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Assessing the efficacy of early voting access on Indian reservations: evidence from a natural experiment in Nevada

Jean Schroedel^a, Melissa Rogers ^b, Joseph Dietrich^a, Savannah Johnston^a and Aaron Berg^a

^aDepartment of Politics and Government, Claremont Graduate University, Claremont, CA, USA; ^bDepartment of International Studies, Claremont Graduate University, Claremont, CA, USA

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.

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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. Cegavske* 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

CONTACT Melissa Rogers  melissa.rogers@cgu.edu

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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 the question of 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 decrease turnout (Collingwood et al. 2018; Gimpel and Schuknecht 2003; Haspel and Gibbs 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). Berinsky, Burns, and Traugott (2001) use the terms “resource rich” and “resource poor” voters, but regardless of the terms used, minority voters are included within the latter group, with the former benefitting from convenience voting.

With respect to early voting sites, one study (Canon, Mayer, and Moynihan 2014) paradoxically found that putting in early voting sites actually reduced turnout. The authors posited that the decline was due to decreased efforts by campaign to mobilize voters. This, however, is not likely to apply if early voting is placed on reservations because there is limited if any Get Out the Vote (GOTV) efforts by campaigns and parties in their communities, according to Healy (Telephone interview, April 8, 2019) from Four Direction, a grass roots non-profit engaged in Native electoral engagement. Native Americans, particularly those living on rural reservations, arguably are the nation’s most “resource poor” population, so this study is an important first step in determining whether dramatically reducing the cost of voting by providing a form of convenience voting can increase turnout among low propensity voters.¹

This is the first study examining the impact of early voting satellites on voter turnout among a target population comprised of low propensity and very “resource poor” voters who have very high travel costs to vote. In her ruling, Judge Du noted the “totality of circumstances” combined with the travel distance barrier constituted “abridgement” of the right to vote in violation of Section 2 of the Voting Rights Act. We test in a natural experiment setting whether altering the cost of voting for low propensity voters, holding other factors constant, can result in increased electoral participation. In contrast to much of the existing research on this topic, our results suggest that lowering costs can increase electoral

participation, at least for this subset of “high risk” voters with unusually high barriers to 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). 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; Zmerlie 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 data that show that our “treatment” and “control” reservations are roughly comparable. We compile evidence from a survey conducted on those four reservations just prior to the election, socioeconomic data from census sources, and voting results from the election boards in Nevada. 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.

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 2014). 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. Further compounding the problem of poverty is the fact that educational attainment among Native Americans on these four reservations is very low.² A Senate report issued as part of the 1982 renewal of the Voting Rights Act identified socio-demographic and economic factors as

constituting “totality of circumstances” relevant in voting rights litigation (U.S. Senate Report 1982).

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 each way 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 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

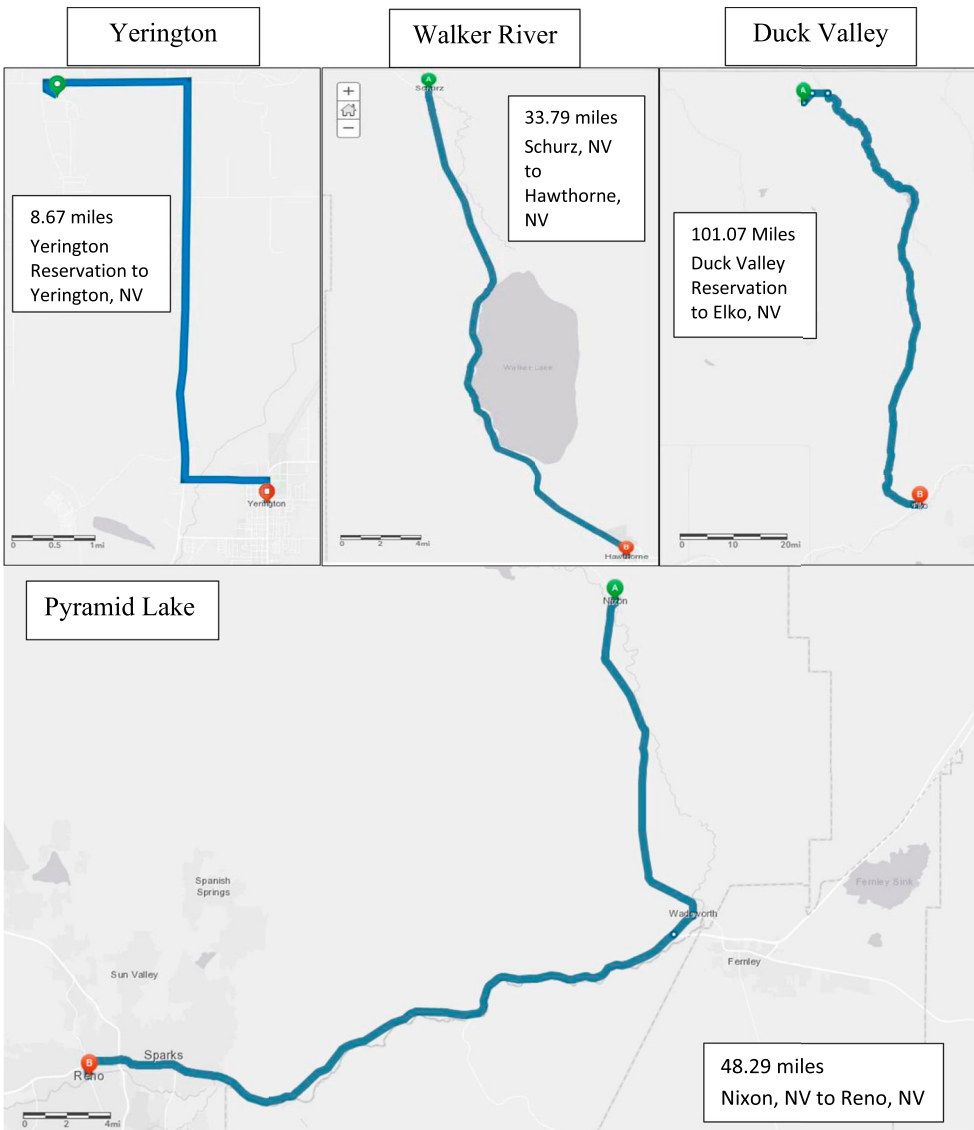


Figure 1. Travel distance to Yerington, Walker River, Duck Valley, and Pyramid Lake Reservations.

polling place, have to travel 100 miles in each direction to the county seat in Elko for in person voting. Residents of the Yerington Reservation need to drive 17 miles roundtrip to the town of Yerington for in person or early voting access. Providing access on the reservation reduced travel distance to less than two miles each way, on average.

The direct cost of travel (distance, gas, travel time) in three out of four cases is extraordinarily high. The 2016 American Community Survey reports that the average gross income in Nevada is \$53,094, but 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 year's worth of regular gasoline in 2016 (U.S. Department of Energy 2016). The majority of residents of the state live 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 for prospective voters 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 (Schroedel and Hart 2015). 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. This only works if there is residential mail delivery, which does not exist on these reservations – and many other places in Indian Country.

Perceived benefits of voting

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, researchers working with the Native American Voting Rights Coalition (NAVRC), Tribal leaders, and the Inter-Tribal Council of Nevada, surveyed more than 1500 Native Americans living on reservations in Nevada and South Dakota about voting access. The survey respondents evinced low levels of trust in local government's administration of elections (Native American Voting Rights Coalition 2018). Subsequent research, using NAVRC survey data, showed that lack of trust in election administration predicts a significantly lower probability of voter turnout (Berg, Schroedel, and Rodriguez 2018).³

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 overstate 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. None of the reservations have residential mail delivery, which makes it unlikely that residents can avoid the travel distance barrier by switching to vote by mail. 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 had very similar socio-economic characteristics in the 2014–2018 period, as shown in Table 1. As discussed above, 19–45% of individuals on these reservations live below the poverty line. The poverty rates are high on all of the examined reservations, and most of all Walker River with greater than 45% of the population below the poverty line. The unemployment rates are high across each reservation, and a large percentage of the population is relatively young. Broadband access is quite low on each of the reservations, likely making access to information about voting more difficult. Although there is some variation across reservations, the broader picture is one of comparably low-

Table 1. Socioeconomic characteristics of “control” and “treated” reservations.

	“Control” reservations		“Treated” reservations	
	Duck Valley	Yerington	Pyramid Lake	Walker River
Total Population	1351	216	1499	1209
Median Age	33.7	31.1	35.7	31.3
Median Income	\$35,700	\$21,667	\$40,625	\$25,450
Unemployment Rate	18.4%	31.3%	18.7%	26.7%
All People Below Poverty Line	36.2%	40.7%	19.0%	45.2%
High School Graduate	84.8%	74.2%	89.5%	84.4%
People Without Health Coverage	5.7%	2.7%	2.0%	4.3%
Households without Broadband Internet	49.6%	35.7%	43.3%	42.5%

Source: 2014–2018 ACS 5-year estimates (<https://www.census.gov/tribal/>).

income and geographically isolated places that make voting less likely than more educated and urban locations (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 site. 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 of the 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 9000 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). 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 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. Cegavske 2016). The ruling, however, did not require that the sites provide registration along with early voting.

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 initially intended to join the lawsuit, but after consulting with attorneys agreed to not be part of the suit because they faced a substantially lower travel distance barrier than people living at Pyramid Lake and Walker River. Since the lawyers were hoping to get a judicial ruling that travel distance disparities are a relevant factor in determining voting rights abridgement, it made sense for Yerington to withdraw (Healy, Telephone interview, May 31, 2019). Residents at Duck Valley Reservation discussed joining but chose not to engage in the litigation due to concerns their participation may cause problems because the reservation includes parts of Idaho.⁴

As a 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 to establish satellite early voting centers on the other reservations within the state. The 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). Also, the four reservations were similar in that neither the Republican nor Democratic campaigns organized GOTV efforts in their communities (Healy, Telephone interview, April 8, 2019).

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 a 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 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.” 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, Nevada 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.⁵

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 sites, in comparison to previous years and the other two reservations without satellite sites, we also expect to find a larger increase at Pyramid Lake, 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.⁶ 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 through #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 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.⁷ The standard in the voting literature is to use voting age population as the denominator. Voting age population is not calculated for these reservations nor is it possible to calculate this variable from available sources. Even if it were possible, much of the young voting age population on reservations live in temporary housing arrangements, making them difficult to count authoritatively. 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.

Efforts to further test the impact of turnout on these reservations with future elections will not be possible due to a legal change brought about by Nevada Assembly Bill 137. This law eliminates the requirement for tribal governments to obtain prior approval by city or county officials to establish polling sites on reservation lands. The law also stipulates that

county officials and city clerks will be required to recognize established polling places on reservations. The reservations in Nevada plan to establish polling places on each reservation beginning with the 2020 election and the reservations will no longer have differential access to polling locations. Thus, despite the small sample size and data limitations, our study frame represents the only opportunity to estimate the impact of the “natural experiment” conditions.

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-specific and election-specific factors to see the impact of early voting access on voter 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, keeping in mind that none of the sites experienced mobilization by campaigns during 2016.

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 2 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. This was the first time in history that Pyramid Lake 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

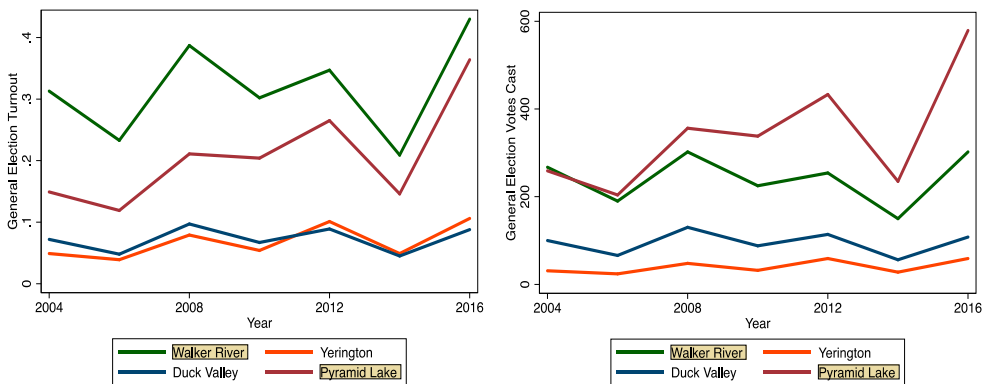


Figure 2. Voter turnout and vote count in Four Nevada Indian Reservations, 2004–2016. Notes: Reservations with early voting sites are shaded in the legend. Full data shown in Appendix Table A1.

election years has fluctuated, ranging from a low of 254 votes cast in 2012 to a high of 302 in both 2008 and 2016.⁸ 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 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. Of course, primary elections are not directly comparable to general elections. We examine the primary election to assess the conditions of the “natural experiment.” That is, whether we see differences prior to the “treatment” across the reservations. 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 participation in the 2016 election. We do not see rising engagement in Walker River. This lends credence to our assertion that the early voting sites were not requested in response to rising interest in political participation in the treated reservations.

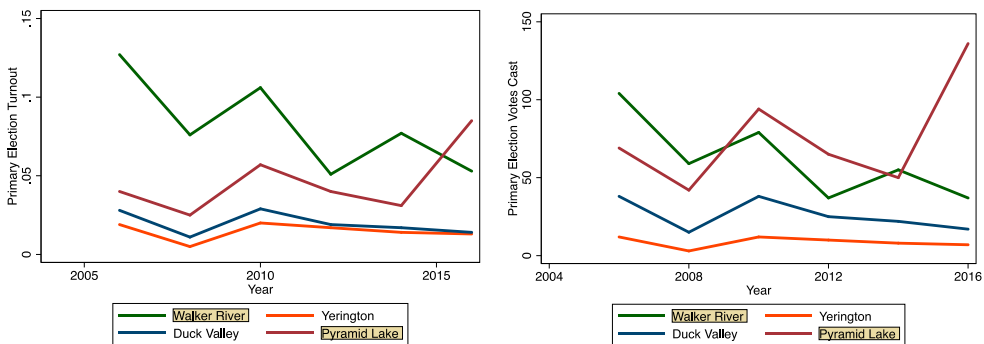


Figure 3. Primary election turnout and vote count, 2006–2016. Notes: Reservations with early voting sites are shaded in the legend. Full data shown in Appendix Table A1.

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 to 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.⁹

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 27, 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.”

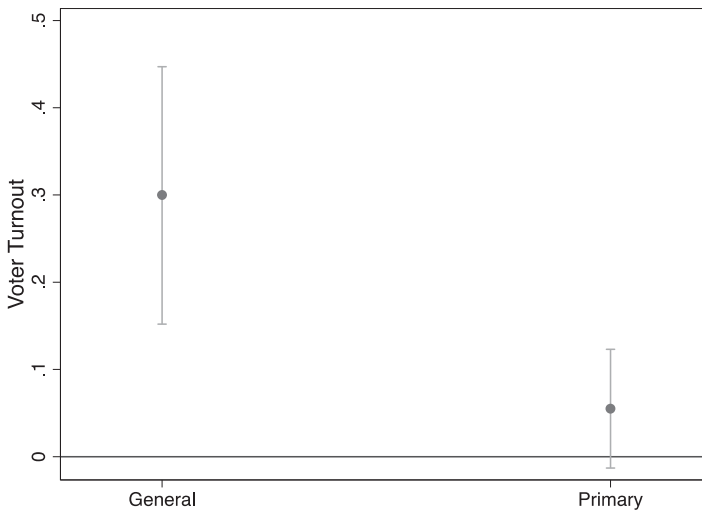


Figure 4. Early on-site voting impact on voter turnout per capita, 2016 elections.

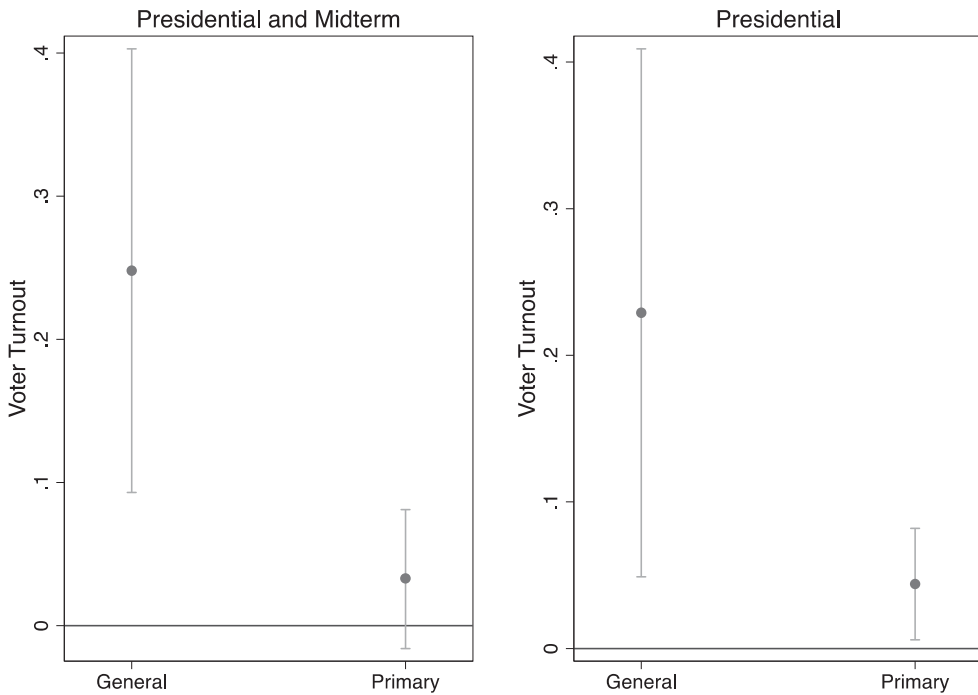


Figure 5. Early on-site voting impact on voter turnout per capita, all elections.

In Figure 5, 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. Again, we present results of the primary elections only to demonstrate the comparability of the reservations prior to the early onsite voting “treatment.” We show our main results are not driven exclusively by Pyramid Lake in Online Appendix Table A3.¹⁰

The results from the t -tests provide supportive evidence that early voting sites increased turnout in the treated reservations. Yet the inference of the t -tests relies 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 in the robustness of our findings.

Fixed effects regression results

In Table 2, we estimate fixed effect models of early voting sites on turnout per capita. 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 2) and all elections years (models 3 and 4). We also control for reservation population. Additional time varying controls are not available at the reservation level. Nonetheless, the fixed effects, in addition to the lagged dependent variable included in models 2 and 4 account for much of the variation in turnout. Throughout all models, the effect of an early voting site is highly significant and associated with higher voter turnout. The fixed estimates for per capita turnout suggest early voting sites increased voting by 8–13%.

We show additional analyses in the Online Appendix. First, we test the fixed effects models with the vote count dependent variable in Appendix Table A2. The results in all cases are positive and significant at the $p < .05$ level or higher. We also test the results without Pyramid Lake and without Yerington to be sure that the higher turnout is not driven by these reservations 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 (Pyramid Lake) and Table A4 (Yerington). 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 A5. 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 overall, based on primary election

Table 2. General election results.

	(1)	(2)	(3)	(4)
	Turnout	Turnout	Turnout	Turnout
Early Voting Site	0.106*** (0.030)	0.082** (0.017)	0.127*** (0.029)	0.121*** (0.037)
Population (logged)	0.693 (0.405)	2.089** (0.555)	0.626* (0.348)	0.606 (0.614)
Turnout ($t-1$)		0.141 (0.234)		-0.051 (0.316)
Observations	16	12	28	24
R-squared	0.983	0.997	0.971	0.969
Reservation FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Elections	Presidential	Presidential	All	All

Standard errors in parenthesis.

*** $p < .01$.

** $p < .05$.

* $p < .1$.

behavior. These results support the visual evidence from the graphs, and provide more conservative estimates than those from the *t*-tests.

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.¹¹ The physical location of the voting site on reservations increased confidence that votes would be counted, and the presence of Native volunteers encouraged some skeptical or reticent voters to cast ballots. We cannot definitively state, however, which of these mechanisms was more important to voters, nor whether they would increase voter turnout in the long-term, but we think their combined positive effects are likely to endure because voting is a habituated behavior. As Nickerson (2008) noted, “The entire act of voting appears to be assisted by interactions with friends, neighbors, and family members.” Previous research has shown that social networks and the context within which people vote can have a positive or negative impact on participation (Huckfeldt 1979; McClurg 2003), and the entire context of voting at Pyramid Lake and Walker River was changed into a positive one.¹² Uncovering these details remains the top priority for future research on this topic.

To some extent the increases on the two reservations subject to the treatment were surprising. Existing research suggests limited impact of early voting sites on turnout, but the failure to find an increase has been attributed to decreases in party and candidate mobilization when early voting is instituted. 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 this study is 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 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, meaning 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.

Notes

1. It is not clear whether results from this natural experiment can be extended to other “resource poor” populations (e.g., racial and ethnic minorities), given the many unique characteristics and barriers faced by Native Americans on reservations. However, increasing Native voting has positive spillover effects for other minorities in terms of promoting shared partisan and policy interests. Native Americans overwhelmingly support Democratic candidates, as do most African American and Latino voters, hence they have a shared interest in promoting high turnout among all of those groups. As Terry (2016) noted, voting barriers that decrease minority turnout have policy consequences, in that officials will be more likely adopt conservative policies. See also Carr, Schildkraut, and Rank (2017) and Bentele and O’Brien (2013).
2. 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 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).
3. Less than half of Nevada respondents to the NAVRC survey stated they had complete trust in any form of non-tribally administered election (NAVRC 2018). This contrasts with responses among the general population in Nevada to the 2016 Survey of the Performance of American Elections (SPAЕ), which found that roughly three-quarters of respondents had complete confidence that their vote would count. For data and full report on 2016 SPAЕ survey see: Charles Stewart “2016 Survey of the Performance of American Elections.” <https://doi.org/10.7910/DVN/Y38VIQ>.
4. According to conversations with Duck Valley Reservation residents, they have an agreement that allows both those living in Idaho and those in Nevada to register their vehicles in Idaho, which has nearer Department of Motor Vehicles offices and has lower registration fees. Several expressed fears that Nevada officials would retaliate against them by taking away their Idaho car registration, if they pushed for a voting site on the reservation.
5. The median income of Incline Village in the period 2007–2011 was \$93,831 (American Communities Survey).
6. As noted earlier, part of the Duck Valley Reservation is in Idaho, although most of the population lives in Nevada.
7. Yerington population estimates include the Yerington Reservation and Campbell Ranch. Duck Valley estimates are available from Census block 9401 in Nevada.
8. The lowest per capita voter turnout was 31% in 2004. The highest per capita turnout was in 2016 at 43%. The population in Walker River decreased between 2008 and 2016, rendering a 302 vote total a higher per capita value.
9. Results for vote totals show highly consistent results, shown in Appendix Figure A1.
10. We also show the results shown in Figure 4 are not driven by the relatively short travel distance to the polls from the Yerington Reservation. Results without Yerington are shown in Online Appendix Figure A2 and Table A4.
11. There is a substantial body of research showing that trust and electoral participation increases among African American and Hispanic voters when there are poll workers of the same race

at polling locations (King and Barnes 2019) and given the history of discrimination against Native voters, we expect there is a similar dynamic among Native Americans.

12. White's (2019) study of friends and family members of people, who have interacted with the criminal justice system, provides additional evidence of how voting or in her research, not voting, is affected by context. Given the deleterious effects of felony disenfranchisement laws on minority populations, the creation of mechanisms that facilitate making electoral participation a positive, community experience are of importance to not only Native Americans, but more broadly of interest to scholars within the race and ethnic politics sub-field.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Melissa Rogers  <http://orcid.org/0000-0002-2264-5462>

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