

Assessing the Efficacy of Early Voting Access on Indian Reservations: Evidence from a Natural Experiment in Nevada

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Abstract: An emergency legal injunction in Nevada granted two Indian reservations on-site early voting locations in the 2016 general election. These locations were two of four remote reservations participating in an academic survey to examine Native attitudes toward government and voting. The granting of only two locations out of the four creates reasonable conditions to treat the four cases as a natural experiment in on-site early voting. These cases also add to very limited existing knowledge about factors affecting voting behavior on Indian reservations and the impact of early voting sites in rural locations. We find that on-site early voting substantially increased voter turnout in the general election on the two reservations that received access in comparison to the two without satellite voting. We find little evidence that the reservations that received the voting sites were particularly likely to have high turnout in 2016. These findings provide supportive evidence that reducing the cost of voting by providing convenient locations and longer periods to cast a ballot increases voter turnout, including in groups with limited means to vote and low government trust.

Keywords: Native Americans, voting behavior, trust, rural voting, early voting, satellite voting

Introduction

On October 3, 2016, Judge Miranda Du of the United States District Court of Nevada issued an emergency injunction establishing satellite centers for early voting on the Pyramid Lake and Walker River Indian Reservations for the 2016 general election (*Sanchez v. Cegvaske* 2016). Judge Du ruled that the state and counties had violated Section 2 of the 1965 Voting Rights Act by failing to provide the reservations with equal access to the vote. She ruled that individuals on the reservations faced an “abridgement” of their voting rights due to unequal access caused by travel distance combined with economic and socio-demographic factors (Schroedel and Saporito 2017).

This ruling created the conditions necessary for a “natural experiment” examining the impact of early voting sites on Native American turnout in the 2016 general election. It allows us to compare turnout on four northern Nevada reservations, two that gained early voting satellites and two that did not gain early voting satellites. The populations on the Duck Valley and Yerington Reservations are quite similar to those on the Pyramid Lake and Walker River Reservations, but they did not get the “treatment effect” of gaining early voting satellites. We also draw upon interviews and survey research from the reservations, which allow us to bridge qualitative and quantitative approaches in our natural experiment (Brady and Collier 2004).

Voting, as Aldrich (1993) noted, is a “marginal activity,” that drops when the cost is high. Native Americans living on reservations in the West arguably face higher voting costs than any other group in the country. Attorney General Eric Holder went so far as to describe the barriers faced by Native Americans as “not only unacceptable, but outrageous” (D’Oro 2014). Native Americans face the same conditions that reduce electoral participation among other minority populations, as well as additional barriers related to the geographic isolation of

reservations (Schroedel and Hart 2015). They often must travel very long distances and go to “border towns” with histories of racial animus in order to register and vote (Massey 2015a; Massey 2015b; United States Commission on Civil Rights 2011). This is the first study examining whether reducing the “cost” of voting has a measurable impact on Native voting on reservations.

Even small increases in distances to polling locations or ballot drop boxes has been found to decreased turnout (Collingwood, McGuire, O’Brien, Bair, and Hampson 2018; Gimpel and Schuknecht 2003; Haspel and Knotts 2005; McNulty, Dowling, and Ariotti 2009). While one might expect reducing travel costs would result in higher levels of participation, the results have been mixed at best. Most studies have found a substitution effect in which high propensity voters switch from Election Day voting at polling places to some form of convenience voting, such as early voting at satellites (Berinsky 2005; Gronke 2008; Neeley and Richardson 2001). This research breaks new ground because the target population is low propensity voters who have very high travel costs to vote. We test in a natural experiment setting whether altering the cost of voting low propensity voters, holding other factors constant, can result in increased electoral participation.

Our study is divided into three sections. The first section lays out our theoretical framework, showing how the “calculus of voting” model applies to Native American voting on reservations. The model assumes that citizens evaluate the costs and perceived benefits of voting (Downs 1957; Gronke 2008; Niemi 1976: 117). In assessing the “cost” side of the calculus, we consider both the personal attributes of potential voters, as well as the travel distance barrier. We also explain why voting by mail is not a viable option for Native Americans on reservations. Then we turn our attention to the “perceived benefit” part of the calculus. An individual’s sense

of political efficacy and political trust affect whether one believes they are likely to benefit from participating in politics (Anderson 2010; Morrell 2003; Zmerle and van der Meer 2017) and we provide survey evidence showing these generally are not present in our target population. In the second section, we describe the natural experiment and show that our “treatment” and “control” reservations are roughly comparable. In the final section, we present results that are consistent with the calculus of voting—if voting is made easier, low frequency voters from reservations participate at higher rates, even when the perceived benefits remain unchanged. We compare turnout data from the four reservations and test for significance using difference of means tests and fixed effects regressions.

The Calculus of Voting for Native Americans on Reservations

Individual characteristics, as well as impediments to access, have clear theoretical and empirically-demonstrated impacts on turnout (Rosenstone and Hansen 1993). Every variable that works against voting participation is present in reservation populations: physical distance, physical impedance, low socio-economic status, low sense of political efficacy, and lack of political trust. We outline these conditions in this section, drawing upon novel survey results to bolster our claims.

The decision to vote has been conceptualized in a simple model ($R = PB - C$) where R , the reward that one gets from voting, is a function of PB , the perceived difference in benefits from the electoral competitors, minus C , the cost of voting (Downs 1957). Revised versions of this “calculus of voting” added a D term, ($R = PB - C + D$) to capture the psychological or social benefits of voting as an expressive act (Riker and Ordershook 1970). Put simply, Native populations on reservations have very high C and low perceived B and D .

Costs of Voting

Socio-demographic and economic status has a major effect on political participation (Bartels 2009; Wolfinger and Rosenstone 1980). Weeks (2013) found that individuals whose income places them below the poverty line are “roughly half as likely to vote in presidential elections and a third as likely to vote in mid-term elections as people at the top.” Native American reservations are among the poorest areas within the United States (Kaufman, Dicken and Williams 2017). Data from the American Community Survey (U.S. Census Bureau 2018) shows that the poverty rates among the people living on the four reservations are roughly twice the national average. Twenty-five percent of Pyramid Lake Reservation residents, thirty-one percent of Walker River residents, and approximately twenty-three percent of individuals on the Duck Valley and Yerington live below the poverty line. Further compounding the problem of poverty is the fact that educational attainment among Native Americans on these four reservations is very low.¹ A Senate report issued as part of the 1982 renewal of the Voting Rights Act identified socio-demographic and economic factors as relevant in voting rights litigation (U.S. Senate Report).

Reservations typically are located in rural areas, which means their travel distances are much higher than most voters encounter. Figure 1 shows GIS mapping of the routes from the main population centers of the four reservations to their nearest in-person voting sites. Nixon on the Pyramid Lake Reservation is 48 miles from voting sites in Reno. Reno is the closest place with access to in-person or early voting since the county previously closed an Election Day

¹ According to the 5-year estimate of the American Community Survey, the level of educational attainment for Native Americans in these counties (Elko, Churchill, Washoe, Lyon and Mineral) is extremely low. The percentages of Native American men who have not graduated from high school, including those with GEDs, range from 4.4% to 7.3% and among women from 7.3% to 17.9%. The percentages of Native American men with college degrees or better ranges from 1.2% to 9%, while among Native American women, the range is from 2.3% to 6.5%. The comparable overall rate in Nevada is 23.7% (U.S. Census Bureau 2018).

polling place in Nixon. The situation is similar on the Walker River Reservation, where the town of Shurz is 34 miles from the county seat in Hawthorne. People at the Duck Valley Reservation, which also has no Election Day polling place, have to travel 100 miles to the county seat in Elko for in person voting. Residents of the Yerington Reservation need to drive 8.5 miles into the town of Yerington for in person or early voting access.

The direct cost of travel (distance, gas, travel time) in at least three of the four of these cases is extraordinarily high. The 2016 American Community Survey reports that the average gross income in Nevada is \$53,094. However, the average gross income is \$26,119 among Native Americans in the study (U.S. Census 2018). According to the Department of Energy, a Nevada resident paid \$972 on average for a years' worth of regular gasoline in 2016 (U.S. Department of Energy 2016). However, the average resident of the state lives in Las Vegas or Reno where travel distances are much shorter, and gasoline is somewhat cheaper. Assuming individuals have access to a vehicle, which is not a safe assumption, travel cost is much higher, and the distances required much farther on rural reservations. For low income individuals, the cost of gasoline and taking time off from work is a much greater relative burden.

Even if Native voters have the resources to make it to the polls, they may be reluctant to go to the towns with on-site voting. In many states, Native American populations must enter predominantly white county seats to register or vote (Massey 2015a; McCool, Olson, and Robinson 2007; McDonald 2010). Long standing mistrust between Native American communities and non-Native populations in reservation border towns is well documented (U. S. Commission on Civil Rights, 2011). Voter intimidation efforts against Native Americans often go unnoticed because the populations are small and geographically distant from political and media centers.

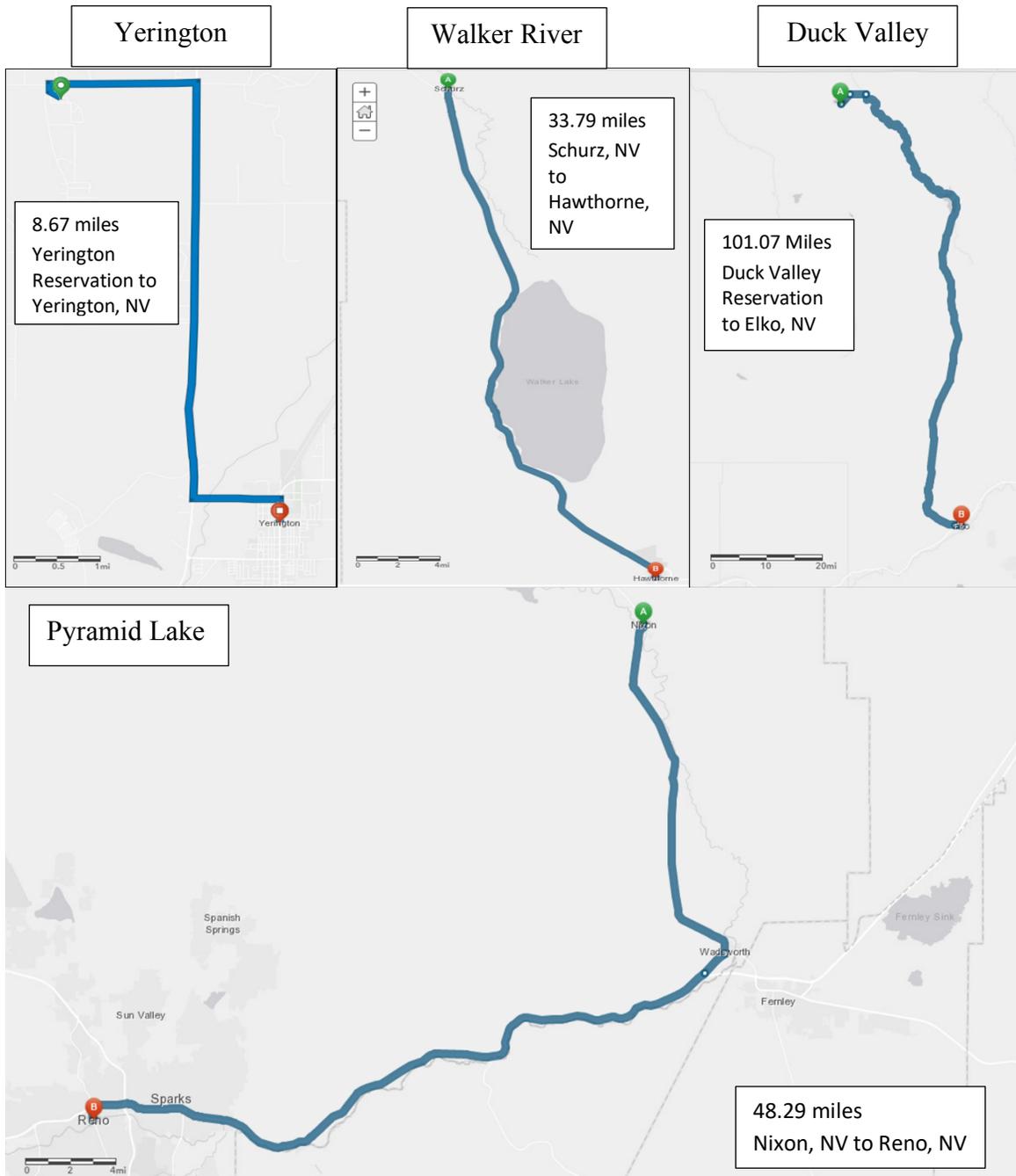


Figure 1: Travel Distance to Yerington, Walker River, Duck Valley, and Pyramid Lake Reservations

In another Nevada study, Gimpel, Dyck and Shaw (2006) found that distance was a major factor in voting decisions in Clark County, which includes the urban core of Las Vegas, but also large, sparsely populated areas that are primarily desert. They found that non-voting increases with distances up to ten miles, but some voters switch to voting by mail under these

circumstances. Although often touted as convenience voting reform, voting by mail is not foolproof. Based on a major nationwide study, Stewart (2010) estimated that slightly more than 20% of all attempts to vote by mail are lost at some point in the pipeline. In a more limited study, Yasinac (2012) found widespread loss of mail-in ballots in Minnesota during the 2008 election. A recent study in Florida found that ballots from mail voters were 10 times more likely to be rejected than votes cast in person.² But even beyond these general problems, voting by mail is particularly fraught on reservations. Most reservations do not have home mail delivery and people get their mail at post offices, which tend to have limited hours.³ Frequently, multiple families share post office boxes to save money, which increases the likelihood of mail being lost or misplaced.

Perceived Benefits of Voting and the D Term

There are many factors that can impact the perceived benefit of voting. A low sense of political efficacy and lack of trust that your vote will be properly counted is certain to be among influences that negatively impact this calculus. With a few exceptions, low trust in Native populations has often been assumed but rarely studied (Evans-Campbell 2008). In 2016, the Kellogg Foundation provided funding for the first large scale survey designed to determine whether Native Americans confront substantial barriers in gaining access to the ballot. As part of that effort, researchers working with the Native American Voting Rights Coalition (NAVRC), Tribal leaders, and the Inter-Tribal Council of Nevada, surveyed more than 1,500 Native Americans living on reservations in Nevada and South Dakota.⁴ The results paint a picture of

² <https://www.miamiherald.com/news/politics-government/state-politics/article218654810.html>

³ A recent Supreme Court ruling in North Dakota ruled that voters could not use P.O. Boxes as voting addresses (*Brakeville v. Jaeger*, 2019)

⁴ The principal author was part of the NAVRC survey team and has permission to use the data, some of which was considered in the *Sanchez v. Cegvaske* case.

low trust in the administration of elections on reservations compared to the general population in these states (Native American Voting Rights Coalition 2018). Related research suggests that lack of trust in election administration predicts a significantly lower probability of voter turnout on these reservations.

The 2016 Survey of the Performance of American Elections (SPAE) asks respondents who report voting how confident they are their vote was counted as intended, a question very similar to the NAVRC survey item we use to measure trust in election administration.⁵ Nearly three-quarters (73%) of Nevada SPAE survey respondents said they had complete confidence in their vote being counted. However, less than half of Native American respondents in the NAVRC survey stated they had complete trust in any form of voting. In-person voting at a polling place on Election Day had the highest level of complete trust (45.4%), but the forms of voting that gave some degree of discretion and control to local election officials garnered far lower levels of complete trust: 30.3% for dropping off the ballot at the county election official's office and 28.4% for voting by mail (Native American Voting Rights Coalition 2018).

Items on the NAVRC survey allow scholars to directly measure the impact of distrust in the administration of elections on the decision to vote among respondents from the four reservations. In related research, the independent effect of trust on the decision to vote was tested (Berg et al. 2018). After controlling for the core predictors of turnout such as age, sex, and educational attainment, the estimates show that lacking “complete trust” that one's vote will be counted predicts a 25-percentage point decrease in voting, on average. The marginal effect of trust on turnout is consistent across all four studied reservations.

⁵ For data and full report on 2016 SPAE survey see: Charles Stewart “2016 Survey of the Performance of American Elections”, <https://doi.org/10.7910/DVN/Y38VIQ>

Taken together, the survey findings contribute to the broader understanding of the voting environment and calculus faced by the Native Americans living on these reservations. These individuals generally have low political efficacy and low trust in elections, especially those not cast in person. These characteristics contribute to low voter turnout.

Challenges to Identifying the Impacts of Voting Interventions

Although it may seem obvious that lowering the costs to voting by providing early access or on-site voting locations would increase turnout, existing research has not been able to pinpoint the precise effects of these interventions. Many states have made changes in the administration of elections to make it easier to vote. For example, Nevada's establishment of early voting satellites in non-traditional sites, such as shopping centers. Drawing conclusions about the impact of reforms is challenging because many include several different intertwined elements; all of which are designed to increase access. Measuring the impact is also difficult because most electoral districts do not distinguish whether votes were cast early or on Election Day, or whether they were cast in person or by mail (Gronke et al. 2008). These complications are significant and require that one be very careful in making assertions about broad voting categories. Accordingly, we make limited claims that our results refer to early, on-site voting on rural Indian reservations.

Related research has found modest increases in voting when a jurisdiction adopts early in-person voting centers, but much of the increase is among sectors of the population that already have generally higher levels of turnout.⁶ Some researchers have found increases in the turnout among infrequent voters when such non-traditional sites are used on Election Day (Stein and

⁶ However, one Indiana study did find an increase among voting by infrequent voters when early voting was allowed at satellite sites (Losco, Scheele, and Hall 2010).

Vonnahme 2008). In our study, we cannot distinguish in the voting data between effects due to the timing of the treatment (early versus Election Day) from those caused by the location of the treatment (on reservation). Accordingly, we argue our results reflect the particular conditions of early, on-site voting on reservations.

A Natural Experiment in Early, On-Site Voting on Indian Reservations

Natural experiments are valued in the social sciences because they mimic the conditions of laboratory experiments that offer a stronger basis for causal claims linking the independent to dependent variables (Campbell 1969). In contrast, most research in the social sciences, including on the topic of voter participation, is observational. We typically cannot identify whether the intervention to increase voting was non-random—if it was in fact adopted because of increased demand for voting (which would over-state the effect of the intervention) or to bolster areas of particularly low participation (which may understate the effect of the intervention). In the case of natural experiments, however, researchers can claim that the treatment and control groups were assigned “as if random” with respect to important explanatory characteristics (Dunning 2008).

The conditions for a natural experiment require: 1) “the response of experimental subjects to a ‘treatment’ ... is compared to the response of other subjects to a ‘control’ regime, often described as the absence of a treatment”; and 2) assignment into treatment and control groups is random with respect to the expected outcomes or the treatment conditions (Dunning 2008, 282).

Treatment and Control Groups

For a valid natural experiment, the “treatment” and “control” groups must be comparable on the variables relevant to the experiment outcome. While no real-world settings are identical,

we demonstrate in this section that the four reservations we study are similar with regard to the costs and benefits of voting, and thus their likely participation rates.

The four reservations have very similar socio-economic characteristics. As discussed above, 23-31% of individuals on these reservations live below the poverty line. Regarding comparability, the poverty rates in fact work against our hypothesis. Pyramid Lake (25%) and Walker River (31%) have higher rates of poverty than the control reservations (Duck Valley and Yerington-23%) (U.S. Census Bureau 2018). Educational attainment is also similar across the groups. In Mineral, Churchill, and Lyon County, wherein the Walker River Reservation lies, the average high school graduation percentage (not including those earning GEDs), for Native Americans is 31.2%. In Washoe County, home to Pyramid Lake Reservation, it is 29.9%. In Elko County, it is 38.8%. The percentage in Lyon County, home to Yerington, is 32.6%. As a point of comparison, according to the Nevada Department of Education, the average high school graduation rate in all of Nevada is around 75%. If low socio-economic status leads to lower voting rates, we should in fact expect lower participation in Pyramid Lake and Walker River on average (Rosenstone and Hansen 1993).

On all of the reservations, aside from Yerington, the travel distance may be considered prohibitive. Prior to the “treatment” Walker River and Pyramid Lake voters had to travel 34 and 48 miles one way, respectively, to reach an early voting sites. For Duck Valley residents, the travel distance was 100 miles each way, while Yerington residents had a comparatively short trip of about 9 miles each way. Residents need to have access to a vehicle, gas money, and the time to travel for the purpose of a vote. Moreover, they often must enter towns where there is a history of animosity with local residents.

Culturally, the reservations are quite similar. Northern Paiutes live on three reservations, while Duck Valley Reservation includes Western Shoshones and Northern Paiutes. The Northern Paiutes in Nevada are the descendants of people who lived in that territory for millennia in some accounts for as long as 9,000 years. The Western Shoshone, who make up part of the people living at the Duck Valley Reservation are the descendants of indigenous peoples who lived in Idaho and Oregon as well as northern Nevada. Both groups have lived together and inter-married on the Duck Valley Reservation for nearly 140 years (Sho-Pai Tribes 2018). In the early 1890s, the Western Shoshone, along with other tribes from the Plains and Southwest, chose to follow the teachings of the Paiute spiritual leader Wovoka, who had a religious revelation and encouraged adherents to follow what became known as the Ghost Dance religion (Barnes 2015: 210). Culturally both groups still are quite similar, sharing a deep connection to the land and ties to the environment (Anonymous 2015).

“As if” Random Assignment

The key feature of a natural experiment is an exogenous source of variation in treatment, and comparable groups among the treated and untreated groups. We argue that the selection of reservations into the early, on-site voting “treatment” created by the injunction was exogenous with respect to features associated with voting participation. In this case, all four reservations were interested in and pursued early, satellite voting sites but only two received them.

In August 2016, Native Americans living on the Pyramid Lake Reservation in Washoe County and those living on the Walker River Reservation in Mineral County asked county officials and the state to establish early voting satellites on their reservations. After being turned down, tribal members sought a preliminary injunction to force the counties to provide them with satellite centers equivalent to those provided in other parts of the state. The Walker River and

Pyramid Lake Reservations received an emergency injunction requiring that the state establish early voting sites for the November 2016 election (*Sanchez v. Cegvaske*, 2016).

Individuals at the two other reservations took steps to join the lawsuit but, for reasons exogenous to political participation, could not be included. Yerington tribal leaders took steps to join the lawsuit but were not able to submit the required documents by the deadline. Residents at Duck Valley Reservation discussed joining but chose not to engage in the litigation due to concerns their participation may cause problems for the legal status of the injunction because the reservation includes parts of Idaho.

As result of this ruling, satellite centers for early voting were established on the Pyramid Lake and Walker River Reservations. However, the state refused a request by the Inter-Tribal Council of Nevada that satellite early voting centers be established on the other reservations within the state. The highly similar conditions for the reservations experiencing the application of the “treatment” (the placing of an early voting site on the reservation) and those not receiving an early voting site creates a strong case for analyzing these cases as a natural experiment in early voting (Campbell 1969).

Voting Conditions in Nevada

Nevada allows citizens to register online at the Secretary of State’s official website, via mail or in-person at various government offices (local election, department of motor vehicles and public assistance offices). Online registration requires a person to have a number from either valid driver license or DMV-issued identification card. While registration is relatively simple, particularly if one has access to the internet and the required identification, some people on reservations lack both internet access and the required identification. The NAVRC survey showed that people in Native communities faced a range of logistic and administrative

challenges in trying to register and vote with travel distance being the greatest. The state of Nevada has not exhausted its available tools to reduce voting costs on reservations. For example, Nevada voting law (NRS 293.5237) allows counties to send field registrars to individuals' homes to register them if they are ill, disabled or "for other good cause." However, this is only available when there are "volunteer registrars." NAVRC surveyors were not able to find any evidence that volunteer registrars have ever been made available to travel to reservations.

In the lead-up to the 2016 election, the state opened large numbers of satellites for registration and voting. Prior to the emergency injunction, however, there were none on the reservations. Many of the satellites were established in places where voters already had access to different forms of voting, including in affluent Incline Village on the north shore of Lake Tahoe.⁷

Results of the Natural Experiment

Our expectations were that early, on-site voting access should increase participation on the treated reservations. The mechanisms we expect to drive up turnout are reducing the costs of voting by making it available throughout the general election early voting period, drastic reductions in the travel distance, and increasing voter trust by placing voting sites on their home reservations. These factors are intertwined and we have no direct way to separately measure these mechanisms in the 2016 general election.

As part of the natural experiment, we examined both longitudinal and cross-sectional data. While we expect to see greater increases in voting on both the Pyramid Lake and Walker River Reservations that received early voting site, in comparison to previous years and the other two reservations without satellite sites, we also expect to find a larger increase at Pyramid Lake,

⁷ The median income of Incline Village in the period 2007-2011 was \$93,831 (American Communities Survey).

given its residents had never had any access to voting on the reservation prior to the establishment of the satellite voting site. We also examine voter participation in the primary elections on 2016, which were held prior to the injunction, and thus reveal anticipated interest in voting in the general election in 2016.

Data Description

Our dataset includes aggregate vote totals for primary and general elections between 2004 and 2016. The four reservations are located in four counties: Lyon, Mineral, Washoe, and Elko County.⁸ For each of the reservations, we include data only from national level elections held every two years (including presidential and Congressional elections, primary and midterm elections).

Providing comprehensive reservation data of similar composition for each participant was challenging. For example, although Yerington Reservation stretches across three precincts in Lyon County, these precincts (#4-#6) are not exclusively reservation territory. As such, those data were dissected to distinguish between reservation versus non-reservation voting data by pulling only from the seven identifiable streets that make up the reservation: Nobe St., Wye St., Toza St., Taboosi Way, Paiute Dr., Pinenut Dr., and a section of Route 101. Duck Valley Reservation is centered in one precinct (#29) within Elko County. Walker River Reservation falls within precinct 11 of Mineral County. These data may include votes from non-reservation residents but given that Mineral County is rural, we do not expect that vote totals were significantly altered by non-reservation residents within precinct 11.

The voting data in all cases was provided online by the Office of the Secretary of State of Nevada. This online data bank gives the vote totals for each candidate from a given precinct for a

⁸ As noted earlier, part of the Duck Valley Reservation is in Idaho, although most of the population lives in Nevada.

specified race without distinguishing between early voting, absentee voting, and in-person Election Day voting. Importantly, the vote tabulation conditions and procedures did not change across the years (2006-2016) or election types (primary, general, midterm, presidential) in our sample. Thus, we have no reason to expect the imprecision in vote totals would bolster the results we observe. In fact, data error should work against our expectations if early, on-site voting access aided only those individuals living on reservation and vote totals were unchanged in the surrounding, non-reservation population. Non-reservation votes would thus “dilute” the impact of the early, on-site intervention.

The population data to estimate per capita voter turnout at the reservations faces similar constraints. The reservations under examination are counted as part of the decennial Census but estimates between Census years are not available. We have projected them based on known data.⁹ Despite these challenges, the data upon which the analysis is made represents the best attempt ever to isolate Native American reservation voting data in Nevada from the larger county and state data pools.

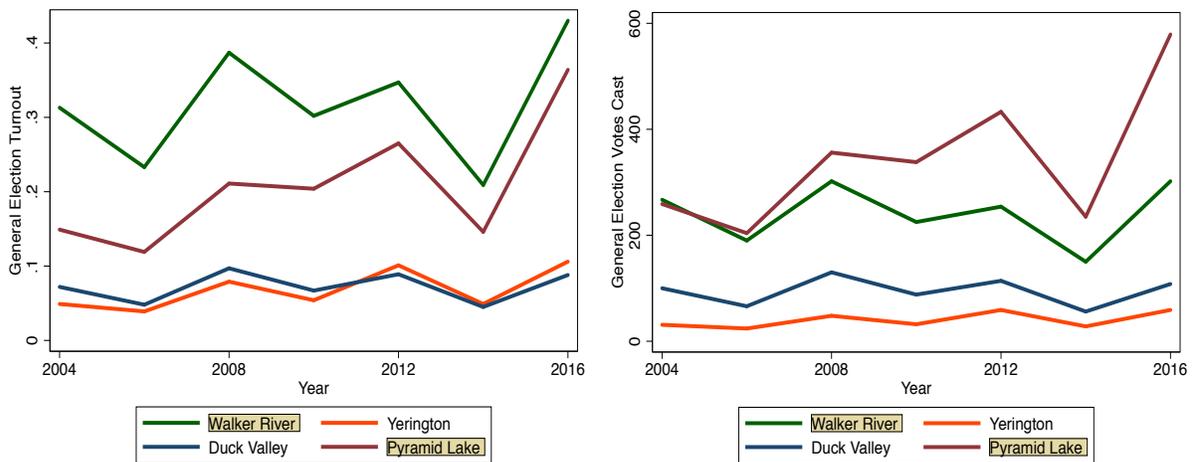
Data Analysis

We approach the data analysis in three straightforward ways to examine the effect of early voting sites on voter turnout in the four reservations under study. First, we examine the data on voter turnout (voters per capita) and vote counts (total number of votes) visually in graphs. Second, we perform t-tests of the differences in means between reservations with on-site early voting access and those without. Third, we run multivariate fixed effects regressions that control for reservation- and election-specific factors to see the impact of early voting access on voter

⁹ Yerington population estimates include the Yerington Reservation and Campbell Ranch. Duck Valley estimates are available from Census block 9401 in Nevada.

turnout. We estimate results with both voter turnout and vote count for robustness, and to reduce concerns about the quality of the population data. Throughout these analyses we compare the impact of early voting sites in the general election to turnout in primary elections without early voting access to be sure that the chosen reservations were not simply more inclined to vote at increased levels in the 2016 election.

Figure 2: Voter Turnout and Vote Count in Four Nevada Indian Reservations, 2004-2016



Notes: Reservations with early voting sites are shaded in the legend. Full data shown in Appendix Table A1.

In Figure 2 we plot voter turnout in the four reservations over time, with the reservations with early voting sites shaded in the legend. Figure 1 provides visual confirmation of a marked increase in the voting on the two reservations with early voting sites, Walker River and Pyramid Lake. Moreover, as expected the sharpest increase appears to be on Pyramid Lake that previously had never had access to voting on the reservation. Walker River saw a 19% increase in per capita voter turnout and a 16% gain in votes cast between the 2012 and 2016 presidential elections. Pyramid Lake saw a rise of over 27% in per capita turnout and 25% in votes cast during the same period. Across the full time period, turnout from the Walker River during presidential election years has fluctuated, ranging from a low of 254 votes cast in 2012 to a high of 302 in both 2008

and 2016.¹⁰ In contrast, Pyramid Lake has seen a steady increase in voter turnout since 2004 (from 259 to 579 in 2016), although the jump between 2012 and 2016 is substantially larger than in any of the previous periods. Turnout on the other two reservations (4-11% for Yerington and 5-10% for Duck Valley) remained low and flat throughout the entire period studied.

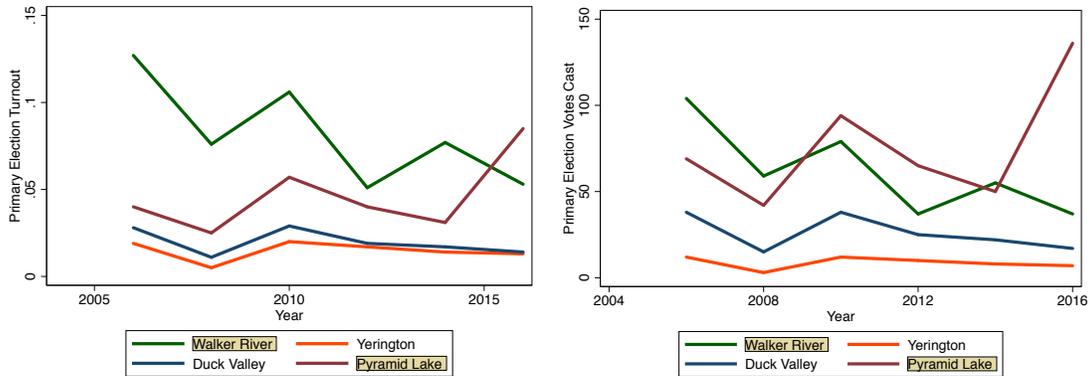
As expected, turnout in midterm elections is much lower than in the general election years. Accordingly, we conduct the statistical tests on presidential election years alone and all elections pooled together. Perhaps the most interesting point is that the 2014 off-year turnout on the reservations was notably lower than in all other off-years with one exception (Yerington was slightly lower in 2006 than in 2014). If the low turnout in 2014 was an indication of disaffection and distrust, as was found in the NAVRC survey research, the increases in turnout in the 2016 general election at Walker River and Pyramid Lake are surprising—perhaps providing evidence that on-site early voting center increased participation.

Figure 3 shows the trends in turnout during primary elections. Generally speaking, we see very little indication of enhanced interest in primary voting over time in the reservations under examination. Three out of four reservations had falling or flat participation in primary elections in the period 2006-2016. In fact, Walker River, which saw a 16% increase in voting in the 2016 general election had a major dip in participation in the 2016 primary elections. The exception to this pattern is Pyramid Lake, which has seen a spike in participation in the 2016 primary. We take the declining participation in primary elections, including falling participation in one of the treated reservations, Walker River, to be further evidence of the voter disengagement evident in the NAVRC surveys. Moreover, the primaries act as a baseline estimate for anticipated

¹⁰ The lowest per capita voter turnout is projected at 31% in 2004. 2016 had the highest per capita turnout in 2016 at 43%. The population in Walker River decreased between 2008 and 2016, rendering a 302 vote total a higher per capita value.

participation in the 2016 election. We do not see rising engagement in Walker River. This lends some credence to our assertion that the early voting sites were not requested in response to rising interest in political participation in the treated reservations.

Figure 3: Primary Election Turnout and Vote Count, 2006-2016



Notes: Reservations with early voting sites are shaded in the legend. Full data shown in Appendix Table A1.

T-Test Results

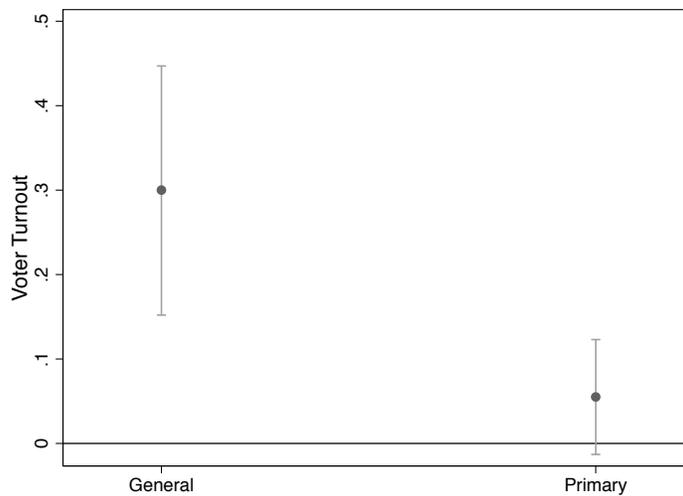
We examine the statistical significance of the effect of early voting sites with the simplest hypothesis test, the difference in means test, or t test. Most investigations of political phenomena do not meet the criteria of a natural experiment in which the treatment and control groups are selected as if by random chance. Accordingly, most political analysis requires rather complex multivariate regression analysis that attempts to limit threats to validity and account for non-random sorting of treatment and control groups. With natural experiments, on the other hand, the t test is a reasonable starting point because the selection mechanism is thought to be exogenous and the groups comparable.

We begin by plotting results for the 2016 presidential election. In this very limited sample (four cases over two elections in one year), we show the difference in voter turnout in the “treated” in comparison to the “control” reservations. The results of our t tests show

approximately 30% higher turnout in the reservations with early, on-site access in comparison with the reservations without this access. On the right side of Figure 3, we show the difference in primary voting in 2016 for the sites that received early voting access and those that did not. Recall that the early voting sites were only available for the general election. Thus, we should not see an impact of early voting sites in the primary election. This is precisely what we see in Figure 4, with changes in primary turnout in early voting sites statistically indistinguishable from those that would not receive voting sites in the 2016 general election.¹¹

These estimates accord with on the ground estimates of the effect of early voting. For example, as of August 14, 2017 the *Indian Country Today* website carried a story from October 27th, 2016 stating that “Pyramid Lake voters joined a flood of Nevadans casting a ballot during the state’s early-voting period. During the first two days of early voting at Pyramid Lake, turnout had already doubled that of the last presidential election in 2012.”

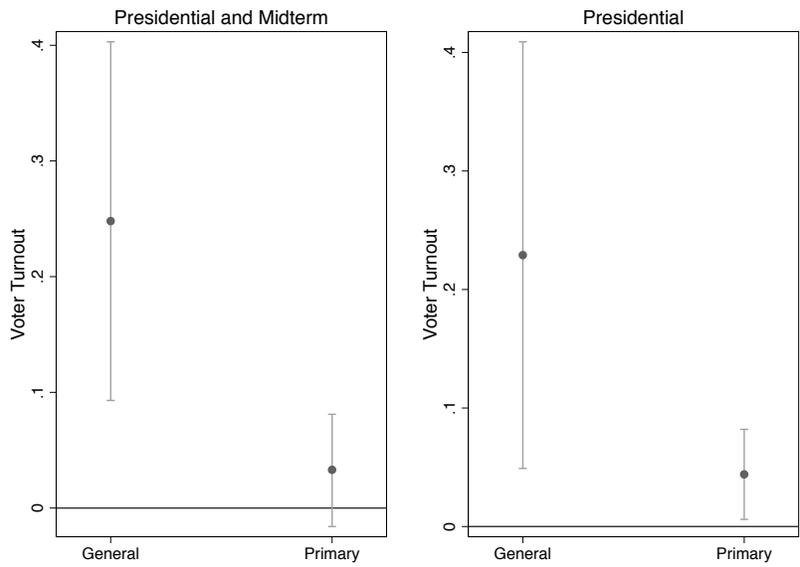
Figure 4: Early On-site Voting Impact on Voter Turnout Per Capita, 2016 Elections



¹¹ Results for vote totals show highly consistent results, shown in Appendix A1.

In Figure 5, below, we plot the results of difference in means tests for voter turnout in all general and primary elections. The plot shows the estimated difference in voter turnout per capita in sites with early voting (Walker River and Pyramid Lake in 2016) and those without voting sites (Yerington and Duck Valley in 2016, and all other years for all reservations). The estimates for the general election suggest an increase of approximately 22-25% in reservations with early voting sites versus those without such sites. This result is significant at the $p < .01$ level. We include estimates of all election years (presidential and midterm) and presidential years in the estimates because of widely observed differences in turnout in midterm and presidential elections. We find similar results in both cases. We do not see any higher propensity to vote in the primary elections in the treated reservations, except to a slight degree in presidential elections. This effect is driven by increased turnout at Pyramid Lake in the 2016 primaries. We show our main results are not driven exclusively by Pyramid Lake in Online Appendix Table A3.

Figure 5: Early On-site Voting Impact on Voter Turnout Per Capita, All Elections



The results from the t tests provide supportive evidence that early voting sites increased turnout in the treated reservations. The inference of the t tests, however, rely on strict assumptions of the comparability of the reservations. While we have asserted that the reservations have similar cultural and socio-demographic characteristics that render them reasonably comparable, there are certain differences in the population size, socio-demographic characteristics, and the geographic distance to voting locations that may impact our statistical significance and point estimates. In the next section, we address these concerns with fixed effects estimations that control for time-invariant differences across the reservations that may impact our results. We also control for election year fixed effects to address concerns that our results may be driven by election-year specific factors. The results of the fixed effects regression provide more conservative estimates of the effect of early voting, but give us more confidence of the robustness of our findings.

Fixed Effects Regression Results

In Table 1 we estimate the effect of early voting on turnout per capita (models 1 and 2) and the total vote count (models 3 and 4). In all models we control for reservation fixed effects to manage concerns with unexplained variance between reservations such as historical factors, geographic distance to polling places, and cultural differences. Year fixed effects control for election specific factors. We estimate the models for presidential election years (models 1 and 3) and all elections years (models 2 and 4). We also control for reservation population but additional time varying controls are not available at the reservation level. Throughout all models, the effect of early voting is highly significant and associated with higher voter turnout. The estimates for per capita turnout suggest early voting sites increase voting by 11-13%. The estimates in models 3 and 4 predict an increase of approximately 136-158 additional votes with

early voting sites on the reservation. We show additional analyses in the Online Appendix. First, we test the fixed effects models with the lagged dependent variable in Appendix Table A2, the results for both voter turnout and vote count retain their significance, and suggest an 8-12% increase in turnout with the early, on-site voting locations. We also test the results without Pyramid Lake to be sure that the higher turnout is not driven by Pyramid Lake alone. Despite the smaller sample, we find a consistent positive effect of the early voting site on turnout and the vote count in Appendix Table A3. We also test whether having early on-site voting in the general election was related to greater turnout in the primary election. The results are shown in Appendix Table A4. We find that early on-site voting access in the general election is not a consistently significant predictor of voter turnout in primaries on the reservations. Again, these results suggest that the sites that received early on-site voting locations were not more likely to vote, based on primary election behavior. These results support the visual evidence from the graphs, and provide more conservative estimates than those from the t tests.

Table 1: General Election Results

	(1)	(2)	(3)	(4)
	Turnout	Turnout	Vote Count	Vote Count
Early Voting Site	0.106*** (0.030)	0.127*** (0.029)	136.416** (46.062)	158.170*** (43.757)
Population (logged)	0.693 (0.405)	0.626* (0.348)	1,979.135** (632.207)	1,561.406*** (529.245)
Observations	16	28	16	28
R-squared	0.983	0.971	0.970	0.950
Reservation FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Elections	Presidential	All	Presidential	All

Standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Discussion and Policy Implications

Our empirical analysis shows a consistent, positive impact of early on-site voting locations on voter turnout in the two “treatment” reservations in comparison to the “control” reservations in the study. This positive impact is apparent in voter turnout and vote totals, in difference in means tests, and fixed effects regressions. We have reason to believe that the placement of early voting sites in Walker River and Pyramid Lake were largely exogenous of latent variation in voter interest across the four reservations and that the four reservations are broadly comparable with regard to the factors that predict voting. These results provide interesting insights into the impact of early on-site voting and of political participation on Indian reservations more broadly. Of course, the sample size of this investigation is limited, but the natural experimental conditions enhance the validity of the research.

We provide simple causal mechanisms that we expect drive differences in participation—costs of voting and trust in government. Both factors were improved by having early voting sites on the reservations. The sites substantially reduced transportation costs for interested voters and provided a longer time window to complete the complex task of modern voting. Moreover, these sites were on the reservations, where Native people were available to assist with the task of voting. The physical location of the voting site on reservations increased confidence that votes would be counted and that presence of Native volunteers encouraged some skeptical or reticent voters to cast ballots.¹² We cannot say, however, that these mechanisms would increase voter turnout in the long-term or which of the mechanisms was more important to voters. Uncovering these details remains the top priority for future research on this topic.

¹² Scholars have found that social networks and the context within which people vote can have a positive or negative impact on participation (Huckfeldt 1979; McClurg 2003). As Nickerson (2008: 49) noted, “The entire act of voting appears to be assisted by interactions with friends, neighbors and family members.”

To some extent the increases on the two reservations subject to the treatment was surprising. Existing research suggests limited impacts of early voting sites on turnout. The NAVRC survey results also show that trust in all levels of government and trust in different forms of voting is low, although trust in in-person voting is substantially higher than the other forms. The provision of satellite voting options—a form of in-person voting—on the reservation furthers the common American goal of open access to the ballot and democratic participation for all citizens.

While an important first step in analyzing differences in electoral participation on reservations, there is much left to be accomplished. The next step of this project is to work closely with the state of Nevada to disaggregate the voter turnout data so that early voting at satellites can be separated from Election Day voting. At this point, we know the early on-site voting was associated with higher turnout, but we would like to investigate whether the timing, location, or both, were more important to the increased turnout. We also would like to explore the extent to which there is a contagion effect, where community members who have voted, encourage friends and family to do the same. More generally, we believe it is crucial to identify the underlying reasons, most likely related to economic factors, lack of trust, and high levels of political alienation that contribute to low levels of political engagement found on many Indian reservations.

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Assessing the Efficacy of Early Voting Access on Indian Reservations Online Appendix

Table A1: Voting on the Studied Reservations (2004-2016)

	County Pop.	County Seat	Reservation Pop.	2004 Gen	2006 Gen	2008 Gen	2010 Gen	2012 Gen	2014 Gen	2016 Gen
Precinct 11 (Mineral County) (Walker River Reservation)	4772	Hawthorne	900	267	190	302	225	254	150	302
Precinct 4-6 (Lyon County) (Yerington Reservation)	52585	Yerington	1200	31	24	48	32	59	28	59
Precinct 29 (Elko County) (Duck Valley Reservation)	50991	Elko	1265	100	66	130	88	114	56	108
Precinct (Washoe County) (Pyramid Lake Reservation)	446903	Reno	1734	259	204	356	338	433	235	579

Figure A1: Early On-site Voting Impact on Vote Count in 2016

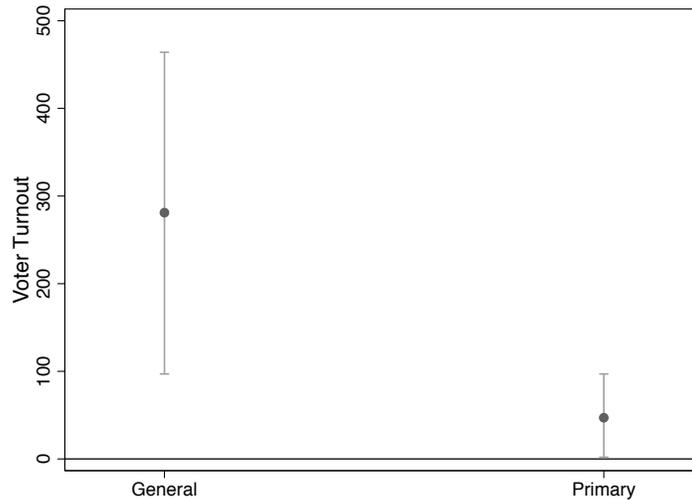


Figure A2: Early On-site Voting Impact on Voter Totals, All Elections

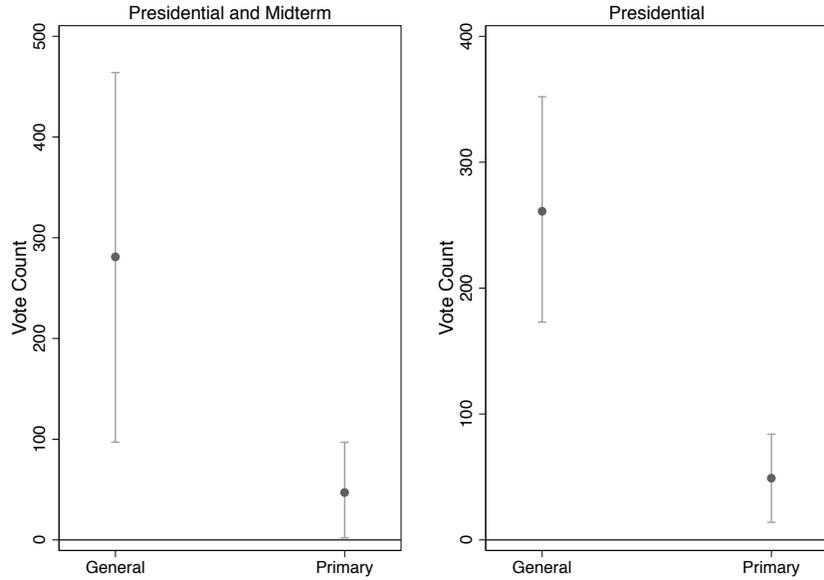


Table A2: General Election Results, Lagged Dependent Variable

	(1) Turnout	(2) Turnout	(3) Vote Count	(4) Vote Count
Early Voting Site	0.082*** (0.017)	0.121*** (0.037)	79.759** (15.071)	137.996** (54.513)
Population (logged)	2.089*** (0.555)	0.606 (0.614)	2,136.361* (674.314)	2,102.809* (1,010.828)
Vote Turnout (<i>t</i> -1)	0.141 (0.234)	-0.051 (0.316)		
Vote Count (<i>t</i> -1)			0.636** (0.174)	-0.206 (0.373)
Observations	12	24	12	24
R-squared	0.999	0.969	0.999	0.951
Reservation FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Elections	Presidential	All	Presidential	All

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A3: General Election Results, Excluding Pyramid Lake

	(1)	(2)	(3)	(4)
	Turnout	Turnout	Vote Count	Vote Count
Early Voting Site	0.061† (0.032)	0.105** (0.041)	36.737 (23.026)	65.368* (30.598)
Population (logged)	-0.117 (0.453)	0.195 (0.506)	362.630 (325.375)	531.857 (377.613)
Observations	12	21	12	21
R-squared	0.993	0.974	0.993	0.973
Reservation FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Elections	Presidential	All	Presidential	All

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, † p<0.15

Table A4: Primary Election Results

	(1)	(2)	(3)	(4)
	Turnout	Turnout	Vote Count	Vote Count
Early Voting Site	0.017* (0.008)	0.010 (0.015)	32.723* (14.928)	26.470 (17.753)
Population (logged)	1.577*** (0.251)	1.001*** (0.259)	2,064.590** (468.971)	1,070.582*** (316.372)
Observations	13	25	12	24
R-squared	0.981	0.911	0.960	0.875
Reservation FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Elections	Presidential	All	Presidential	All

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, † p<0.15