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RESEARCH BRIEF

Voters Who Abstain:

Ballot Rolloff in a New Jersey Legislative Election

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PREFACE

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ABSTRACT OF THE THESIS

VOTERS WHO ABSTAIN: BALLOT ROLLOFF IN A NEW JERSEY LEGISLATIVE ELECTION

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The disputed 2000 U.S. presidential election focused attention on undervoting, or ballot rolloff, in which no vote is cast in a particular race or part of the ballot. Issues of voting machine technology and ballot design predominated in early post-election studies of rolloff, but others have tested for links to demographic variables and election characteristics. While most research has concentrated on high-salience races such as presidential elections, this research tests relationships between rolloff and variables of demographics and of district competitiveness in a low-salience election. State legislative races topped the ballot in the 2011 New Jersey election. Rolloff was found in every race, sometimes in numbers large enough to potentially change the election outcome. Rolloff correlated to demographic factors including race, ethnicity, language, and age, but correlations with only district competitiveness proved to have explanatory power in multivariate regression analyses. A survey of likely New Jersey voters reinforces a connection between rolloff and electoral environmental factors, suggesting an avenue for further research.

INTRODUCTION

It is understandable and appropriate that much of the research on residual votes – votes in elections that for various reasons do not count (ProCon.org, 2008) – has focused on technical issues such as problems caused by ballot design or by different types of voting machines. The concept of some voters casting more ballot choices than allowed (overvoting) or making no valid choice in a race (undervoting) gained attention after the disputed 2000 presidential election. Voting irregularities in Florida led to legal challenges of the results and the U.S. Supreme Court deciding the winner. Many problems in Florida were caused by outdated voting machines that did not record votes and by ballot designs that, critics claimed, confused voters. Researchers have studied the causes of residual votes and of undervotes in particular to explore whether undervoting signals the denial of voting rights. Activists decried a disproportionate incidence of undervoting among African-American voters. They argued that invalidation of many African-American votes in Florida effectively disenfranchised that group from the political process (Walton, 2002, p. 21). Research spurred by that experience has often focused on the mechanical causes of voting irregularities in high-salience elections and whether residual votes correlate to certain demographic and political groups.

Since 2000, more studies have investigated correlations between undervotes, also known as ballot rolloff, and environmental factors in an election such as district competitiveness and lack of voter information. A quick example to illustrate undervote: 10,000 people vote in a city election, but only 9,700 cast votes in the mayoral race. The others cast no vote for mayor for various reasons. The undervote, or rolloff, in that race is 300 votes, or 3 percent of ballots cast. Most research on rolloff involves elections at the presidential and federal office levels. These elections are more likely to bring out casual voters less experienced at navigating ballots and voting technologies. New Jersey's 2011 legislative elections provide an opportunity to study

relationships between ballot rolloff and demographic and electoral variables without a high-interest race topping the ticket. In 2011, the election for New Jersey state Senate placed highest on the ballot, with state Assembly listed second. Such an election, similar to a mid-term federal election, is likely to draw more experienced, conscientious voters less likely to make mistakes in voting (Hill, 2009, p. 13). Another reason New Jersey's 2011 election makes for a good laboratory for rolloff analysis is the uniform use of similar electronic voting machines across the state, controlling for the impact of different technologies. Analysis focused on two questions: Does undervoting, or rolloff, correlate to demographic variables of race, ethnicity, language, economics, age, sex, and education at the legislative district level? And does rolloff correlate to the competitiveness of the legislative district election?

Datasets for such research are readily available. District election results including total ballots cast for all Senate and Assembly candidates and total ballots cast by all voters are available from the New Jersey Division of Elections, Department of State (N.J. Elections, 2011). The U.S. Census Bureau provides downloadable demographic estimates at the legislative district level through its American Factfinder website (Census Bureau, 2013). The 2011 legislative election results were analyzed to calculate undervoting percentages and margins of victory in Senate and Assembly races in all of the state's 40 legislative districts. Rolloff was found in every legislative race. In at least three districts, rolloff was so high that voters who skipped the Assembly race could have changed the outcomes of those elections.

Correlational analyses tested undervote percentages with variables of demographic characteristics as well as margins of victory in each election. In Senate elections, relationships were found at statistically significant levels between rolloff and the percentages of the white population, Hispanics, non-English speakers, age, and people in poverty. In the Assembly, the

same correlations plus a relationship with median household income were found. The strongest significant relationships of any variable, though, were found in both houses between rolloff and district competitiveness. Bivariate regression analysis confirmed the correlations at statistically significant levels. However, those relationships all but vanished in multivariate regression analyses. Only the relationship between rolloff and competitiveness survived at statistically significant levels and provided the strongest explanatory power.

Survey data collected for this research generally reinforce the findings of significant but weak relationships between undervoting and demographic factors, and show connections between undervoting and electoral environmental factors such as knowledge about a certain race. The Stockton Polling Institute surveyed 800 likely New Jersey voters in October 2012. Interviewers asked whether or not respondents voted all sections of the ballot in the last election (which for most would be the 2011 legislative election). One in eight said they had rolled off part of the ballot. Nearly 50 percent of those who undervoted cited reasons related to the election, including low information, disinterest, and dislike of the candidates or of the system.

These analyses and results reflect the complexity of ballot rolloff. No one factor is likely to explain the phenomenon. For that reason, relationships with demographic factors cannot be completely dismissed in favor of stronger ties with competitiveness. The results point to the need for further research, including variables that can test for the role low information elections may play in undervoting. The importance of this research is evident in the need for elected government to represent the will of the electorate, which lies at the heart of American democracy. Walton (2002, pp.21-2) notes that throughout U.S. history, denial of voting rights ran counter to the American culture of liberty and equality. Lanning (2009, p. 433) argues that "when significant numbers of citizens abstain or are denied the right to participate, government

necessarily becomes less democratic." As government becomes less representative, officials are more likely to address the needs only of groups known to vote and support them (Trounstine, 2006, pp. 890-1), thereby reducing accountability. Hall (2007, p. 1147) ties the issue of ballot rolloff to the core value of representative democracy:

> "(The) problem of voter apathy seems particularly acute when those who actually do make it to the polls fail to complete their ballots. In fact, the phenomenon of ballot rolloff, whereby voters cast votes only for a selective set of offices, raises serious issues about legitimacy and accountability …"

LITERATURE REVIEW

Much of the literature on undervotes is of recent vintage, with research spurred by the disputed presidential election between Republican George W. Bush and Democrat Al Gore in 2000. Voting behavior had been studied with increasing interest by social scientists since the 1940s (Burnham, 1965, p. 7). However, academic interest intensified after 2000, when the nation watched spellbound for weeks, not knowing who had been elected president. Voting irregularities in Florida prompted claims of voter disenfranchisement, a recount in certain counties ordered by the state judiciary, and ultimately, a U.S. Supreme Court decision that stopped the recount and handed victory to Bush. Analysis showed that 175,655 ballots, or 2.9 percent of the Florida vote, did not bear valid votes in the presidential contest. Undervotes accounted for about 65,000 problem ballots (Leib, 2002, p. 91). Critics charged that much of the problem stemmed from Florida's voting equipment and systems. Nearly 65 percent of Florida's population voted using punch cards, and optical scanners registered almost all of the rest of the votes (Ansolabehere S. a., 2005). The term "hanging chads" entered the popular lexicon as

thousands of votes were discounted because machines did not always fully punch out the area of the ballot signifying a presidential selection. The punch machine sometimes left a hanging piece of paper, and sometimes left no indication of a vote at all. Optical scanners did not always accurately "read" ballot choices that were not clearly marked. Even without technical problems, many voters and critics said confusing ballot designs led to unintentional undervotes, overvotes, and miscast votes. More than 2,000 people told Democratic Party officials they believed they had voted for independent Patrick Buchanan instead of Gore because the ballot design was so confusing (Bai, 2000). Florida wasn't the only state in which votes went unrecorded. Of 80.6 million votes cast nationwide in the 2000 election, 1.6 million did not register a vote for president (Hargrove, 2004). While Florida brought the problem of residual votes to the attention of the nation, Hargrove (p. 7) notes that seven states had higher roll-off rates than Florida – including New Jersey.

The historic nature of the Florida experience has strongly influenced the literature and ballot rolloff research. Much of the research – but not all – centers on the technical apparatus of voting and on ballot design. A large percentage of election reform proposals since 2000 call for updating technical equipment (Kimball D. C., 2005, pp. 508-9). Some of the issues raised are no longer relevant to New Jersey, as all counties in the state have upgraded their voting machines to electronic equipment, with most counties using the same models (Campisi, 2013). But the body of undervote research, which sometimes comes to opposing conclusions, reflects the complexity of the topic. Theories relate rolloff to ballot location, design, demographic factors, and conditions related to an election. Understanding the many relevant issues helps explain why the New Jersey election provides a good subject for this study.

Fischer (2001) provides a useful overview of the five main voting technologies:

- Paper ballots, on which voters mark their choices from lists of candidates or ballot questions. Only 3 percent of U.S. precincts still used paper ballots in 2000.
- Lever machines, which mechanically counts votes after voters turn levers next to their choices on a posted ballot. About 22 percent of precincts employed lever machines in 2000, although the equipment was no longer manufactured.
- Punch cards, in which voters punch holes in a paper ballot that is read by a computer. About 37 percent of precincts used some form of punch cards in 2000.
- Marksense forms, or optical scan, in which voters fill in ovals or boxes on a paper ballot that is scanned and read by a computer. About 25 percent of precincts used this equipment.
- And direct recording electronic (DRE) voting, in which voters push buttons or touch computer screens to electronically record their choices. About 7 percent of precincts used DRE systems in 2000.

Studies have found correlations between the type of voting equipment used and the incidence of undervotes (Ansolabehere 2005). However, the conclusions of various studies have not been uniform except to find that punch card systems are most associated with residual votes.

One of the first post-2000 studies (Caltech/MIT Voting Technology Project, 2001) analyzed data on voting machines and residual votes from two-thirds of U.S counties over four presidential elections from 1988 to 2000. The research linked hand-counted paper ballots to the fewest spoiled votes, followed by lever machines and optically scanned ballots; the most spoiled ballots correlated to punch cards and DRE systems. Bullock and Hood (2002), seeking to build upon Caltech/MIT, found that optical scanners and lever machines produce the fewest undervotes, while punch cards produce the greatest percentage. The authors, analyzing voting

systems used in Georgia congressional districts, created variables representing different voting technologies and performed multivariate analysis with undervotes as the dependent variable. It should be noted that the preceding studies were conducted at a time when DREs accounted for a small percentage of voting equipment. But Ansolabehere and Stewart (2005) also associated electronic systems and punch cards with the highest levels of undervoting among the five major technologies. The authors analyzed data from all U.S. counties for presidential, U.S. Senate, and gubernatorial elections between 1988 and 2000.

Yet other research suggests that DRE systems are no worse than others and could potentially reduce the percentage of undervotes. Fischer (2001, 8-9) notes that "voting technologies differ in how they help a voter prevent or correct errors" and that electronic systems could reduce undervotes by flagging skipped contests, by guiding voters electronically through complex ballots, and by allowing voters to review their choices before casting final votes. VotersUnite.org (2007) reports that undervote rates among Hispanic and Native American voters plummeted from 2004 to 2006 after New Mexico switched from DRE systems to all paper ballots, but the change produced hardly any effect among Anglo voters. Tomz and Van Houwelling (2003) arrive at opposing conclusions regarding racial differences in their analysis of millions of voting records in South Carolina and Louisiana. Measuring the difference in undervote rates beween African American and white voters, the authors find that undervoting is 4 to 6 percentage points higher among black voters than whites when optical scanners and punch cards are used, but that undervoting is cut to a gap of only. 0.3 to 0.7 percentage points with lever and DRE machines. Warf (2006, 544-51), who reviewed nationwide county-level residual voting rates for different technologies, finds undervotes for different racial and ethnic groups to be largely proportional to

their percentage of the voting population, and that different groups using different technologies was unlikely to bias undervote levels.

Related to hypotheses that equipment affects ballot rolloff is the theory that the design of the ballot relates to voting irregularities and errors. Herrnson (2012, pp. 717-8) cites the infamous butterfly ballot as a factor in large numbers of Palm Beach County, Florida voters inadvertently voting for Buchanan instead of Gore in 2000. The Brennan Center for Justice (Norden, 2012) argues that poor ballot design is linked to residual votes, including ballot rolloff, and that 400,000 votes were not counted nationwide in 2008 and 2010. Norden (2012, pp. 16-8) provides examples in which he claims that poor design confused voters into skipping races:

- The ballot in East St. Louis in 2008 lacked clear headings distinguishing between the presidential and U.S. Senate candidates. Nearly 10 percent of East St. Louis voters failed to cast a vote for Senate, contrasted with a 4.4 percent rolloff rate statewide.
- The ballot in Sarasota County, Florida similarly did not distinguish well between gubernatorial and 13th Congressional District candidates. More than 14,000 Sarasota County ballots did not include a vote for Congress in a race decided by 369 votes. The undervote rate was 14 percent, while it was only 2.5 percent in adjacent Charlotte County.

Kimball and Kropf (2005, p. 510) note that research suggests that listing candidates for the same office in separate columns or on separate pages contributes to undervotes, but argue that little research has been conducted on ballot design and rolloff. They studied paper ballots used in 2002 gubernatorial elections in 250 counties in Florida, Illinois, Iowa, Kansas and Tennessee, and rated the ballots on visual design factors such as readability, the location of instructions, use of shading and bolding, and the extent of visual clutter, among others. Using multivariate analysis,

they find that poor ballot design was related to levels of unrecorded votes. Herrnson et al. (2012) experimented by having 1,540 participants representative of the voting population simulate voting with different types of ballots. They find that voters using a standard office-bloc ballot, which groups all of the candidates for the same office together, make fewer unintentional undervotes (p. 517).

While ballot design has been a target of criticism in New Jersey, a review of the literature finds little complaint that ballots confuse Garden State voters into skipping contests. Most criticism centers on the effect of ballot position on candidates' chances, with the preferred position being at the top or to the left of the ballot (Ryzewicz 2013). In 2009, independent gubernatorial candidate Chris Daggett began generating interest after a strong debate performance. But he faced poor ballot position throughout the state, where county election officials influence such placements and where major party candidates are given the preference (Fletcher, 2009). Review of the literature suggest that poor design has not been publicly claimed to cause ballot rolloff in New Jersey.

Research finds that positioning of races on the ballot has impact not only on candidates, but on voters in relation to ballot rolloff. Hill (2009) collected images of nearly 1 million anonymous ballots from 15 Florida counties for the 2006 midterm general election. With an overall rolloff rate of 7.5 percent, Hill finds that rolloff levels are lower at the top of the ballot – 1 to 2 percent that year for the gubernatorial and U.S. Senate races, respectively – and that rolloff increases as voters progress down ballot (2009, p. 11). Augenblick and Nicholson (2009, p. 2) argue that voting at the top of the ballot produces "choice fatigue" that relates to undervotes down ballot. The authors study precinct-level results from 1992-2006 in San Diego County, California, where local questions force different issues to appear in different ballot positions from precinct to

precinct. They report (p. 4): “Across all datasets, we found that lowering a given contest by one position on the ballot increases precinct-level undervotes by 0.13 points.” Vanderleeuw and Engstrom (1987) studied differences not only in rolloff at the top and bottom of the ballot, but between white and African American voters. The authors theorize that black voters, who before 2012 (File, 2013) turned out in smaller percentages than whites, may be doubly under-represented by undervoting. They find that while differences in the undervote in gubernatorial elections at the top of the ballot was not significant, black rolloff was higher than white undervoting in referendum questions at the bottom of the ballot (pp. 1090-1).

While much of the literature correlates rolloff to technical and design issues, significant research ties undervotes to demographic factors, particularly race, but also to other variables such as ethnicity, sex, income, and education levels, as well as factors germaine to specific elections such as the competitiveness of the election district or the level of information available about the election. Because critics charged that African American voters in particular were disenfranchised in the 2000 election, a number of studies have focused on rolloff among black voters. Not all research finds race to be a factor. Analysis of Voter News Service exit polls from 1992 (Knack, 2003, pp. 7-8) finds barely any variation between reported undervotes in the presidential election between African American and white voters. But generally, enough literature has reported correlations between race and rolloff that a number of authors accept the link and seek to build on it in their research.

Although the focus of Kimball and Kropf (2005, pp. 520-2) is on ballot design’s impact on voting irregularities, they note greater problems in counties with high African American populations, concluding that: “The significant relationship between race and unrecorded votes is strongest in counties with poorly designed ballots …” Tomz and Van Houweling (2003, p. 46)

cite “an accumulating body of research (that) points to a racial gap in voided ballots. African Americans, several studies suggest, cast invalid presidential votes at a higher rate than whites.” The authors attribute much of the disparity to types of voting equipment found more frequently in areas with large black populations. But one study (Sinclair, 2004) that controlled for voting systems found a postive correlation between undervotes and race, as well as with other demographic variables. Sinclair and Alvarez studied votes in 2000 in Los Angeles County, which used only a punch card system. Bullock and Hood (2002, p. 990) considered the percentage of African American voters as a variable in their large N study of Georgia congressional districts and find that regardless of type of voting equipment, undervotes are more prevalent in areas with higher percentages of black voters, as well as in areas with concentrations of new voters and voters with lower levels of education. Like Tomz and Van Houweling, Herron and Sekhon (2005, 154) accept the body of research that links residual votes to race, citing a difference between white and black voters of sometimes more than 10 percent. The authors theorize that under a Downsian “rational absention choice (p. 173),” black voters often consciously decide to not vote in certain races. They analyze precinct-level voting in 1998 in Cook County, Illinois, and find that the gap in white-black undervoting shrinks when black candidates are on the ballot. Wattenberg et al. (2000, p. 241), studying intentional ballot rolloff, find a correlation between levels of rolloff and higher percentages of African American populations in 1992 and 1996 congressional district elections. The authors theorize that low salience of House elections for these voters and low information may drive the undervoting, but produce no evidence to that effect. Still, their drawing upon competing theories relects a common theme throughout the literature: Ballot rolloff is tied to multiple and complex factors, some related to voter demographics, some related to technology and design, and some related to

environmental variables. Nordon (2012, p. 13) argues that poor ballot design is a major cause of unrecorded votes, but concedes: "Undoubtedly, there will be other contributing factors, such as demographics or local interest in a political contest."

Environmental factors that are found to correlate with rolloff include the competitiveness of an election or of an election district, and the amount of information available about the candidates. The rational voter model (Crain, 1987, p. 221) (Wattenberg, 2000, p. 239) theorizes that a voter casts ballots when the benefits exceed the costs. Crain et al. note the reward for voting may be greater when an election is close and each vote could make a difference. The authors theorize that the rational voter will be more likely to abstain in safe races and vote in more competitive races. They create a measure of relative closeness between U.S. Senate and House races on the same ballot by dividing votes from race into the other, and find less rolloff between Senate and House races when the House election is closer (p. 228). Knack and Kropf (2003, p. 14), analyzing National Election Studies (NES) surveys from 1980-2000, find the closeness of a presidential election in a state correlates to undervoting in that race, with undervoting increasing when the victory margin increases to 10 percentage points. Wattenberg, et al. (2000, pp. 239-40), who studied contested House districts in 1992 and 1996, find rolloff percentages increase as the victory margin increases, although the authors say other factors must be at work because 3-5 percent of voters skipped House races even in close districts. Hall (2007) studied rolloff in state judicial elections as compared to presidential, gubernarotial and Senate elections from 1980-2000. She finds that the presence of challengers reduces the average rolloff rate of 25.6 percent by "a sizable" 16 percent (p. 1154), and that competition reflected by closer margins of victory reduces rolloff by 4.5 percent. A subsequent study of state judicial elections (Streb M. J., 2009, pp. 655-6) largely confirms Hall's findings, with competition in 755

contested intermediate appellate court elections from 2000-2007 reducing rolloff by 20 percent. Streb, et al. note , however, that they defined competitiveness with narrower victory margins than did Hall.

The authors also tie competitiveness to the information available about an election (p. 661), speculating that more advertising is bought in a competitive election, and that helps inform voters who feel qualified to vote in a particular race. In a subsequent study, Streb and Frederick (2011) find that campaign spending had no correlation to ballot rolloff in 172 contested intermediate appellate court elections. However, they question whether enough was spent to cross an "imaginary threshold for money to influence voter participation, or (whether) the office itself is simply too obscure for money to matter (p. 168)." The observation is significant. While a number of researchers suggest that undervoting is more prevalent in low-information elections, a voter's knowledge about an election is a difficult variable to measure. McMurray (2010) creates an index of voter knowledge, using American National Election Studies survey results, based on respondents' education level, age, income, and responses to questions measuring knowledge of current affairs. He finds that the higher the information rating in comparison with other voters, the less likely the voter is to roll off from presidential to U.S. Senate and gubernatorial elections (pp. 21-2). Hall (2007, p. 1151) notes that voters look at incumbency as informational, and incumbency has been used as a factor in studying low information elections and competitiveness (Abramowitz, 2006), (Hill, 2009). Wattenberg, et al. (2000, p. 236) theorize that voting is like taking an SAT test, in which students skip questions to which they do not know the answer, with voters skipping races about which they are uninformed. The authors pool NES data from 1980, 1984, and 1988 to correlate rolloff with a variety of variables they ascribe to low-information voters: tenure in a state, region of the country, density of House districts in a state, responses to

questions about political awareness. They find rolloff tied more to low information than to demographic factors (pp. 243-7), although the findings are not totally persuasive. The variables formulated are somewhat subjective, not black-and-white indicators of low information, a complicated quality to measure.

An interesting question about undervoting tied to low information is whether rolloff is mostly a mistake or whether it is largely intentional. Nearly 50 years ago, Stiefbold (1965, p. 406) ascribed invalid German votes to people who vote because socially, "it is the thing to do" but who really do not care about politics, and to highly politicized citizens who skip contests as protests. Knack and Kropf (2003, pp. 5-6) dismiss the intention theory, citing NES and Voter News Service survey data that finds 0.73 percent and 0.77 percent respectively who say they intentionally skipped voting for president. However, Nevada has allowed a "none of the above (NOTA)" choice on its ballots since 1976 (Damore, 2011, p. 2) in recognition of voters who intentionally skip contests. Damore et al. liken rolloff to protest votes and advocate formally allowing more widespread NOTA voting. The authors study 219 state and federal elections in Nevada from 1976 to 2000 and find that NOTA voting increases in situations where protest votes are more likely (high salience offices and a lack of minor-party, protest candidates) (pp. 5-6) and in low-information contests (pp. 8-9). Kimball et al. (2003, pp. 35-6) theorize that some undervoting is intentional based on analysis of results in states in which independent Ralph Nader was on the 2000 presidential ballot versus states that left Nader off the ballot. Rolloff was more than double (2.8 percent versus 1.7 percent) in states where Nader was off the ballot. Heron and Sekhon (2003) reject mechanical and administrative reasons for rolloff correlating with African American voting and argue that undervoting is a conscious decision shaped by factors in

particular elections. They find that when black candidates are on the ballot, rolloff decreases among black voters and increases among white voters (pp. 160-72).

While this debate is an interesting and important one, the issue of intention in ballot rolloff is beyond the scope of this study. The question is one of many that can be asked regarding undervotes. The multiple facets of research evident in the literature underscore the complexity of the topic. However, the literature lays out a foundation of research on which a narrow study of New Jersey undervoting can be based.

RESEARCH DESIGN

Two hypotheses discussed in the literature form the focus of this research, which will study voting results and independent variables at the New Jersey state legislative election district level. Hypothesis 1: Undervoting/ballot rolloff correlates to demographic factors, including race, sex, Hispanic ethnicity, income, education levels, poverty levels, language, and age. Hypothesis 2: Undervoting/ballot rolloff correlates to the competitiveness of an election district. The first segment of this large N study will utilize a non-experimental, correlational cross sectional design. Rolloff levels can be identified in analysis of the 2011 New Jersey state Senate and state Assembly election returns in 40 districts. The undervote variable will be created for each Senate race by subtracting the sum of votes received by all candidates from the total ballots cast in that election. The undervote variable will be created as a percentage of ballots cast. For the Assembly races, the sum of votes received by all candidates will be divided by two because two Assembly seats are contested in each district, and that number will be subtracted from total ballots cast. The undervote level will be the dependent variable. Analysis will correlate undervote levels with independent demographic variables at the legislative district level based on U.S. Census Bureau

American Community Survey data. A limitation of this design is the inability to isolate vote results by those characteristics. But over 80 Senate and Assembly races, trends between undervoting and district variables should be evident.

To analyze the potential relationship between rolloff and the competitiveness of an election district, the key variable will be the margin of victory in the district's Senate and Assembly races, which in 2011 were the highest-level contests and were located at the top of the ballot. Voting percentages are a standard measure of district competitiveness used in elections research (Kuklinski, 1977) (Hirano, 2009) (Hall, 2007). Creation of an index was attempted to measure district competitiveness, with points assigned based on the margin of victory, the presence of a split-party legislative delegation (Senate and Assembly members), the presence of incumbents on the ticket, and whether the party controlling the Senate or Assembly seats had changed over the past 10 years. Incumbency is another oft-used variable in studies of competitiveness and low-information elections (Abramowitz, 2006) (Hall, 2007). However, the effect of redistricting and the power of incumbency over the past two decades have created an overwhelming majority of safe districts in which the same party dominates, and in which incumbents are consistently re-elected (Magyar, 2012, p. 4). The index varied little from district to district other than in the election victory margin and in party control changes that occurred after the 2001 redistricting. Those party changes were judged to be less relevant to 2011 election analyses, so the victory margin variable is employed to measure district competitiveness.

While correlational analysis will show if relationships between undervoting and demographic and electoral variables exist, multivariate analysis is needed to examine and understand the relationships between the dependent and independent variables. As noted above, ballot rolloff is a complex phenomenon. No one factor is likely to explain the circumstances of

undervoting. Multivariate analysis with linear regression ($y = b_0 + b_1x_1 + \dots b_nx_n$ in which y is the dependent variable, x's are independent variables and b's are constants) will measure the explanatory power of the different variables.

This study will not attempt to determine whether undervoting is intentional or unintentional. The theory that rolloff relates to low-information elections will also not be tested in the data analysis portion of this study. There is no variable that neatly and sufficiently captures the essence of information available about a New Jersey legislative district election. While some researchers use demographic or survey data to create variables designed to measure voters' likelihood of being informed (McMurray, 2010) (Wattenberg 2000), such variables are by definition artificial in that they cannot directly measure whether a contest is perceived by voters as low information. In addition, New Jersey makes for a difficult laboratory for studying election information levels because of the lack of a statewide media presence. New Jersey is dominated in its northern area by New York media and in its southern region by Philadelphia media. There is no statewide television network or newspaper. Many legislative candidates cannot afford to advertise in the big-city markets because of the high cost, and there is no New Jersey television vehicle for campaign ads that might inform voters (Harrison, 2013). For years, a public television network, NJN, provided public affairs programming statewide in New Jersey. However, budget cuts approved by Gov. Chris Christie shut down the network just a few months before the 2011 legislative elections (Reitmeyer, 2011). While correlation analysis of low-information elections is beyond the scope of this research, the issue will be at least indirectly considered through analysis of independent New Jersey survey data regarding ballot rolloff. That survey data will also provide some insight into the intentions of voters regarding rolloff.

The Stockton Polling Institute is an academic public opinion polling center operated by the William J. Hughes Center for Public Policy at The Richard Stockton College of New Jersey. The Polling Institute conducted a poll of 811 likely New Jersey voters in October 2012 (Hughes Center 2012). Two questions regarding rolloff were asked on this statewide survey. The first asked whether or not the respondent voted on all sections of the ballot in the last election in which he or she voted. While the last election was not specified, the 2011 general election would likely have been the last election in which most respondents had voted. Those who indicated they did not vote the entire ballot were asked to identify any reason fot not voting every part of the ballot. Interviewers silently coded responses to preprogrammed choices but were able to select an "other (specify)" response and type in the respndent's open-ended answer. These previously unpublished survey question results will be discussed in relation to the findings of the correlational and regression analyses.

DATA SELECTION

A complete dataset for this research is downloadable from the New Jersey Division of Elections website (N.J. Elections, 2011), which contains 2011 election results and total ballots cast for each of New Jersey's 40 legislative districts. There are advantages to using this dataset, and this election, to study ballot rolloff in New Jersey. The election does not feature a high-salience race such as presidential or gubernatorial that would draw casual voters. Most major research on ballot rolloff focuses on presidential, gubernatorial, and federal offices (Sinclair, 2004) (Bullock III, 2002) (Wattenberg, 2000) (Knack, 2003) (Ansolabehere 2005) (Kimball D. C., 2005). With state Senate and Assembly contests at the top of the ballot, this election would be expected to attract more experienced, regular voters who are familiar with ballots and voting

machines and are less likely to be confused by them (Hill, 2009, p. 13). The dataset is recent and complete[1]. Demographic data are available from the U.S. Census Bureau at the state legislative district geographic unit. A review of the literature does not reveal similar state-level analysis of New Jersey ballot rolloff.

Also, the effects of different types of voting mechanisms on rolloff are significantly reduced by using New Jersey's 2011 election as the case study. In the wake of Florida's 2000 voting problems, New Jersey election officials upgraded voting machines (Campisi, 2013) and no longer use older technologies. Direct recording electronic (DRE) voting machines are now used throughout New Jersey (Appel, 2009). In fact, all but three of the state's 21 counties use the exact same model (Elections N. J., 2011) of electronic voting machine. This fact helps control for the effect of different voting technologies on rolloff.

Demographic data are available at the New Jersey legislative district level for all 40 districts from the U.S. Census Bureau's American Community Survey (ACS). Five-year estimates released in 2012 and covering 2007-11 will be used to generate variables of race, sex (ratio of males to females), Hispanic ethnicity, income, education levels, poverty levels, language, and age. Using three- or one-year ACS estimates is not an option because the state legislative district geographic unit is available only in the five-year estimates. However, five-year is the best choice anyway because results are more accurate with data collected over five years than in the shorter time frames. Accuracy is prized over timeliness for this analysis.

[1] An error was discovered in the state's 12th Legislative District results. The number of votes received by the legislative candidates exceeded the number of total ballots cast. Investigation revealed that the results in Plumsted Township, Ocean County, N.J. had been misreported either to or by the state. Inspection of Ocean County vote canvasser reports available online (Ocean County 2013) provided true election returns for the township, and accurate district results were used in this analysis. The accurate data were provided to the N.J. Division of Elections to correct its District 12 results.

Finally, independent statewide survey data on ballot rolloff in New Jersey will be analyzed. The survey was conducted from Oct. 8-12, 2012 by the Stockton Polling Institute with 811 completed interviews. To qualify a "likely voter," respondents were required to answer affirmatively to three screening questions that asked: whether they were registered to vote; whether they had voted in the last election; and how likely they were to vote in the 2012 general election. Live interviewers on the Stockton College campus called a random sample of both landline and cell phone numbers. Results were weighted according to United States Census Bureau demographics for the New Jersey voting age population. The survey's margin of error was +/- 3.5 percentage points.

ANALYSIS

Results for each of 40 New Jersey state Senate and state Assembly elections were tabulated in spreadsheet format with total ballots cast in each race. The Senate undervote was calculated by subtracting combined votes for all Senate candidates from total ballots cast. Because voters were asked to select two Assembly members, the Assembly race undervote was calculated by subtracting combined votes for all Assembly candidates divided by two from total ballots cast. This captures actual votes and the total votes possible in each race and controls for any independent or minor-party candidates on the ballot. Rolloff/undervote was calculated in the number and percentage of votes possible but not cast in each race.

Rolloff was found in all 80 legislative contests. (See Table 1 in Appendix.) Rolloff levels were higher in the down-ballot Assembly races than in the Senate races topping the ballot. In the Senate, the undervote exceeded 1,000 in all but one district. The Senate undervote ranged from 967 to 3,657, with an outlier of 13,371 in an uncontested District 8 Senate election. The Senate

undervote as a percentage of ballots cast ranged from a minimum of 2.7 percent to a maxiumum of 15.4 percent, excluding the District 8 outlier of 37.4 percent. Statewide, 86.638 votes went uncast in the statewide Senate election for an average undervote of 6.1 percent in the race at the top of the ballot.Rolloff increased in the next race on the ballot, the state Assembly. In the lower house elections, the undervote ranged in number from a minimum of 1,424 to a maximum of 5,733. Assembly undervote as a percentage of ballots cast ranged from 4.7 percent to 24.1 percent, with nearly one in four voters not casting at least one Assembly vote in the 31st District. The undervote exceeded 9.9 percent in 10 Assembly districts, one quarter of the statewide electoral map. Statewide, 116,855 potential Assembly votes were not cast for an average Assembly undervote of 8.3 percent. For all 2011 elections for the New Jersey Legislature, the undervote was 203,409 out of 1.4 million votes cast, an overall undervote of 7.2 percent.

[TABLE 1 HERE]

In a close Senate race in the 38th District covering parts of Bergen and Passaic counties, the margin of victory was only 606 votes more than the undervote, a separation of only 1.6 percentage points between the victory margin and undervote. Voters who failed to cast votes in the top race on their ballot came close to affecting the outcome. However, the implications of the undervote are more serious in five state Assembly districts in which the undervote did exceed the margins of victory. In the same 38th District, tallies for the second Assembly slot winner and the losing third-place finisher were 2,006 votes apart, while the undervote was 3,006 votes. Had roughly two-thirds of the voters who rolled off of the Assembly race voted for the third-highest vote-getter, that candidate might now be a New Jersey Assembly member. The impact was even

more pronounced in the close 1st District in Cape May and Cumberland counties, where only 1,051 votes separated the winning and losing Assembly candidates. The undervote in that race was 3,200, more than three times the votes needed for victory. In Burlington County's 7th District, the undervote of 3,675 was nearly triple the 1,259 votes that separated the winner and loser. Voters who rolled off in the 7th District could have prevented a change in party control of an Assembly seat. In two other districts, the undervote and victory margins were closer but still could have statistically changed the election outcome. In Monmouth County's 11th District, there were 171 more skipped votes than the 3,087-vote victory margin in the Assembly election. And in Atlantic County's 2nd District, the undervote was only 20 more than the number of votes separating the Assembly race winners and losers. In sum, the undervote could statistically have changed the outcome of elections in one out of eight New Jersey legislative districts in 2011, and could have been a deciding factor in three very close districts.

Having established the levels of ballot rolloff, this research moves to testing for relationships between the level of rolloff expressed as a percentage of ballots cast and demographic and electoral variables in each legislative district. Does rolloff relate to demographic characteristics of the district population? Does it relate to the competitiveness of the district election? Correlational analyses will explore potential relationships using scale variables created from Census Bureau American Community Survey (ACS) data. The variables include:

- Percentage of whites in the population
- Percentage of blacks/African Americans in the population
- Percentage of Hispanic ethnicity in the population
- Percentage of non-English speakers in the population

- Percentage of adults with a bachelor's degree or higher in the population age 25 and older
- Median household income
- Percentage of people in poverty
- Median age
- And sex as measured by the number of males per 100 females in the population.

In addition, scale variables of the victory margins in state Senate and Assembly elections as expressed in percentage points will be correlated to the percentage of rolloff in each race.

In both legislative house elections, rolloff correlated with some demographic factors, but more so in the Assembly, where rolloff levels were higher than in the Senate. While the relationships were stronger in the lower house than in the Senate, they generally were not strong. The tie between competitiveness and rolloff presented the strongest correlational relationship regardless of legislative house. In the Senate elections, relationships were found at statistically significant levels for the variables of the white population, Hispanics, non-English speakers, the percentage in poverty, and age. (See Table 2 in Appendix.) Senate analysis found a Pearson correlation of -.335 at the 0.05 significance level for the white population. Postive correlations between rolloff and the Hispanic and non-English speaking populations were slightly stronger, at .442 and .414 respectively, both at the 0.01 significance level. However, no significant relationship was evidenced for the black/African American population. Negative associations with educational attainment level and median household income proved to not be statistically significant. A postive correlation of .456 was shown between rolloff and the poverty level at the 0.01 significance level. A corresponding negative correlation with median household income of -.302, with a Sig. of .062, was not found to be statistically significant. As median age increased –

signaling perhaps more experienced voters – a negative correlation of -.368 was found at the 0.05 significance level. No relationship was found between rolloff and the number of males per 100 females. Overall, some statistically weak relationships between rolloff and race, ethnicity, language, economic variables, and age were evident in Senate elections analysis, but it will be seen how strong such correlations are in terms of explanatory power for the undervote. In the Senate, the strongest relationship was with the victory margin in each district. The Pearson correlation came in at .631, with a Sig. of .000 and significant at the 0.01 level. This electoral environment variable is the only one measured to present what would be considered a strong association for group level data (Sweet, 2008, pp. 106-7).

[TABLE 2 HERE]

Analysis of the Assembly districts produced results similar to the Senate results, with statistically significant relationships found with the same variables plus a correlation with median household income. Also, relationships were generally stronger than in the Senate, and all were significant at the 0.01 level. (See Table 3 in Appendix.) Recall that the average undervote levels were higher in the Assembly, at 8.3 percent versus 6.1 percent in the upper house. The percentage of whites in the population had a Pearson correlation of -.463. Relationships were strong with Hispanics (.642) and non-English speaking populations (.612), both at a Sig. of .000. However, again, no significant relationship between rolloff and the percentage of blacks/African Americans was found. A significant relationship with the percentage of people in poverty was found at .531. Unlike in the Senate, median household income correlated at a significant level at -.415. As in the Senate, a negative correlation with median age (-.445)was significant. The

undervote was not tied to attainment of a college degree or to the number males per 100 females in the population. As in the Senate, the victory margin in the Assembly positively correlated with rolloff at a strong .751 and a Sig. of .000.

[TABLE 3 HERE]

Together, these results suggest a correlation between undervotes and characteristics of the voting district population. Rolloff decreases in areas with greater percentages of the white population and increases in districts with heavier percentages of Hispanics, non-English speakers, and people in poverty. At least in the Assembly, rolloff decreases somewhat according to level of household income. The older the population, the less rolloff is found. But none of these demographic variables demonstrate the strength of correlational power as does the margin of victory between winners and losers in both houses.

The final phase of analysis on these variables, linear regression models, tests their power to explain rolloff levels in the 2011 New Jersey legislative elections. First, bivariate linear regressions with Senate rolloff as the dependent variable confirm the relationships found in correlational analyses to be statistically significant. Such relationships were found for the independent variables representing percentages in the population of whites, Hispanics, non-English speakers, people in poverty, and median age. However, their explanatory power as measured by R Square statistics was generally low, mostly in the range of .10 to .15, although the reading for non-English speakers was .172 and for Hispanics was .196. The variable representing the Senate victory margin, with an unstandardized coefficient of .092, had an R Square of .398 at .000 significance. The model suggests that Senate undervote increased by

nearly 1 percentage point for every 10 percentage points in the victory margin This was clearly the strongest relationship with the highest explanatory power of any variable.

In the Assembly elections, the variable for victory margin similarly held the highest explanatory power associated with the rolloff dependent variable. Bivariate linear regression with Assembly victory margin as the independent variable produced an R Square statistic of .564, with a coefficient of .191 at the .000 significance level. The percentage of undervote increased nearly 1 point for every increase of 5 percentage points in the victory margin. This variable explained 56.4 percent of rolloff, according to the model. Linear regression confirmed statistically significant relationships between Assembly rolloff and the independent variables of percentages of whites, Hispanics, non-English speakers, people in poverty, and median age. R Square statistics were found to be higher than in the Senate, with a range between .20 and .40 for most, but not as high as for the Assembly victory margin.

In multivariate analyses of both Senate and Assembly elections, however, virtually all of those relationships and explanatory power vanish. Only the variables measuring competitiveness of the district, the victory margins, retain their statistical significance in multivariate linear regressions. Several models for each legislative house measured groups of variables related to race/ethnicity, economic indicators, and social factors. On the Senate side, regression testing the percentages of whites, blacks, Hispanics, and non-English speakers produced no significant relationships. (See Table 4 in Appendix.) A model comparing educational level and median age also found no significant relationships. In a measure comparing median household income and people in poverty, the poverty variable showed a coefficient of .385 at the .010 significance level. But in models introducing the Senate victory margin as a variable, that significance

disappeared. In every model calculated, victory margin consistently proved to have a statistically significant relationship.

[TABLE 4 HERE]

Similar results were produced by linear regressions using Assembly rolloff as the dependent variable. (See Table 5 in Appendix.) Again, a model testing the racial, Hispanic ethnicity, and language variables produced no significant relationships. Neither did a regression analysis of education level, median household income and median age. A comparison of income and people in poverty found a relationship with the poverty level at the .015 significance level, but that significance evaporated when the Assembly victory margin variable was introduced. In every model in which the Assembly victory margin was included, the variable was found to have a relationship at significance levels of .001 or of .000.

[TABLE 5 HERE]

Overall, the individual regression analyses tend to support the hypothesis that demographic factors such as race, Hispanic ethnicity, whites, language, poverty, and age correlate to the undervote. Analyses support the null hypothesis that such variables do not correlate with percentage of African Americans in the population, education level, sex, and income. However, these relationships disappear in multivariate linear regression analysis, suggesting they hold little explanatory power for the undervote in New Jersey's 2011 legislative elections. The regression analyses do support the hypothesis that electoral environmental factors, namely lack of

competitiveness as expressed by margin of victory, is positively correlated to rolloff, and that relationship remains statistically significant in multivariate analyses.

Survey data of New Jersey likely voters collected for this research tend to confirm the findings of the analyses of 2011 election results and the correlations and regressions. Frequencies and crosstabs of the survey data show that: a significant percentage of voters roll off on some parts of the ballot; rolloff correlates to racial, ethnic and other demographic variables, but the relationships tend to be weak; and that electoral environmental factors play a strong role in explanining rolloff.

In October 2011, interviewers for the Stockton Polling Institute completed 811 telephone interviews with likely New Jersey voters. Interviewers asked: "In the last election that you voted in, did you cast votes for every office or question on the ballot, or did you not cast votes on every part of the ballot?" Eighty-two percent said they voted on every race and question. One in eight respondents (12.7 percent) said they did not vote on every part of the ballot, while 5.1 percent were not sure or could not remember. (See Figure 1 in Appendix.) Interviewers asked the 12.7 percent who had not voted every part of the ballot: "In your own words, why did you not vote for every office or question on the ballot?" Interviewers allowed respondents to provide multiple responses to this open-ended question. The interviewers silently coded responses with pre-programmed options, including responses that: the ballot was confusing; the race was uninteresting; the candidates were unappealing; their votes would not matter; to save time; the voter skipped ballot questions; and not sure and refuse options. Interviewers chose an "other (specify)" option if the respondent's answer was not listed, and typed in a text response. Post-survey analysis showed the "other" category having the largest percentage of responses, at 33 percent.

[FIGURE 1 HERE]

Analysis of the "other" text responses allowed for coding of some responses into existing pre-programmed categories, and for creation of a "Low information" category. Examples of responses deemed to reflect a lack of information as the reason for ballot rolloff included: "Not enough information," "Not familiar with the candidates," and "Didn't feel informed enough to properly answer." The text coding also resulted in creating a second new response category of "protest/make a statement." After the "not sure" response given by 25 percent of those who said they had rolled off the ballot, the largest response at 13.9 percent was for low information. (See Figure 2 in Appendix.) Ten percent said they were not interested in the race, while 9.3 percent did not like either candidate. The same percentage said they did not vote on ballot questions. More than 6 percent combined said they skipped part of the ballot in protest or to make a statement or that their vote would not matter. Meanwhile, 10.2 percent said the ballot design was confusing, and 1.9 percent said they didn't vote certain parts to save time. Even after coding responses, 11 percent still fell into the other reasons category, and 2.8 percent refused to specify their reasons.

[FIGURE 2 HERE]

Direct comparisons of ACS demographic data by legislative district and statewide survey crosstabs are not possible. But the crosstabs provide the only information available that breaks down the undervoting population by demographics in a time frame that includes the 2011 New

Jersey legislative elections, and so bear review. Trends found in the correlational analysis hold up in crosstabs of variables of whites in the population, Hispanic ethnicity, income, sex, and age, while results differ from the correlations with variables of education level and percentage of African Americans/blacks. (See Table 6 in the Appendix.)

[TABLE 6 HERE]

First, rolloff declined as age categories increased, although the range from lowest to highest (11.2 percent for ages 65 and older to 15.7 percent for ages 18 to 29) only slightly exceeded the margin of error of +/- 3.5 percentage points. This reflects the weak relationship found in correlations and bivariate linear regression. A sizable difference in rolloff percentages was shown in Hispanic (18.9 percent) to non-Hispanic respondents (12.2 percent). Rolloff among whites (10 percent) was half that of black respondents (20 percent). The crosstabs present a stronger tie between percentage of African Americans/blacks and the undervote than do the correlations and regressions. A weak trend of undervoting being associated with lower income is seen in the crosstabs, although the rolloff level increases again among respondents with incomes of more than $150,000. One difference between crosstabs and correlations finds a negative association between rolloff and education level, while correlations produced no significant relationship. This demographic variable contained an option for “less than high school.” However, the number of respondents in that category was so small that the data point was judged to not be valid.

DISCUSSION

The disputed 2000 presidential election in Florida brought the concept of undervotes to the public consciousness (Knack, 2003, p. 1), and researchers have since focused on the phenomenon. Confusing ballot design was a factor in voided ballots in Florida in 2000, and much of the research on ballot rolloff has focused on design and technical equipment used in voting (Kimball D. C., 2005). This is often true even when research has studied correlations to minority voting or to other demographic factors (Herron, 2005). New Jersey's 2011 legislative elections provide a case in which voting machine types were consistent across legislative districts, allowing for research that focused on relationships between rolloff and demographic factors as well as electoral environmental factors, specifically lack of competitiveness. The results, finding correlational ties to demographic factors but not explanatory power, and finding ties with competitiveness, underscore the complexity of undervotes and the need for more research to understand potentially multiple underlying causes. One area not studied in the New Jersey election but ripe for future research appears to be the impact of low-information elections on ballot rolloff. In addition, survey data suggests that rolloff may be more intentional than is indicated by some research (Ansolabehere, 2005) (Knack, 2003).

Some of these findings appear at odds with past research that finds rolloff largely a function of ballot position (Augenblick, 2009). Conventional wisdom holds that undervotes increase as the voter gets farther down the ballot, and this held true from the state Senate to Assembly results. However, many findings of rolloff being extremely low at the top of the ballot are based on studies of presidential elections, which have high salience for voters. In this study, the state Senate election topped the ballot, and contests for state Assembly were just below Senate. These findings, while showing increased rolloff below the top of the ballot, still show significant rolloff of an average of 6.1 percent in the race at the top. Senate rolloff was evident in every legislative

district. Although the Assembly races are located below the Senate, they can be considered part of the top of the ballot in the sense that many senators campaign with their Assembly district mates as a team, and the three make up the district's legislative delegation. Rolloff in the Assembly races, also evident in every district, averaged 8.3 percent. The fact that so many voters would fail to cast votes in the two elections leading off the ballot is cause for further research into undervoting.

Perhaps nothing underscores the importance of such research than the finding that the outcomes of at least three close Assembly elections could have been different if most who had entered the voting booth or mailed a ballot had voted in those races. When two other districts in which the undervote could have statistically changed the outcome are included, the findings suggest that serious questions of voter representation could affect one out of eight Assembly districts. It is incumbent on political leaders to attempt to understand why a portion of the electorate would bear the costs of time, effort, and emotional investment to vote and yet not make a choice that demonstrably matters. This goes to the heart of representative government.

The findings underscore the complexity of ballot rolloff. There is no clean, definitive answer as to why the undervote occurred. But the results do confirm some relationships found in prior research and point toward areas of further investigation. Correlational analyses show statistically significant relationships in both houses between undervotes and the percentages of white population, of Hispanic population, of non-English speakers, and of people in poverty. And statistically significant correlations also exist in Assembly races with age and household income. Bivariate linear regression confirms the relationships, but they are generally weak and vanish in multivariate regression analysis. They show little explanatory power. The strongest variable, both in correlational and explanatory power, is the margin of victory as expressed in percentage

points. This evidence of electoral environmental forces relating to undervote naturally raises questions of whether other characteristics of the elections are tied to ballot rolloff. Does the amount of information known by the voter about the candidates affect rolloff? Does the level of campaign spending, which might provide information to the voter through advertising, affect rolloff? Does the presence of incumbents or challengers on the ballot affect rolloff? (Because redistricting seeks to protect incumbents and has created so many safe districts, research on the effect of incumbency on rolloff would likely require a longitudinal study involving only a few cases each election.) Is most of the undervote intentional?

Statewide survey data appear to confirm both the extent of ballot rolloff and the direction that future research should take. About 13 percent of likely New Jersey voters said they skipped voting on at least one portion of the ballot in their last election. This finding suggests self-awareness of voter behavior that runs counter to rolloff being the result of mistakes and confusion. If most of the undervote found in the survey were the result of mistakes, most of the respondents would likely be unaware that they did not vote the entire ballot and would have said that they had voted in every race. Close to 50 percent of those who said they did not vote in all races cited reasons related to factors related to the election, including not having enough information, disinterest, and dislike of the candidates or of the system. Those reasons suggest that the voter made a conscious choice to not vote. About 28 percent were unsure of the reason, could not remember, or refused to specify.

Failure of demographic variables to explain rolloff in regression analyses does not mean their role should be dismissed. Though the relationships may be weak, the findings are statistically significant and the correlations are consistent. Undervoting negatively correlates to white populations, higher household income, and age, and positively correlates to Hispanic

populations, non-English speakers, and higher levels of poverty. These findings are entirely consistent on a socio-economic level. They are also generally consistent with the results of the statewide survey, in which crosstabs of the undervote questions and demographic variables showed relationships similar to those found in the correlations. These relationships may not explain the undervote, but they are part of the phenomenon. Future research could explore whether certain demographic variables relate to electoral environmental factors in ways that create disinterest, distrust, or dissatisfaction with the election process, and in turn, lead to ballot rolloff.

CONCLUSION

In the low-salience 2011 New Jersey legislative election, undervoting was widespread and found at high levels starting at the top of the ballot. This election, without a race for president, governor, or federal legislative office on the ballot, would be expected to bring out voters who are experienced, active, and knowledgeable about the voting process. Yet voters failed to cast votes in the top races in every legislative district. This finding is different from results of studies of presidential elections, which find extremely low rolloff at the top of the ballot except when technical or design problems are present. The finding suggests that forces other than technology and poor design are at work. This is not to dismiss voting technology or poor ballot design as influences of undervoting. But the phenomenon is complex, with multiple contributing factors. District competitiveness was shown to have the strongest explanatory power, even though some relationships between rolloff and demographic factors are evident. Whether or not individual voters' makeups play some role in whether they skip certain contests, the trend in this analysis shows that the less competitive a race is, the more voters roll off on that contest.

It is rare to have a statewide election without some high-salience contest on the ballot as occurred in New Jersey in 2011, but the findings point to the need for further research in low-salience elections. Many of the New Jersey voters clearly were not failing to cast votes because of confusion or mistakes. Survey data point to voters being aware of their failure to cast votes on all parts of the ballot, and having reasons to explain such behavior. Their reasons, including dissatisfaction with the candidates or with the government or not knowing enough to make an informed choice, reflect a segment of society that is engaged in the electoral process yet disaffected at the same time. This should be of concern to elected officials and policy makers. The effect of these voters failing to cast votes, as shown in districts where undervote could have changed the election's outcome, has implications for representative democracy that warrant further study.

APPENDIX

Table 1. Frequency and percent of ballot rolloff
2011 New Jersey Legislative District (LD) elections
Senate (Sen) and Assembly (Assm)

NJ LD	Rolloff # Sen	Rolloff % Sen	Rolloff # Assm	Rolloff % Assm
1	2,269	4.8%	3,200	6.7%
2	1,780	3.8%	3,541	7.6%
3	2,139	4.5%	2,671	5.6%
4	2,185	5.4%	2,688	6.6%
5	2,382	7.1%	2,724	8.1%
6	2,616	6.0%	2,934	6.8%
7	1,932	3.9%	3,672	7.4%
8 *	13,371	37.4%	2,923	8.2%
9	2,670	5.1%	4,127	7.9%
10	2,126	4.5%	3,210	6.8%
11	1,380	3.7%	3,258	8.8%
12	1,539	4.8%	1,900	6.0%
13	1,497	3.6%	2,280	5.5%
14	1,416	2.9%	2,942	6.0%
15	1,103	3.3%	2,222	6.6%
16	1,219	3.1%	1,868	4.7%
17	967	3.8%	1,424	5.7%
18	1,221	3.6%	2,122	6.3%
19	1,462	5.0%	2,489	8.5%
20 **	1,645	9.0%	4,033	22.2%
21	1,823	4.2%	3,656	8.5%
22	1,834	6.6%	2,141	7.7%
23	2,071	5.6%	3,210	8.6%
24	1,063	3.2%	1,818	5.5%
25	1,904	5.7%	2,583	7.7%
26	2,682	7.9%	3,392	9.9%
27	1,051	2.3%	2,925	6.5%
28	1,261	6.1%	2,235	10.9%
29	1,395	11.2%	2,239	18.0%
30	2,015	5.7%	2,132	6.0%
31	2,994	15.4%	4,688	24.1%
32	1,178	5.5%	2,414	11.2%
33	2,795	10.7%	5,733	21.9%
34	1,281	5.6%	1,952	8.6%
35	1,341	6.5%	2,180	10.6%
36	2,191	6.9%	3,542	11.1%
37	1,730	5.0%	2,524	7.2%
38	1,948	4.4%	3,006	6.8%
39	3,657	8.5%	4,696	10.9%
40	3,506	8.8%	3,569	8.9%
Statewide	86,639	6.1%	116,855	8.3%

* Senate race uncontested
** Only one Republican challenger in Assembly race

Table 2. Correlations between ballot rolloff and demographic/competitiveness variables
2011 New Jersey state Senate elections

Variable by legislative district	Pearson Corr.	Sig.	Significance level
Percentage of whites in population	-0.335	0.04	0.05
Percentage of blacks/African Americans in population	0.219	0.18	
Percentage of Hispanics in population	0.442	0.01	0.01
Percentage of non-English speaking population	0.414	0.01	0.01
Percent older than 25 with BA degree or better	-0.176	0.28	
Median household income	-0.302	0.06	
Percentage of people in poverty	0.456	0	0.01
Median age	-0.368	0.02	0.05
Number of males per 100 females	0.175	0.290	
Senate victory margin (percentage points)	0.631	.000	0.01

Table 3. Correlations between ballot rolloff and demographic/competitiveness variables
2011 New Jersey state Assembly elections

Variable by legislative district	Pearson Corr.	Sig.	Significance level
Percentage of whites in population	-0.465	0.002	0.01
Percentage of blacks/African Americans in population	0.305	0.056	
Percentage of Hispanics in population	0.642	.000	0.01
Percentage of non-English speaking population	0.612	.000	0.01
Percent older than 25 with BA degree or better	-0.226	0.162	
Median household income	-0.415	0.008	0.01
Percentage of people in poverty	0.531	.000	0.01
Median age	-0.445	0.004	0.01
Number of males per 100 females	0.163	0.314	
Assembly victory margin (percentage points)	0.751	.000	0.01

Table 4. Regression analyses, New Jersey state Senate elections, 2011			
Demographic and competitiveness variables and rolloff percentage			
Variable by legislative district	Coefficient	Sig.	Adjusted R Square
Percentage of whites in population	0.058	0.818	0.476
Percentage of blacks/African Americans in population	0.020	0.664	
Percentage of Hispanics in population	-0.072	0.880	
Percentage of non-English speaking population	0.106	0.545	
Percentage of people in poverty	0.273	0.108	
Senate victory margin	0.099	0.001	
Median household income	.000	0.373	0.383
Percentage of people in poverty	0.186	0.185	
Senate victory margin	0.076	0.002	
Percent older than 25 with BA degree or better	0.002	0.981	0.315
Median household income	-.000	0.839	
Median age	0.005	0.969	
Number of males per 100 females	0.045	0.684	
Senate victory margin	0.087	0.001	
Bivariate: Rolloff and victory margin			
Senate victory margin	0.092	0.000	0.382

Table 5. Regression analyses, state Assembly elections, 2011			
Demographic and competitiveness variables and rolloff percentage			
Variable by legislative district	Coefficient	Sig.	Adjusted R Square
Percentage of whites in population	-0.120	0.321	0.324
Percentage of blacks/African Americans in population	-0.129	0.317	
Percentage of Hispanics in population	0.050	0.508	
Percentage of non-English speaking population	-0.095	0.359	
Assembly victory margin	0.097	0.002	
Median household income	0.000	0.893	0.550
Percentage of people in poverty	0.168	0.420	
Assembly victory margin	0.067	0.000	
Percent older than 25 with BA degree or better	0.090	0.380	0.539
Median household income	-.000	0.232	
Median age	0.014	0.940	
Assembly victory margin	0.169	0.000	
Males per 100 females	0.029	0.786	0.327
Percent older than 25 with BA degree or better	-0.008	0.813	
Median age	-0.011	0.932	
Assembly victory margin	0.086	0.001	
Bivariate: Rolloff and victory margin			
Assembly victory margin	0.191	0.000	0.553

FIGURE 1

Frequency chart, Stockton Polling Institute poll of 800 likely New Jersey voters, October 2012

BALLOTQ

In the last election that you voted in, did you cast votes for every office or question on the ballot, or did you not cast votes on every part of the ballot?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VOTED ON EVERY OFFICE OR QUESTION	665	82.0	82.0	82.0
	DID NOT VOTE ON EVERY OFFICE OR QUESTION	103	12.7	12.7	94.7
	NOT SURE/DON'T KNOW/CAN'T REMEMBER	41	5.1	5.1	99.8
	REFUSE	2	.2	.2	100.0
	Total	811	100.0	100.0	

FIGURE 2

Frequency chart, Stockton Polling Institute poll of 800 likely New Jersey voters, October 2012

BALLOTQA_REASON

In your own words, why did you not vote for every office or question on the ballot?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BALLOT DESIGN WAS CONFUSING	11	1.4	10.2	10.2
	NOT INTERESTED IN RACE	11	1.4	10.2	20.4
	DID NOT LIKE EITHER CANDIDATE	10	1.2	9.3	29.6
	PROTEST/MAKE A STATEMENT	2	.2	1.9	31.5
	VOTE WOULD NOT MATTER	5	.6	4.6	36.1
	TO SAVE TIME	2	.2	1.9	38.0
	DID NOT VOTE ON BALLOT QUESTIONS	10	1.2	9.3	47.2
	OTHER (SPECIFY)	12	1.5	11.1	58.3
	NOT SURE/DON'T KNOW	27	3.3	25.0	83.3
	REFUSE	3	.4	2.8	86.1
	LOW INFORMATION	15	1.8	13.9	100.0
	Total	108	13.3	100.0	
Missing	System	703	86.7		
Total		811	100.0		

TABLE 6

Table 6. Percent who said they did not vote every part of ballot From demographic crosstabs (Stockton Polling Institute)	
Variable	Rolled off
18 to 29	15.7%
30 to 49	14.0%
50 to 64	11.8%
65 and older	11.2%
Hispanic	18.9%
Non-Hisanic	12.2%
White	10.0%
African American/black	20.0%
Less than $50,000	15.0%
$50,000 to less than $100,000	13.4%
$100,000 to $150,000	10.1%
More than $150,000?	12.8%
High school graduate	17.9%
Some college	11.0%
Four-year college or higher	11.4%

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