text{techandcoll} + \beta_3 \text{gradandpro} + \beta_4 \text{lowermidinc} + \beta_5 \text{hiermidinc} + \beta_6 \text{highinc} + \beta_7 \text{male} + \beta_8 \text{hispothers} + \beta_9 \text{black} + \beta_{10} \text{hispothrmn_d} + \beta_{10} \text{blackmen_d} + \beta_{11} \text{married} + \beta_{12} \text{unmarried} + \beta_{13} \text{yngvtrs} + \beta_{14} \text{ltemidvtrs} + \beta_{15} \text{oldvtrs} + \beta_{16} \text{otherchristian} + \beta_{17} \text{protestant} + \beta_{18} \text{otherreligs} + \beta_{19} \text{south} + \mu^{21}$$

The use of the LPM in our analysis is simply because the coefficients can be interpreted like an Ordinary Least Squares (OLS) regression with a continuous dependent variable; except that here, the coefficients refer to the probability of a “successful event” (that of being a Republican or a Democrat) rather than to the levels of strength in party identification (which is an ordinal variable). This method is also included as a comparison for robustness in results across models, rather than rely on only a set of results from the Logit regression model. There are drawbacks to the LPM coefficients though. The most commonly acknowledged is that, unless restrictions are placed on the β , the estimated coefficients can imply probabilities outside the unit interval (0,1).²² This is why analysts have moved away from the LPM to Logit

²⁰ See Appendices Section: Table 15 and Table 16 for the definitions and descriptive statistics of all dependent and independent variables (including dummy variables) used in this analysis.

²¹ See Appendices Section for diagnostic test results. Table 18 is a pair-wise correlation test for all structural variables i.e. *educ_1*, *incomec_1*, etc ... It shows that none of the variables are correlated to any degree (to cause estimation problems in the models used here). These results are significant as illustrated by the corresponding p-values (in parentheses) associated with the hypothesis test that the correlation is 0. The second diagnostic test in Table 19 is the Variance Inflation Test (VIF test) for multicollinearity. The results for the independent variables indicate that the VIF values for all variables are less than 4 (4, used as a thumb rule but it often goes as high as 10) therefore multicollinearity is also not a problem here.

²² See Wooldridge, J. M. (2006). *Introductory Econometrics: A Modern Approach* (3rd Edition). United States of America: Thomson South-Western, p.252 for more on Linear Probability Models.

estimations for events such as voting, marital status, fertility, stance on immigration, and party choice to name a few. It is also for similar reasons that the logit model is adopted as a more robust predictor of people’s party inclinations in this thesis. In addition to ensuring that the estimated response probabilities are strictly between zero and one, logit also implies a diminishing magnitude of the partial effects of the independent variables as opposed to the LPM that assumes constant marginal effect²³ (Wooldridge, 2006). The logit model is specified as:

$$P(\mathbf{republican}=1|\mathbf{x}^{24}) = \mathbf{G}^{25}(\beta_0 + \beta_1 \mathit{gradhs} + \beta_2 \mathit{techandcoll} + \beta_3 \mathit{gradandpro} + \beta_4 \mathit{lowermidinc} + \beta_5 \mathit{hiermidinc} + \beta_6 \mathit{highinc} + \beta_7 \mathit{male} + \beta_8 \mathit{hispothers} + \beta_9 \mathit{black} + \beta_{10} \mathit{hispothrmn_d} + \beta_{10} \mathit{blackmen_d} + \beta_{11} \mathit{married} + \beta_{12} \mathit{unmarried} + \beta_{13} \mathit{yngvtrs} + \beta_{14} \mathit{ltemidvtrs} + \beta_{15} \mathit{oldvtrs} + \beta_{16} \mathit{otherchristian} + \beta_{17} \mathit{protestant} + \beta_{18} \mathit{otherreligs} + \beta_{19} \mathit{south})$$

$$P(\mathbf{democrat}=1|\mathbf{x}) = \mathbf{G}(\beta_0 + \beta_1 \mathit{gradhs} + \beta_2 \mathit{techandcoll} + \beta_3 \mathit{gradandpro} + \beta_4 \mathit{lowermidinc} + \beta_5 \mathit{hiermidinc} + \beta_6 \mathit{highinc} + \beta_7 \mathit{male} + \beta_8 \mathit{hispothers} + \beta_9 \mathit{black} + \beta_{10} \mathit{hispothrmn_d} + \beta_{10} \mathit{blackmen_d} + \beta_{11} \mathit{married} + \beta_{12} \mathit{unmarried} + \beta_{13} \mathit{yngvtrs} + \beta_{14} \mathit{ltemidvtrs} + \beta_{15} \mathit{oldvtrs} + \beta_{16} \mathit{otherchristian} + \beta_{17} \mathit{protestant} + \beta_{18} \mathit{otherreligs} + \beta_{19} \mathit{south})$$

In testing our hypothesis, each of the regression estimations (two per method) specified above are controlled over four models.²⁶ The first model is restricted to income and education for a *ceteris paribus*²⁷ interpretation of each variable’s effect on party identification. The base group for income is *lowincm* (low income households earning less than \$20,000); and, *notgradhs* for education (respondents who have not

²³ The second condition stated here has less relevance for our analysis, given that our independent variables are coded as categorical values i.e. the dummies are 0,1 binary variables as well.

²⁴ Where \mathbf{x} is shorthand for all of the explanatory variables (Wooldridge, 2006: p.252)

²⁵ Where \mathbf{G} is “a function taking on values strictly between zero and one: $0 < G(z) < 1$, for all real numbers z . This ensures that the estimated response probabilities are strictly between zero and one” (Wooldridge, 2006. p.583).

²⁶ See Tables 4, 5, 6 and 8 in the Findings and Analysis Section for more details on the four phases.

²⁷ Defined as “all other factors remaining the same.” <http://www.dictionary.com>

completed high school or less than grade 12). In the second model, we control for people's income and education by the demographic factors of gender, race and income. As discussed later, race has a statistically significant and consistent effect in determining people's party choice. Therefore, a further segregation of race by gender (males only) has also been included to study the differences. These effects are estimated from the dummy variables of *hispothrmn_d* (interacting *hispothers* and *male*) and *blackmen_d* (*black* and *male*) using White males as the base group.

In the third model, the marital status of respondents using *single* respondents as the base group, is the control variable. A separate estimation of this factor is deemed necessary because the common perception is that married voters vote conservatively. This is also because, one of the primary variables *incomec_1* is an imputation of all sources of household income. It was important to determine if the two variables has the same effect on the dependent variable. If it did, there is a multicollinearity problem. This is however, not the case, as illustrated by the VIF test in Table 19. Finally, in determining the influence of income and education on the party identification of respondents in our analyses, the full models employ the controls of the main religion that respondents identify with using *catholics* as the base group; and, of their region of residence in the United States, using *north* (non-south) as the reference group.²⁸

²⁸ An important concern regarding the number of variables in a regression analysis is the issue of omitting important variables or what is called "omitted variable bias." However, in our case it was also possible to control for too many variables i.e. to over-specify, or over-control (Wooldridge, 2006: p.212) for factors. A diagnostic test was therefore conducted to detect if there was any specification error in our regression analyses. The STATA command *linktest* was issued after each logit regression model. The idea behind *linktest* is that if the model is properly specified, there should not be any additional predictors that are statistically significant, except by chance. *Linktest* uses the predicted value *_hat* and predicted value-squared *_hatsq* as the predictors of whether to rebuild the model or not. The variable *_hat* should be a

VI. FINDINGS AND ANALYSIS

The results of the linear probability model analyses are presented in Table 4 and Table 5. The findings in Table 4 indicate that, among the 1,001 adult respondents surveyed in the continental United States, respondents who are in the categories of higher-middle and high-income households are more likely to identify with the Republican Party than those who are not high-income earners. This is highly statistically significant. More importantly, this positive relationship is consistent across all models regardless of the respondent's background variables like the region of residence and main religion, and also of people's demographic characteristics such as gender, race, and age. From the coefficient in the full model, it can be interpreted that – other things constant – it is statistically significant that a respondent whose household's total annual net income is \$100,000 or more (*highincm*) has a 0.224 higher chance of identifying as a Republican than a person with a total household annual net income of less than \$20,000 (the base group). This can also be stated as: the probability of identifying as a Republican is 22.4 percentage points higher for high-income respondents than for low-income respondents. The assumption holds true for people with higher-middle income (*hiermidinc*) as well, but the effect grows smaller and even insignificant in the full model when all independent variables are controlled for. These

statistically significant predictor, since it is the predicted value from the model. Our logit regressions finds a significant *_hat* showing that all logit models were correctly specified. Also, *_hatsq* did not have much predictive power or was not significant at any level, which again meant that the model was correctly specified. If *_hatsq* was significant, then the *linktest* would be significant, meaning that either we have omitted relevant variable(s) or that our link function was not correctly specified; which is not the case here. Source: <http://www.ats.ucla.edu/stat/Stata/webbooks/logistic/chapter3/statalog3.htm>

findings are upheld in Table 6, which, converse to the results in Table 5, also finds a statistically significant, but negative relationship between *highincm* and *democrat*.

TABLE 4. LINEAR PROBABILITY MODEL REGRESSION WITH ROBUST STANDARD ERRORS ON THE EFFECTS OF PEOPLE’S INCOME AND EDUCATION ON THEIR IDENTIFICATION AS REPUBLICANS IN THE U.S

Variables	(1)		(2)		(3)		(4)	
	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
<i>republican</i>								
_ cons	0.187***	0.041	0.287***	0.054	0.198***	0.065	0.100	0.078
techandcoll	0.062	0.049	0.059	0.051	0.066	0.052	0.103*	0.057
gradhs	-0.029	0.048	-0.035	0.048	-0.028	0.048	0.012	0.056
gradandpro	0.015	0.055	0.001	0.055	0.009	0.056	0.060	0.062
lowermidinc	0.033	0.042	0.025	0.044	0.020	0.045	-0.002	0.049
hiermidinc	0.158***	0.042	0.130***	0.043	0.116***	0.044	0.069	0.048
highincm	0.248***	0.072	0.209***	0.073	0.194***	0.074	0.224***	0.081
male			-0.002	0.038	0.009	0.038	0.023	0.042
hispothers			-0.005	0.071	0.008	0.072	0.025	0.079
black			-0.232***	0.042	-0.209***	0.042	-0.270***	0.046
hispothrmn_d			-0.169*	0.092	-0.177*	0.093	-0.173*	0.105
blackmen_d			-0.006	0.066	-0.008	0.068	-0.027	0.068
yngvtrs			-0.031	0.041	0.019	0.045	0.039	0.049
ltemidvtrs			-0.026	0.039	-0.035	0.039	-0.012	0.044
oldvtrs			-0.060	0.045	-0.078*	0.047	-0.048	0.050
married					0.106***	0.040	0.059	0.046
unmarried					0.108**	0.049	0.072	0.055
otherchristian							0.095*	0.049
protestant							0.093**	0.046
otherreligs							0.033	0.058
south							0.146***	0.037
N	950		914		906		740	
R ²	0.04		0.08		0.09		0.14	

* Statistically Significant at the 10% Level
** Statistically Significant at the 5% Level
*** Statistically Significant at the 1% Level

TABLE 5. LINEAR PROBABILITY MODEL REGRESSION WITH ROBUST STANDARD ERRORS ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR IDENTIFICATION AS DEMOCRATS IN THE U.S

Variables	(1)		(2)		(3)		(4)	
	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
<i>democrat</i>								
_ cons	0.559***	0.052	0.459***	0.048	0.461***	0.087	0.527***	0.076
techandcoll	-0.129**	0.055	-0.128**	0.055	-0.123**	0.055	-0.151**	0.060
gradhs	-0.061	0.056	-0.072	0.039	-0.069	0.039	-0.074	0.063
gradandpro	-0.052	0.061	-0.039	0.042	-0.046*	0.043	-0.068	0.067
lowermidinc	-0.002	0.049	0.004	0.050	-0.003	0.050	0.002	0.056
hiermidinc	-0.128***	0.047	-0.083*	0.039	-0.089*	0.039	-0.054*	0.056
highincm	-0.195***	0.070	-0.136**	0.065	-0.143**	0.066	-0.129*	0.083
male			-0.045	0.037	-0.046	0.037	-0.044	0.041
hispothers			0.055	0.075	0.066	0.076	0.009	0.083
black			0.336***	0.055	0.335***	0.056	0.355***	0.061
hispothrmn_d			0.097	0.106	0.088	0.106	0.098	0.124
blackmen_d			-0.009	0.089	-0.000	0.090	-0.017	0.099
yngvtrs			-0.028	0.044	-0.029	0.051	-0.019	0.058
ltemidvtrs			0.041	0.040	0.039	0.041	0.049	0.046
oldvtrs			0.112**	0.048	0.122**	0.049	0.102*	0.053
married					0.012	0.047	0.018	0.055
unmarried					-0.024	0.056	-0.012	0.063
otherchristian							-0.059	0.054
protestant							-0.092*	0.048
otherreligs							0.023	0.066
south							-0.051	0.038
N	950		914		906		740	
R ²	0.03		0.10		0.10		0.11	

* Statistically Significant at the 10% Level
 ** Statistically Significant at the 5% Level
 * ** Statistically Significant at the 1% Level

The coefficients of *hiermidinc* and *highincm* demonstrate that individuals with high incomes are less likely to identify with the Democratic Party than people with low income households. This is consistent across all four models, although we see

diminishing effects as control variables are added in, and the effects is significant at the 10% level only in the final model. It is important to note here however, that the analyses in Tables 4 and 5 do not establish a relationship between people in low-income households (*lowincm*) and their identification with either political party.²⁹

The results of the binary Logit regression analysis affirm the findings in the LPM analyses. These are presented in Tables 6 and 8. In all four models of Table 6, we test for the significance of people's identification as Republicans based on their income and education; and, it is shown that *hiermidinc* and *highincm* had a highly statistically significant effect on the probability of the dependent variable *republican* = 1. Specifically, the logit coefficients in the full model states that the log-odds of identifying as a Republican (vs. not a Republican) if the respondent are from a high-income household, increase by 1.157. This tells us little in terms of the probability of groups to identify themselves with either political parties. Therefore, we exponentiate the coefficients and interpret them as odd-ratios³⁰. From the odds-ratio values of the full model in Table 21 (in the Appendices Section), it can be said that: for respondents with over \$100,000 i.e. *highincm*, the odds of them identifying as a *republican* increases by a factor of 3.179. Even in odds-ratios, the findings are awkward to understand. Therefore, predicted probabilities³¹ are used to facilitate the interpretations. .

²⁹ To see if this was valid, all linear probability models and the logit regression models were re-estimated with the *lowincm* variable using either the *highincm* and *hiermidinc* variables as base groups. It yielded no statistically significant relationship between *lowincm* and people's identification with either parties.

³⁰ See Table 21 in the Appendices Section for the odds-ratios of the logit regression for people's identification as Republicans based on their income and education. The odds-ratios are obtained in STATA by issuing the command *logit, or*.

³¹ The *prtab* command in STATA can be used with either categorical or continuous variables and shows the predicted probability or the outcome being 1 (in our case a "success" of identifying as a *republican* or

**TABLE 6. BINARY LOGIT REGRESSION WITH ROBUST STANDARD ERRORS
ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR
IDENTIFICATION AS REPUBLICANS IN THE U.S**

Variables	(1)		(2)		(3)		(4)	
	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
<i>republican</i>								
_ cons	-1.460***	0.247	-0.997***	0.295	-1.500***	0.298	-2.024***	0.451
techandcoll	0.296	0.264	0.302	0.273	0.322	0.278	0.545*	0.313
gradhs	-0.151	0.270	-0.206	0.282	-0.172	0.193	0.041	0.326
gradandpro	0.079	0.284	0.009	0.292	0.031	0.196	0.308	0.335
lowermidinc	0.202	0.251	0.178	0.272	0.160	0.276	0.049	0.310
hiermidinc	0.811***	0.235	0.705***	0.248	0.649**	0.189	0.445	0.280
highincm	1.177***	0.331	1.023***	0.347	0.969***	0.307	1.157***	0.402
male			-0.012	0.168	0.047	0.169	0.100	0.191
hispothers			-0.011	0.326	0.057	0.335	0.137	0.378
black			-1.582***	0.395	-1.470***	0.395	-2.056***	0.511
hispothrmn_d			-0.943*	0.517	-0.999*	0.520	-1.000	0.621
blackmen_d			0.070	0.605	0.095	0.609	0.073	0.753
yngvtrs			-0.150	0.211	0.128	0.236	0.231	0.266
ltemidvtrs			-0.136	0.194	-0.181	0.197	-0.094	0.227
oldvtrs			-0.303	0.231	-0.387*	0.234	-0.248	0.256
married					0.569**	0.228	0.324	0.266
unmarried					0.619**	0.276	0.419	0.319
otherchristian							0.458*	0.260
protestant							0.475**	0.229
otherreligs							0.124	0.329
south							0.722***	0.181
N	950		914		906		740	
Log Likelihood	-564.45		-524.65		-518.66		-408.49	
Pseudo R ²	0.03		0.07		0.08		0.12	
% Corr. Predicted	0.69		0.69		0.69		0.71	

* Statistically Significant at the 10% Level

** Statistically Significant at the 5% Level

*** Statistically Significant at the 1% Level

not; and of identifying as a *Democrat* or not) for all levels of the specified predictor. For more on predicted probabilities, see: <http://www.ats.ucla.edu/stat/stata/dae/logit.htm>

The results (for *highincm* because its results are highly statistically significant) in Table 9 indicate that: the predicted probability of identifying as a *republican* 0.54, if the respondent's annual net income is more than \$100,000, holding other predictors constant at their mean. This holds true for the higher-middle income respondents as well, but the effects again become insignificant in the full model.

TABLE 7. PREDICTED PROBABILITIES OF POSITIVE OUTCOMES FOR REPUBLICAN

Variables	Prediction
1 <i>hiermidinc</i>	
0	0.2419
1	0.3323
2 <i>highincm</i>	
0	0.2662
1	0.5356
3 <i>black</i>	
0	0.3569
1	0.0663
4 <i>south</i>	
0	0.2316
1	0.3830

* All other independent variables (xs) are held constant at their mean value.
 ** Only predicted probabilities for independent variables that are statistically significant in the Logit regression model for Republican are presented here

As in the linear probability model, the logit regression for *democrat* presented in Table 8 below also finds a statistically significant (at the 10% significance level) but negative relationship between *hiermidinc* and *highincm* and respondents' identification with the Democratic Party in the first three models.³² This relationship however does not hold in the full model once all independent variables are controlled for. The results for the full model in Table 9 show that: the predicted probabilities of a successful

³² Table 18 in the Appendices Section presents the odds-ratio calculations for the logit regression of people's identification as Democrats based on their income and education levels.

outcome for *democrat* are not only insignificant for *hiermidinc* and *highincm* respondents, but also lower than those who do not identify with the party.

**TABLE 8. BINARY LOGIT REGRESSION WITH ROBUST STANDARD ERRORS
ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR
IDENTIFICATION AS DEMOCRATS IN THE U.S**

Variables	(1)		(2)		(3)		(4)	
	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
<i>democrat</i>								
_ cons	0.242	0.209	-0.155	0.182	-0.147	0.327	0.158	0.405
techandcoll	0.540**	0.228	-0.576**	0.238	-0.553**	0.243	-0.693**	0.271
gradhs	-0.249	0.227	-0.319	0.174	-0.306	0.242	-0.336	0.276
gradandpro	-0.201	0.249	-0.164	0.190	-0.193	0.263	-0.297	0.292
lowermidinc	-0.006	0.200	0.018	0.213	-0.018	0.221	0.011	0.252
hiermidinc	-0.535***	0.193	-0.369*	0.166	-0.399*	0.218	-0.242	0.252
highincm	-0.846***	0.323	-0.629*	0.312	-0.664*	0.354	-0.596	0.397
male			-0.206	0.165	-0.214	0.170	-0.206	0.190
hispothers			0.251	0.297	0.295	0.321	0.045	0.356
black			1.461***	0.265	1.454***	0.268	1.575***	0.303
hispothrmn_d			0.419	0.444	0.386	0.446	0.421	0.521
blackmen_d			-0.053	0.415	-0.008	0.420	-0.097	0.471
yngvtrs			-0.132	0.206	-0.135	0.239	-0.099	0.270
ltemidvtrs			0.189	0.186	0.181	0.187	0.231	0.209
oldvtrs			0.502**	0.212	0.548**	0.217	0.474**	0.238
married					0.058	0.219	0.075	0.253
unmarried					-0.111	0.258	-0.066	0.295
otherchristian							-0.272	0.241
protestant							-0.421*	0.216
otherreligs							0.119	0.293
south							-0.236	0.176
N	950		950		906		740	
Log Likelihood	-627.99		-571.79		-566.73		-459.68	
Pseudo R ²	0.02		0.07		0.07		0.08	
% Corr. Predicted	0.60		0.65		0.66		0.68	

* Statistically Significant at the 10% Level

** Statistically Significant at the 5% Level

*** Statistically Significant at the 1% Level

TABLE 9. PREDICTED PROBABILITIES OF POSITIVE OUTCOMES FOR DEMOCRAT

	Variables	Prediction
1	<i>hiermidinc</i>	
	0	0.4374
	1	0.3790
2	<i>highincm</i>	
	0	0.4196
	1	0.2850
3	<i>techandcoll</i>	
	0	0.4697
	1	0.3070
4	<i>black</i>	
	0	0.3479
	1	0.7205
5	<i>oldvtrs</i>	
	0	0.3866
	1	0.5032

* All other independent variables (xs) are held constant at their mean value.
** Only predicted probabilities for independent variables that are statistically significant in the Logit regression model for Democrat are presented here

In terms of the effect of people’s education on their identification with either the Democratic Party or the Republican Party,³³ the LPM model in Tables 5 finds that only respondents who have some vocational and technical training, and also attended some (but not finished) college (*techandcoll*) are less likely to identify with the Democratic party relative to respondents who had not graduated high school (*notgradhs*). Other than this, Tables 4 and 5 both find no relationship between *educ_1* dummy variables and the *republican* or *democrat* dependent variable that is significant at any level. These findings are also upheld in the binary logit regression models in Tables 6 and 8. Even the significant (at the 5% level) negative relation between *techandcoll* and *democrat*

³³ The Appendices Section also includes Table 16 and Table 17 that present the findings of LPM and Logit estimations of people’s income and education on their identification as Independents.

found in both the LPM and Logit models has a very low predictive probability that these respondents identify with the Democratic party as shown in Table 9 above. These findings run contrary to our earlier assumptions based on both Weiner's & Eckland's (1979) study of non-South males and females in 1970, which finds a statistically significant and positive correlation between educational attainment and a person's identification as a Republican; and, on Greeley's and Spaeth's (1970) study which finds that, in the years since graduation, the 1961 college alumni, "moved away from Democratic political affiliation towards "independence." The LPM and Logit regression estimations (Table 20 and Table 23 in the Appendices Section) for people's identification as Independents in our analyses show no statistically significant relationship that is consistent between the independent dummy variables for *incomec_1* and *educ_1* and the dependent *independent* variable at any levels of significance.

The impact of the race and region-of-residence dummies are noteworthy. In particular, in both the LPM and Logit estimations, it is found that *black* respondents are very highly likely to identify as *democrat* and conversely and also, very highly unlikely to identify as *republican* relative to their *white* counterparts (the base group). These results are considerable at the highest levels of significance (p -values <0.000) and is consistent across all models. The predicted probabilities in Tables 7 and 9 also illustrate this inverse probability trend, with a high predictive probability (0.72) that blacks identify themselves as Democrats; whereas the predictive probability that they will identify as Republicans is very low (0.06) regardless of the South – non-South incongruity. Whether this, as Brewer & Stonecash (2001) claim, is because the

relatively more affluent white population are “increasingly supportive of the Republican Party because they find its positions more compatible with their interests,” (p.131) is yet another interesting area for examination. The *south* variable is also significant in predicting the probability that a respondent would identify as a Republican (versus not a Republican), but not as a Democrat. The LPM (Table 4) and Logit estimations (Table 6) for *republican* finds a statistically significant and positive relationship between *south* and *republican*. Another noteworthy observation is that a statistically significant, but negative relationship also exists between respondents who have vocational and technical training (*techandcoll*) and the dependent variable *democrat*. Its predictive probability however, is not considerable, as shown in Table 9.

Overall, the assessment of the outcomes from our estimation methods suggest that there is little, if any, effect of respondents’ educational attainment on their inclination towards either the Democratic or the Republican Parties. The “liberalizing” effect, which Greely & Spaeth (1970) conclude is the result of college experiences on individuals was also tested to see if then, there is a significant number of respondents identifying as Independents rather than as Democrats or Republicans. The supplementary analyses³⁴ in this paper find no significant effects either.

The insignificance of the education variables however, does not confirm the opposite; which is the hypothesis of this paper that, political choices based on an indicator of people’s income is relatively more significant and consistent than those based on their education levels. In effect, this is only partially true. As highlighted

³⁴ In both the LPM and Logit regressions conducted in Table 20 and Table 23 in the Appendices Section, there are no coefficients that are significant at any levels of significance.

earlier,³⁵ at low (*lowincm*) and even lower-middle (*lowermidinc*) levels of household's total annual net income, respondents identified with neither the Republican Party nor the Democratic Party.³⁶ This finding is consistent across all models. What is significant and consistent is that respondents in high income households (and higher-middle income households to a degree) identify themselves as Republicans. The policy implications of such a finding will be discussed in some detail below.

VII. LIMITATIONS

There are some notable limitations to this study and its subsequent results. The first is that the United States "Citizen, Involvement and Democracy" (CID) survey data used in this analyses represents only one point, since data was collected for just the year 2005. It is based on a similar "European Social Survey (ESS)"³⁷ conducted biannually since 2002" (Howard et al. 2005). This concern is worth mentioning since similar studies analyzing political affiliations in the United States account for trends in people's party identifications over more than a year to even four to five decades such as Brooks & Brady's (1999) analysis of the effects of income on voting behavior and the outcome of presidential elections in the U.S. from 1952 to 1996. In particular, studies of the relationship between education and party choice such as Greely's & Spaeth's (1970) examination of the effect of college on individuals, and Dee's (2004) assessment of the effects of educational attainment on party choice uses major longitudinal data with

³⁵ See footnote 29 on Page 35.

³⁶ This observation also holds true for people's identification with the Independent Party as shown by the results from the LPM and binary Logit regressions in Table 20 and Table 23 of the Appendices Section.

³⁷ The European Social Survey (ESS) is a major European survey of 22 European countries on civic engagement conducted biannually since 2002. The USCIS survey is based on the ESS, although the US survey includes new and innovative questions on American's civic engagement and behavior.

cohorts of students followed up in subsequent years at regular intervals.³⁸ Nevertheless, the use of a single data point as in this thesis, has also been employed in important studies such as Segal's & Knoke's (1970) "analysis of the basis of political party choice" based on survey data collected in 1965 by the Survey Research Center (SRC) of the University of Michigan; and in Knoke's 1972 causal analysis of the political party identification of American men which employs survey data for the year 1968 from Michigan University's SRC. Even so, a larger sample size spanning a length of time would have been desirable.

Second, it is observed that in the full models, the number of observations drop to only 740 from an initial total of 1,001. The loss in observations is no cause for concern as we initially attribute the loss to missing and irrelevant variables. However, as we also see in the descriptive statistics of Tables 1 and 2, this becomes an issue as the number of observations in each cell diminishes e.g. among high-income earners, only 19 identify as Democrats, 31 as Republicans; and, among respondents who did not graduate high school, only 27 identify as Republicans, and 61 as Democrats. The small sizes of samples in these important cells is a cause of concern for our analysis in terms of both the stability of the variance accounted for by these small sizes of indicator variables, but also because we do not know if the few variables included in the estimations accurately and fully account for the variance in the dependent variable.³⁹

³⁸ See Page 1701 of Thomas S. Dee's (2004). Are There Civic Returns to Education? *Journal of Public Economics*, 88, 1697–1720.

³⁹ This is perhaps indicative of the low R-squares, which is prevalent in all LPM and Logit estimations in this analysis.

Last, in terms of the logit regression coefficients, the awkwardness in interpreting logit coefficients and odds-ratios values of the effects of categorical independent variables on categorical dependent variables, has meant that the analyses in this paper only allows for an interpretation of results based on pre-structured categories i.e. *highincm*, *lowincm*, *notgradhs*, *gradandpro*, and so on. This, in turn, meant that, a meaningful interpretation such as, ‘an increase in educational attainment by one school year increases the probability that a respondent identifies as a Democrat by such a percentage,’ or that ‘the probability that a person who earns \$10,000 more annually votes Republican increases by certain percentage points,’ has not been possible. This is also because both income and education variables in the raw dataset were based on imputations and combinations of different variables to adjust for missing data. The partial effects of independent variables on each other and on the dependent variable have also been largely unaddressed in the interpretation of the coefficients as a result.

VIII. POLICY IMPLICATIONS AND CONCLUSION

The first implication that is evident in our analysis concerns a theoretical notion of “distributive” justice or rather, the idea that public policies have not been successful in leveling the conditions that influence political outcomes i.e., the distribution of wealth and power. This is particularly true in light of the “substantial increases in economic inequality in the United States” (Bartels, 2004). While economic inequality itself may not provoke people to identify with either political parties, Clem Brooks and David Brady point out that party choice is a result of complex interactions with clear evidence that household incomes significantly “shape evaluations of the normative

desirability of various policy options (pursued by the political parties), which in turn influence voting behavior” (Brooks & Brady, 1999). So, high-income household voters who are more likely “to prefer a smaller federal government and leaner welfare state,” and consequently, lower taxes and less redistributive policies, identify with the Republican Party. This is consistent with our findings, which shows a statistically significant and positive relationship between high-income individuals and their likelihood to identify as Republicans. Likewise, Krugman (2007) also notes that, “the fact that people with higher incomes are more likely to vote Republican has been consistently true since 1972.” This is substantiated by voting trends data from 1972 to 2004 as shown in Table 10.

TABLE 10. INCOME-BASED VOTING TRENDS IN THE U.S (1972 – 2004)

Share of '04 Vote			1972	1976	1980	1984	1988	1992	1996	2000	2004
8	Under \$ 15,000	Dem	--	--	--	--	--	58	59	57	63
		Rep	--	--	--	--	--	23	28	37	36
15	\$15,000 - \$29,999	Dem	--	--	--	--	--	45	53	54	57
		Rep	--	--	--	--	--	35	36	41	42
22	\$30,000 - \$49,999	Dem	--	--	--	--	--	41	48	49	50
		Rep	--	--	--	--	--	38	40	48	49
23	\$50,000 - \$74,999	Dem	--	--	--	--	--	40	47	46	43
		Rep	--	--	--	--	--	41	45	51	56
14	\$75,000 - \$99,999	Dem	--	--	--	--	--	--	44	45	45
		Rep	--	--	--	--	--	--	48	52	55
3	\$200,000 and over	Dem	--	--	--	--	--	--	--	--	35
		Rep	--	--	--	--	--	--	--	--	63
18	\$100,000 and over	Dem	--	--	--	--	32	--	38	43	41
		Rep	--	--	--	--	65	--	54	54	58
55	\$50,000 and over	Dem	--	--	26	30	37	39	44	45	43
		Rep	--	--	64	69	62	44	48	52	56

* Data from Krugman’s blog at The New York Times online: <http://krugman.blogs.nytimes.com/2007/10/22/income-and-voting/>

A breakdown of the United States exit polls by *CNN* in Table 11 further shows that these trends persisted even as recently as 2006.

TABLE 11. VOTE BY INCOME (2006 U.S EXIT POLLS)

	Total	Democrat	Republican
1	Under \$15,000 (7%)	67%	30%
2	\$15,000 – \$30,000 (12%)	61%	36%
3	\$30,000 – \$50,000 (21%)	56%	43%
4	\$50,000 – \$75,000 (22%)	50%	48%
5	\$75,000 – \$100,000 (16%)	52%	47%
6	\$100,000 – \$150,000 (13%)	47%	51%
7	\$150,000 – \$200,000 (5%)	47%	51%
8	\$200,000 or more (5%)	45%	53%

* 13,251 respondents

** 2006 CNN Exit Polls data⁴⁰

The theoretical background, voting trends data, and the analytical conclusion of this thesis suggests that income-based differences in voting choice thus, represent a policy-oriented form of economic voting. This is consistent with Brooks' & Brady's (1999) study. People identify with the political party whose policies they gauge are most favorable to their economic position. In our case high-income groups identify significantly with the Republican Party whose policies increasing favored the rich. As a consequence, Republican control of the federal decision making processes for over 28 of the last 40 years (in terms of presidential years) has resulted in rising income inequalities in the U.S as evidenced from rising Gini indices⁴¹ reported by both the *Current Population Reports* of the U.S Census Bureau, and the United Nations' *Human Development Report*.⁴²

⁴⁰ The Data for CNN's 2006 Exit Polls have been obtained from CNN's Election Center website at: <http://www.cnn.com/ELECTION/2006/pages/results/states/US/H/00/epolls.0.html>

⁴¹ "The Gini index summarizes the dispersion of income across the entire income population. It ranges from 0, which indicates perfect equality (where everyone receives an equal amount), to 1, which denotes perfect inequality (where all the income is received by only one recipient or a group of recipients)." DeNavas-Walt et al. (2002) at: <http://www.census.gov/prod/2003pubs/p60-221.pdf>

⁴² The report is available online at: http://hdr.undp.org/en/media/hdr_20072008_en_complete.pdf

These inequalities become even more pronounced when we consider the coefficients for our race variable *black*, which is not only statistically significant and positively correlated with a respondent’s identification as a Democrat; but also highly significant and negatively correlated with a respondent’s identification as a Republican.⁴³ Again, voting trends from the U.S exit polls in Table 12 indicates that, African-Americans (*black*) overwhelmingly support the Democratic Party. In terms of policy-orientation, it can only be inferred from these outcomes that such a trend is indicative of the group’s support for a party that is perceived as reinforcing policies to alleviate the income status of the group to which a majority of the group belong.

TABLE 12. VOTE BY RACE (2006 U.S EXIT POLLS)

	Total	Democrat	Republican
1	White (79%)	47%	51%
2	African–American (10%)	89%	10%
3	Latino (8%)	69%	30%
4	Asian (2%)	62%	37%
5	Other (2%)	55%	42%

* 13,251 respondents

** 2006 CNN Exit Polls data⁴⁴

Therefore, acknowledging the findings presented throughout this paper; and more importantly, in recognition of the fact that the hypothesis proposed in this paper holds partly true for the political inclinations of high-income respondents, it is necessary to state that there is a need to revisit economic policies (particularly of public political institutions) that favor particular groups of people over others. This is needed

⁴³ The independent variable *black* has a positive effect on a respondent’s identification as a *Democrat*; as well a negative effect on a respondent’s identification as a Republican, which is statistically significant and consistent at the 1% significance level across all models.

⁴⁴ The Data for CNN’s 2006 Exit Polls have been obtained from CNN’s Election Center website at: <http://www.cnn.com/ELECTION/2006/pages/results/states/US/H/00/epolls.0.html>

in order to alleviate a cycle of inequality, which is inherently unbecoming and detrimental to the ideals of democracy that the United States is seen to embody.

APPENDICES

TABLE 13. VARIABLE DESCRIPTIONS

#	Variables	Coding (Binary)	
partyid_1 Respondents party inclination			
a	<i>republican</i>	Republican Party	=1 if identify as Republican = 0 otherwise
b	<i>independent</i>	Independents	=1 if identify as Independent = 0 otherwise
c	<i>democrat</i>	Democratic Party	=1 if identify as Democrat = 0 otherwise
mreg_1 Respondents' identification with a main religion			
a	<i>protestant</i>	Protestants	=1 if identify as Protestant = 0 otherwise
b	<i>otherchristian</i>	Other Christians	=1 if identify as Other Christian = 0 otherwise
c	<i>catholic</i>	Catholics	=1 if identify as Catholic = 0 otherwise
d	<i>otherreligs</i>	Other Religions	=1 if identify as another religion = 0 otherwise
gender_1 Respondent's gender			
a	<i>female</i>	Females	=1 if respondent is female = 0 otherwise
b	<i>male</i>	Males	=1 if respondent is male = 0 otherwise
educ_1 Respondent's level of educational achievement			
a	<i>notgradhs</i>	Not HS graduate	=1 if NOT HS graduate (<12) = 0 otherwise
b	<i>gradhs</i>	HS graduate (12)	=1 if HS graduate (>12) = 0 otherwise
c	<i>techandcoll</i>	Tech. skills	=1 if tech. trainee & some coll. = 0 otherwise
d	<i>gradandpro</i>	Coll. grad & Prof.	=1 if coll. grad and professional = 0 otherwise
marital_1 Respondent's matrimonial status			
a	<i>married</i>	Married	=1 if respondent is married = 0 otherwise
b	<i>unmarried</i>	Separated/divorced	=1 if respondent is unmarried = 0 otherwise
c	<i>single</i>	Never married	=1 if respondent never married = 0 otherwise
incomec_1 Respondent's overall personal income			
a	<i>lowincm</i>	Low income	=1 if person's income < \$20,00 = 0 otherwise
b	<i>lowermidinc</i>	Lower-mid income	=1 if income: \$20,000 – <\$40,000 = 0 otherwise
c	<i>hiermidinc</i>	Higher-mid income	=1 if income: \$40,000 – <100,000 = 0 otherwise
d	<i>highincm</i>	High Income	=1 if person's income >\$100,000 = 0 otherwise
age_1 Respondent's (voters) age ranging from 18 – 90			
a	<i>yngvtrs</i>	Young voters	=1 if respondent 18 – 30 years old = 0 otherwise
b	<i>elymidvtrs</i>	Early-mid voters	=1 if respondent 31 – 45 years old = 0 otherwise
c	<i>ltemidvtrs</i>	Late-mid voters	=1 if respondent 46 – 60 years old = 0 otherwise
d	<i>oldvtrs</i>	Old voters	=1 if respondent 60 – 90 years old = 0 otherwise
rrace_1 Respondent's race			
a	<i>white</i>	White	=1 if respondent is white = 0 otherwise
b	<i>black</i>	Black	=1 if respondent is black = 0 otherwise
c	<i>hispothers</i>	Hispanic & Others	=1 if respondent is hispanic/others = 0 otherwise
state_1 Respondent's residence location (state-wise) in the U.S			
a	<i>south</i>	South (old) states	=1 if respondent's state is in south = 0 otherwise
b	<i>north</i>	North states	=1 if respondent's state is in north = 0 otherwise

TABLE 14. VARIABLE DESCRIPTIONS

#	Variables	Coding (Binary)	
educ_1 * gender_1			
a	<i>nohsmen_b</i>	Male, not a HS grad.	= 1 if he is not a HS graduate = 0 otherwise
b	<i>hghsmen_b</i>	Male, a HS grad.	= 1 if he is a HS graduate = 0 otherwise
c	<i>tecscollmen_b</i>	Male has Tech. skills	= 1 if he has some coll./skills = 0 otherwise
d	<i>collpromen_b</i>	Male, a coll. grad/Pro.	= 1 if he is coll.grad./pro. = 0 otherwise
e	<i>nohsfem_b</i>	Female, not a HS grad.	= 1 if she is not a HS grad. = 0 otherwise
f	<i>hghsfem_b</i>	Female, a HS grad.	= 1 if she is a HS graduate = 0 otherwise
g	<i>tecscollfem_b</i>	Female has Tech. skill	= 1 if she has coll./skills = 0 otherwise
h	<i>collprofem_b</i>	Female, a coll.grad/pro.	= 1 if she is a coll.grad./pro. = 0 otherwise
incomec_1 * gender_1			
a	<i>loincmen_c</i>	Low income Men	= 1 if he has High income = 0 otherwise
b	<i>lomidincmen_c</i>	Lower-mid inc. Men	= 1 if he has Lo-mid income = 0 otherwise
c	<i>midincmen_c</i>	Middle income Men	= 1 if he has Middle income = 0 otherwise
d	<i>himidincmen_c</i>	Higher-mid inc. Men	= 1 if he has Hi-mid income = 0 otherwise
e	<i>hghincmen_c</i>	High income Men	= 1 if he has High income = 0 otherwise
f	<i>loincfem_c</i>	Low income Female	= 1 if she has Lomid income = 0 otherwise
g	<i>lomidincfem_c</i>	Low-mid Inc. Female	= 1 if she has Hi-mid income = 0 otherwise
h	<i>midincfem_c</i>	Middle Income Female	= 1 if she has High income = 0 otherwise
i	<i>himidincfem_c</i>	High-mid Inc. Female	= 1 if she has High income = 0 otherwise
j	<i>hghincfem_c</i>	High Income Female	= 1 if she has Lo-mid income = 0 otherwise
rrace_1 * gender_1			
a	<i>whitemen_d</i>	White Male	= 1 if he is White = 0 otherwise
b	<i>blackmen_d</i>	Black Male	= 1 if he is Black = 0 otherwise
c	<i>hispothrmn_d</i>	Hispanic & other Male	= 1 if he is Hispanic/Other = 0 otherwise
d	<i>whitefem_d</i>	White Female	= 1 if she is White = 0 otherwise
e	<i>blackfem_d</i>	Black Female	= 1 if she is Black = 0 otherwise
f	<i>hispothrfem_d</i>	Hispanic & Other fem.	= 1 if she is Hispanic/Other = 0 otherwise
gender_1 * marital_1			
a	<i>marrmen_a</i>	Married male	= 1 if Male is Married = 0 otherwise
b	<i>unmarrmen_a</i>	Unmarried male	= 1 if Male is Unmarried = 0 otherwise
c	<i>singmen_a</i>	Single male	= 1 if Male is Single = 0 otherwise
d	<i>marrfem_a</i>	Married female	= 1 if Female is Married = 0 otherwise
e	<i>unmarrfem_a</i>	Unmarried female	= 1 if Female is Unmarried = 0 otherwise
f	<i>singfem_a</i>	Single female	= 1 if Female is Single = 0 otherwise

TABLE 15. DESCRIPTIVE STATISTICS

#	Variables	Obs.	Mean	Std. Dev.	Min	Max
	partyid_1	962	2.103950	0.838464	1	3
a	<i>republican</i>	962	0.405823	0.491816	0	1
b	<i>independent</i>	962	0.286902	0.452550	0	1
c	<i>democrat</i>	962	0.408523	0.491816	0	1
	mrelig_1	798	2.098997	1.037067	1	4
a	<i>protestant</i>	798	0.387218	0.487419	0	1
b	<i>otherchristian</i>	798	0.231829	0.422265	0	1
c	<i>catholic</i>	798	0.275689	0.447141	0	1
d	<i>otherreligs</i>	798	0.105263	0.307084	0	1
	gender_1	1001	1.436563	0.496207	1	2
a	<i>female</i>	1001	0.563436	0.496207	0	1
b	<i>male</i>	1001	0.436563	0.496207	0	1
	educ_1	1000	2.690000	0.959594	1	4
a	<i>notgradhs</i>	1000	0.120000	0.325124	0	1
b	<i>gradhs</i>	1000	0.303000	0.459785	0	1
c	<i>techandcoll</i>	1000	0.344000	0.475278	0	1
d	<i>gradandpro</i>	1000	0.233000	0.422963	0	1
	marital_1	987	1.744681	0.842374	1	3
a	<i>married</i>	987	0.514691	0.500038	0	1
b	<i>unmarried</i>	987	0.225973	0.418410	0	1
c	<i>single</i>	987	0.264488	0.441293	0	1
	incomec_1	986	2.684584	1.020056	1	4
a	<i>lowincm</i>	986	0.182555	0.386439	0	1
b	<i>lowermidinc</i>	986	0.158215	0.365127	0	1
c	<i>hiermidinc</i>	986	0.165314	0.371653	0	1
d	<i>highincm</i>	986	0.021298	0.144449	0	1
	age_1	960	2.404167	1.033931	1	4
a	<i>yngvtrs</i>	960	0.233333	0.423173	0	1
b	<i>elymidvtrs</i>	960	0.309375	0.462477	0	1
c	<i>ltemidvtrs</i>	960	0.277083	0.447193	0	1
d	<i>oldvtrs</i>	960	0.180208	0.384561	0	1
	rrace_1	1001	1.394605	0.690747	1	3
a	<i>white</i>	1001	0.724275	0.447102	0	1
b	<i>black</i>	1001	0.156843	0.363835	0	1
c	<i>hispothers</i>	1001	0.118881	0.323810	0	1
	state1_1	1001	1.649351	0.477412	1	2
a	<i>south</i>	1001	0.350649	0.477412	0	1
b	<i>north</i>	1001	0.649350	0.477412	0	1

TABLE 16. DESCRIPTIVE STATISTICS

#	Variables	Obs.	Mean	Std. Dev.	Min	Max
educ_1 * gender_1		1001				
a	<i>nohsmen_b</i>	(56)	0.055944	0.229929	0	1
b	<i>hgsmen_b</i>	(134)	0.133866	0.340679	0	1
c	<i>tecscollmen_b</i>	(151)	0.150849	0.358081	0	1
d	<i>collpromen_b</i>	(96)	0.095904	0.294607	0	1
e	<i>nohsfem_b</i>	(64)	0.063936	0.244761	0	1
f	<i>hghsfem_b</i>	(169)	0.168831	0.374790	0	1
incomec_1 * gender_1		1001				
a	<i>loincmen_c</i>	(53)	0.052957	0.224039	0	1
b	<i>lomidincmen_c</i>	(72)	0.071928	0.258498	0	1
c	<i>midincmen_c</i>	(223)	0.222777	0.416318	0	1
d	<i>himidincmen_c</i>	(73)	0.072927	0.260147	0	1
e	<i>hghincmen_c</i>	(8)	0.007992	0.089085	0	1
f	<i>loincfem_c</i>	(127)	0.126873	0.332997	0	1
g	<i>lomidincfem_c</i>	(84)	0.083916	0.277401	0	1
h	<i>midincfem_c</i>	(243)	0.242757	0.428964	0	1
i	<i>himidincfem_c</i>	(90)	0.089910	0.286196	0	1
j	<i>hghincfem_c</i>	(13)	0.012987	0.113275	0	1
rrace_1 * gender_1		1001				
a	<i>whitemen_d</i>	(321)	0.320679	0.466971	0	1
b	<i>blackmen_d</i>	(61)	0.060939	0.239338	0	1
c	<i>hispothrmen_d</i>	(55)	0.054945	0.227987	0	1
d	<i>whitefem_d</i>	(404)	0.403596	0.490864	0	1
e	<i>blackfem_d</i>	(96)	0.294607	0.294607	0	1
f	<i>hispothrfem_d</i>	(64)	0.244761	0.244761	0	1
gender_1 * marital_1		1001				
a	<i>marrmen_a</i>	(225)	0.306693	0.461351	0	1
b	<i>unmarrmen_a</i>	(82)	0.081918	0.274377	0	1
c	<i>singmen_a</i>	(123)	0.122877	0.328460	0	1
d	<i>marrfem_a</i>	(283)	0.282717	0.450545	0	1
e	<i>unmarrfem_a</i>	(141)	0.140859	0.348050	0	1
f	<i>singfem_a</i>	(133)	0.132868	0.339600	0	1

TABLE 17. CORRELATION MATRIX (INCOME * EDUCATION)

	notgradhs	gradhs	techncoll	gradanpro	lowincm	lwmdinc	himidinc	highincm
notgradhs	1.0000							
gradhs	-0.2435	1.0000						
techncoll	-0.2674	-0.4775	1.0000					
gradanpro	-0.2035	-0.3634	-0.3991	1.0000				
lowincm	0.2842	0.0581	-0.0846	-0.1885	1.0000			
lwmdinc	-0.0090	0.0901	0.0173	-0.1114	-0.3006	1.0000		
himidinc	-0.1788	-0.0738	0.0408	0.1735	-0.4357	-0.5864	1.0000	
highincm	-0.0651	-0.1038	0.0177	0.1444	-0.1296	-0.1745	-0.2529	1.0000

* The pair-wise correlation of each pair of variables is followed by a corresponding p-value (in parentheses) associated with the hypothesis test that the correlation is 0.

TABLE 18. CORRELATION MATRIX

	partyid_1	incomec_1	educ_1	mrelig_1	gender_1	marital_1	age_1	rrace_1	state_1
partyid_1	1.0000								
incomec_1	-0.1828	1.0000							
educ_1	-0.1004	0.3634	1.0000						
mrelig_1	0.1024	-0.0217	0.0383	1.0000					
gender_1	-0.0199	0.1187	-0.0305	-0.0275	1.0000				
marital_1	0.0899	-0.2579	-0.0670	0.1218	0.0189	1.0000			
age_1	0.0527	0.0003	-0.0629	-0.1199	0.0127	-0.3629	1.0000		
rrace_1	0.1680	-0.1494	-0.0808	0.1841	-0.0042	0.1965	-0.2223	1.0000	
state1_1	0.1595	-0.0759	0.0485	0.2432	-0.0159	0.1029	0.0148	0.0986	1.0000

* Table 15 above presents the pair-wise correlation of each pair of variables. Below that correlation is the corresponding p-value (in parentheses) associated with the hypothesis test that the correlation is 0. E.g. the correlation between partyid_1 and educ_1 is -0.0014 and the p-value for this correlation is 0.0018. This p-value is used to test whether the correlation is significantly different from 0. Therefore, using a two-tailed test and an alpha of 0.05,⁴⁵ the correlation between partyid_1 and educ_1 is significantly different from zero (because 0.0018 less than 0.05).

⁴⁵ A significance level of 5% or 0.05 is used as a standard by Jeffrey M. Wooldridge in *Introductory Econometrics: A modern Approach*. 3rd Edition © 2003 by South-Western, United States.

TABLE 19. VIF TEST FOR MULTICOLLINEARITY

Variables	VIF	1/VIF
techandcoll	2.93	0.340789
gradandpro	2.84	0.351585
gradhs.....	2.63	0.379815
hiermidinc	2.55	0.392304
married	2.30	0.434504
unmarried	2.17	0.461468
lowermidinc	2.07	0.482155
hispothrmn_d	1.97	0.508536
hispothers	1.96	0.509231
blackmen_d	1.82	0.548106
black	1.82	0.550818
protestant	1.76	0.567403
yngvtrs	1.72	0.582476
otherchristian	1.62	0.618644
highincm	1.57	0.635562
oldvtrs	1.53	0.652645
ltemidvtrs	1.43	0.698186
male	1.39	0.719193
otherreligs	1.34	0.747237
south	1.14	0.879228
Mean VIF	1.62	

* The *variance inflation factor* (VIF) test for multicollinearity above indicates that the VIF values for all independent variables are less than 4 (4, used as a thumb rule) therefore multicollinearity is not a problem here.

TABLE 20. LINEAR PROBABILITY MODEL REGRESSION WITH ROBUST STANDARD ERRORS ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR IDENTIFICATION AS INDEPENDENTS IN THE U.S

Variables	(1)		(2)		(3)		(4)	
	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
<i>independent</i>								
_ cons	0.253***	0.046	0.253***	0.058	0.341***	0.067	0.421***	0.071
techandcoll	0.068	0.049	0.068	0.051	0.056	0.052	-0.048	0.043
gradhs	0.090*	0.049	0.018**	0.051	0.098*	0.052	0.015	0.043
gradandpro	-0.036	0.054	0.038	0.056	0.037	0.056	-0.040	0.053
lowermidinc	-0.031	0.046	-0.029	0.047	-0.017	0.048	-0.000	0.043
hiermidinc	-0.030	0.045	-0.047	0.046	-0.027	0.048	-0.015	0.066
highincm	0.053	0.067	-0.073	0.069	-0.051	0.071	-0.096	0.116
male			0.046	0.036	0.037	0.036	0.021	0.038
hispothers			-0.050	0.068	-0.074	0.069	-0.034	0.081
black			-0.104**	0.049	-0.125**	0.050	-0.084	0.055
hispothrmn_d			0.072	0.100	0.089	0.101	0.075	0.122
blackmen_d			0.015	0.082	0.008	0.082	0.043	0.089
yngvtrs			0.059	0.042	0.010	0.046	-0.019	0.051
ltermidvtrs			-0.015	0.039	-0.004	0.039	-0.037	0.042
oldvtrs			-0.051	0.045	-0.044	0.047	-0.054	0.050
married					-0.117***	0.045	-0.077	0.057
unmarried					-0.083	0.053	-0.060	0.056
otherchristian							-0.035	0.050
protestant							-0.000	0.044
otherreligs							-0.055	0.060
south							-0.095***	0.035
N	950		950		906		740	
R ²	0.01		0.02		0.03		0.03	

* Statistically Significant at the 10% Level

** Statistically Significant at the 5% Level

*** Statistically Significant at the 1% Level

TABLE 21. ODDS RATIOS OF LOGIT REGRESSION ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR IDENTIFICATION AS REPUBLICANS IN THE U.S

Variables	(1)		(2)		(3)		(4)	
<i>republican</i>	<i>Odds Ratio</i>	<i>S.E</i>						
_ cons	--	--	--	--	--	--	--	--
techandcoll	1.345	0.354	1.352	0.369	1.379	0.383	1.725*	0.540
gradhs	0.859	0.232	0.813	0.229	0.842	0.239	1.041	0.320
gradandpro	1.083	0.308	1.009	0.295	1.032	0.306	1.361	0.457
lowermidinc	1.224	0.307	1.195	0.325	1.174	0.324	1.050	0.326
hiermidinc	2.250***	0.529	2.024***	0.503	1.914**	0.489	1.560	0.437
highincm	3.246***	1.074	2.782***	0.966	2.635***	0.938	3.179***	1.279
male			0.988	0.166	1.048	0.178	1.105	0.210
hispothers			0.989	0.323	1.058	0.355	1.146	0.434
black			0.205***	0.081	0.229***	0.090	0.128***	0.065
hispothrmn_d			0.389*	0.201	0.368*	0.191	0.367	0.228
blackmen_d			1.073	0.649	1.100	0.670	1.076	0.811
yngvtrs			0.860	0.181	1.136	0.289	1.259	0.334
ltemidvtrs			0.872	0.169	0.834	0.164	0.909	0.206
oldvtrs			0.738	0.170	0.678*	0.159	0.781	0.200
married					1.768**	0.404	1.382	0.367
unmarried					1.856**	0.512	1.520	0.485
otherchristian							1.581*	0.412
protestant							1.609**	0.369
otherreligs							1.133	0.372
south							2.059***	0.373
N	950		914		906		740	
Log Likelihood	-564.45		-524.65		-518.66		-408.49	
Pseudo R ²	0.03		0.07		0.08		0.12	
% Corr. Predicted	0.69		0.69		0.69		0.71	

* Statistically Significant at the 10% Level
 ** Statistically Significant at the 5% Level
 *** Statistically Significant at the 1% Level

TABLE 22. ODDS RATIOS OF LOGIT REGRESSION ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR IDENTIFICATION AS DEMOCRATS IN THE U.S

Variables	(1)		(2)		(3)		(4)	
<i>democrat</i>	<i>Odds Ratio</i>	<i>S.E</i>						
_ cons	--	--	--	--	--	--	--	--
techandcoll	0.582**	0.133	0.562**	0.136	0.575**	0.139	0.500***	0.135
gradhs	0.779	0.177	0.726	0.176	0.736	0.179	0.715	0.198
gradandpro	0.818	0.204	0.849	0.222	0.824	0.217	0.742	0.217
lowermidinc	0.994	0.199	1.018	0.223	0.982	0.217	1.010	0.255
hiermidinc	0.585***	0.114	0.692*	0.147	0.671*	0.147	0.786	0.198
highincm	0.429***	0.139	0.533*	0.184	0.515*	0.182	0.551	0.219
male			0.814	0.138	0.807	0.138	0.814	0.155
hispothers			1.285	0.410	1.342	0.431	1.046	0.373
black			4.309***	1.143	4.279***	1.148	4.831***	1.464
hispothrmn_d			1.521	0.676	1.472	0.656	1.523	0.793
blackmen_d			0.946	0.393	0.992	0.417	0.908	0.427
yngvtrs			0.876	0.180	0.873	0.208	0.906	0.245
ltemidvtrs			1.208	0.224	1.991	0.224	1.259	0.264
oldvtrs			1.653**	0.350	1.729**	0.375	1.607**	0.383
married					1.059	0.232	1.078	0.273
unmarried					0.895	0.231	0.936	0.277
otherchristian							0.782	0.184
protestant							0.656*	0.142
otherreligs							1.126	0.329
south							0.789	0.139
N	950		950		906		740	
Log Likelihood	-627.99		-571.79		-566.73		-459.68	
Pseudo R ²	0.02		0.07		0.07		0.08	
% Corr. Predicted	0.60		0.65		0.66		0.68	

* Statistically Significant at the 10% Level
 ** Statistically Significant at the 5% Level
 *** Statistically Significant at the 1% Level

**TABLE 23. BINARY LOGIT REGRESSION WITH ROBUST STANDARD ERRORS
ON THE EFFECTS OF PEOPLE'S INCOME AND EDUCATION ON THEIR
IDENTIFICATION AS INDEPENDENTS IN THE U.S**

Variables	(1)		(2)		(3)		(4)	
<i>independent</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>	<i>Coeff.</i>	<i>S.E</i>
_ cons	-1.091***	0.166	-1.099***	0.301	-0.689*	0.336	-0.519	0.429
techandcoll	0.348	0.263	0.359	0.276	0.307	0.279	-0.279	0.326
gradhs	0.452*	0.177	0.551**	0.273	0.504*	0.276	0.356	0.323
gradandpro	0.189	0.199	0.207	0.303	0.203	0.305	-0.060	0.354
lowermidinc	-0.149	0.219	-0.145	0.228	-0.086	0.233	0.001	0.269
hiermidinc	-0.145	0.176	-0.239	0.222	-0.144	0.232	-0.088	0.273
highincm	-0.264	0.319	-0.366	0.351	-0.260	0.360	-0.556	0.442
male			0.223	0.171	0.174	0.173	0.112	0.199
hispothers			-0.249	0.357	-0.386	0.377	-0.189	0.442
black			-0.573*	0.296	-0.682**	0.304	-0.471	0.328
hispothrmn_d			0.345	0.482	0.443	0.501	0.377	0.599
blackmen_d			0.136	0.452	0.097	0.459	0.256	0.481
yngvtrs			0.279	0.199	0.048	0.221	-0.094	0.255
ltemidvtrs			-0.073	0.195	-0.017	0.197	-0.188	0.230
oldvtrs			-0.264	0.237	-0.228	0.249	-0.297	0.279
married					-0.562***	0.213	-0.383	0.247
unmarried					-0.391	0.252	-0.299	0.285
otherchristian							-0.173	0.259
protestant							0.009	0.241
otherreligs							-0.293	0.343
south							-0.521***	0.196
N	950		914		906		740	
Log Likelihood	-566.56		-537.43		-528.518		-413.839	
Pseudo R ²	0.01		0.02		0.03		0.03	
% Corr. Predicted	0.71		0.71		0.71		0.74	

* Statistically Significant at the 10% Level

** Statistically Significant at the 5% Level

*** Statistically Significant at the 1% Level

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