

Closing Age And Race Gaps In Elections Through Inclusive And Contextual Communications

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This study seeks to learn how viewing political communications with varying attention to diversity, equity, and inclusion affects the intention to vote in the next election. The investigation examines voting disparities by considering power imbalances in political communications. It features a randomized experiment with 416 individuals (ages 18 to 30) in Denver, Colorado. Survey participants saw one of two virtual political postcards describing a minimum wage policy issue, each with varying attention to DEI. The study identifies voting deserts, defined as precincts with the highest percentage of nonvoters in the previous presidential election. Findings reveal that Asian, Black, Latiné, multiracial individuals, and women are more likely to intend to vote after viewing imagery with more attention to DEI. Implications are discussed for how public administrators and community-based organizations can strive to close age and race gaps in elections by driving voter turnout and building political power in marginalized communities.

Voting is an important form of political power, and it plays a key role in determining who gets elected to government and which policies they implement. This makes voter engagement an “essential ingredient” for our democracy (Guy and Ely 2018, 34). Public administrators and community-based organizations influence communication strategies and innovations that can positively impact citizens’ political efficacy, access to power (Clark et al. 2023; Clark et al. 2018), and future well-being. Strategic communication efforts containing imagery and narratives that have deeper relevance to a full spectrum of constituents—especially young adults, people of color, and other marginalized groups—may spur change in typical political engagement patterns.

Unfortunately, voting participation is unequal in communities across the United States. In the 2020 presidential election, 67% of those eligible voted; 80 million individuals did not vote (Wray-Lake et al. 2020). Age and race gaps are a major issue (pewresearch.org 2017;

Schlozman et al. 2018). People in marginalized communities—people of color, younger individuals, and those with lower incomes—are more likely to feel disenfranchised (Portillo et al. 2020; Wray-Lake et al. 2020). Social inequities are often exacerbated in cities due to income inequality, housing affordability, residential segregation, and public health (Nijman and Wei 2020). At the same time, urban locations can be hubs to influence public opinion and mobilize underrepresented changemakers to get out the vote (Kaufmann 2017). For these reasons, urban voting precincts offer fertile settings to research the effects of imagery and language that are more attentive to diversity, equity, and inclusion (DEI) in voting communications.

Public administration scholars and practitioners and those working in community-based organizations are deeply concerned about advancing social equity in elections, advancing support for voting administrators, and applying “scientific knowledge to solve practical problems

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in highly politicized environments” (Ricucci 2010, 24). Yet, literature surrounding elections administration and elections management is limited (Portillo et al. 2020). There are few studies that test strategies and instruments that would increase voter turnout among disadvantaged groups.

This article introduces the concept of voting deserts, defined here as the lowest turnout precincts in the previous presidential election, including young, low socioeconomic status (SES), highly diverse populations, and specifically analyzes five such precincts in Denver, Colorado. It builds on the concepts underlying the term “food deserts,” which are of deep concern to public administrators and health researchers analyzing social equity in food quality and access. Likewise, inequities and discrimination are systematically present in voting, and scholars and practitioners will be interested in the dynamics present in voting deserts. Identifying voting deserts is a geospatial approach to assessing unequal voting patterns. People whose political power has been marginalized reside in these precincts, which are typically dotted by empty businesses and low-income housing. Voting deserts can be considered political engagement “opportunity zones” where public administrators can engage in listening tours and studies and make investments such as improving voter communications and enhancing ballot box placements to improve social equity. This research demonstrates practical strategies to build more inclusive political communications with an appeal to young, diverse, lower-income voting desert residents. Findings have the potential to inform how election administrators and campaigns may take proactive steps to close age and race gaps in elections by building and creating political power in marginalized communities.

Why should we care about DEI in communications to young voters in precincts with the lowest turnout rates? Too often in U.S. history, we have witnessed the marginalization of diverse individuals (Burnier 2008). As Guy points out,

Ours is a society profoundly fissured by the qualities that define us: income, race, gender, ethnicity, age, lifestyle. Societal fault lines mark rifts between religions, parties, and ideologies. It falls on the shoulders of government to transcend these chasms—to forge a civic culture that bridges differences and strengthens commonalities. Responsive democracy, civility, and respect for one another depend on this. (Guy 2003, 64)

Guy and McCandless (2012, 55) write that taking a social equity approach to democracy can help correct power imbalances between those “with” advantage and those “without.” Citizen insights can improve trust in government (DeLeon 2009), and anti-racist communication practices promote empathy and equity between people and groups from diverse cultural backgrounds. By reducing bias, these innovations can drive participation rates in public activities, especially among disadvantaged groups (Henderson and Williams 2013).

This field research was funded by a grant from the National Civic League and is guided by literature about social equity, political marketing and communications, and the need to deepen and personalize communications with nonvoters. It produces insights into the causal effects of diverse imagery on potential voters under the age of 30. The central question addressed in this study is *How does viewing political communications with varying attention to DEI affect young individuals’ intentions to vote?* Control and treatment surveys test the intention to vote in the next election after viewing political communications with varying attention to DEI.

Nonvoters and Implications for U.S. Democracy

Nonvoters exemplify what happens when marginalized populations are overlooked. Anemic investment in political outreach results in anemic participation (Khalid et al. 2018). Voting inequities are not random; they typically reflect patterns of advantage, including income and education, and can hinge on such factors as psychological orientations to politics and proper recruitment into political activity (Schlozman et al. 2018). A challenge for older democracies is to “perfect and deepen” political participation (Dahl 1998, 2). The Pew Research Center (2017) defines nonvoters as “those who were registered to vote but did not cast ballots in any of the most recent national elections” (Pew Research Center 2017, 1).

Earlier scholarly literature casts nonvoters in a negative light. E.E. Schattschneider (1960, 102) called voter apathy a “sickness” and nonvoters the “soft underbelly” of the United States. Ragsdale and Rusk (2017) offer a perspective shift, suggesting that nonvoters are not trapped because of such demographic characteristics as age, economic status, or education level. Instead, they say that nonvoting is often a rational choice when levels

of uncertainty in the nation are high. Certain variables, such as the campaign context (“external uncertainty”) and candidate preferences (“internal uncertainty”) come into play, as does the level of campaign contact. When candidates offer distinct choices and cover issues of importance, eligible voters are more likely to cast their ballots. A 2020 poll revealed that less than a quarter of nonvoters had someone directly reach out to them, provide them with voter information, or ask for their vote during the 2020 election cycle. In the poll, 52% of nonvoters graduated from high school. A quarter of the nonvoters polled were Latiné (Montanaro 2020).

Successfully engaging nonvoters with effective political communication can help achieve more racially representative elected officials who support socially just policies. The quality and nature of our democracy depend on including and valuing individuals who are culturally diverse (Dahl 1998). Yet, some states erect voting barriers to those in marginalized communities. These include voter ID requirements, limited access to early and/or mail voting, voting locations changing or closing, limited accessibility, and voter intimidation (Portillo et al. 2020).

Election Marketing and Communications

Marketing theory involves understanding consumer behavior, segmenting target audiences, seeking competitive advantage, and achieving synergies through a program of marketing mix elements: product, price, place, and promotion (American Marketing Association 2023). Featuring authentic visual and descriptive representations of the community members’ issue priorities is key to marketing theory (Kotler and Lee 2007).

Political marketing is informed by three disciplines: political science, marketing, and communication. Governments, candidates, political parties, interest groups, and lobbyists engage in the practice. Voters’ perceptions of elections and policy matters are impacted by political marketing initiatives which include policy narratives and images (Boscarino 2022; Crow and Wolton 2020; Guenther and Shanahan 2020; Henneberg 2004; Shanahan et al. 2023; Zavattaro 2010). Imagery choices are narrative strategies. Boscarino finds that the inclusion of relevant imagery elevates respondents’ opinion of the importance of the policy issue (Boscarino 2022). Research demonstrates that visual messages about health risks increased the affective responses to messages and

motivation to become vaccinated for COVID-19 (Shanahan et al. 2023).

Until very recently, political marketing literature has missed a critical perspective that orients power, privilege, and oppression within our society and acknowledges the importance of deliberately seeking input from individuals who are experiencing racism and discrimination (Poole et al. 2021). Advancing DEI in political marketing requires inclusive audience segmentation, targeting, and synergy between the campaign or organization and audience goals and objectives (Kotler and Levy 1969; Porter 1996). If key audience segments are missed or ignored—including marginalized groups of individuals—problems can and will arise. For instance, a few misplaced pronouns and images may not only make or break a political race; they also inflict harm whether done intentionally or unknowingly, sparking and fueling societal division. This highlights the need for studies of diverse individuals who considered such civic engagement practices as voting but chose to spend their time differently.

The field of political marketing research is rich in its potential for conceptually grounded studies (Butler and Harris 2009). Its slow evolution is due, in part, to the continuous change in political marketplace contexts and the lack of academics who bridge the fields of public affairs and marketing. There are gaps in knowledge around electoral programs’ focus on political communication that mobilizes marginalized communities and persuades young people under the age of 30 to vote.

The research question is this: How does viewing political communications with varying attention to DEI affect young individuals’ intentions of voting in the next election? It stems from the need to increase political outreach to diverse and lower socioeconomic status (SES) populations (Khalid et al. 2018) and to begin to erase age and race disparities in U.S. elections (Pew Research Center 2017; Schlozman et al. 2018) by being more thoughtful about DEI and issues that influence younger voters.

The hypothesis is this: Political communications that are inclusive of marginalized populations’ priorities and cultural contexts will positively impact voter participation rates in precincts with high numbers of individuals from marginalized communities. It is rooted in studies that a) capture the disenfranchisement currently experienced in the United States by people of color, younger voters, and those who make less money (Porti-

llo et al. 2020; Wray-Lake et al. 2020); and b) demonstrate a need to transcend chasms and bridge differences (Guy 2003); and c) drive participation rates in public activities (Henderson and Williams 2013).

Research Design: Data and Methods

This micro-level study features an experimental research design. It employs two types of data collection strategies: 1) historical voting data and maps, in partnership with the Denver Elections Division, to locate Denver's voting deserts; and 2) a randomized experiment using a Qualtrics survey of 416 individuals. The unit of analysis is an individual's survey responses within the experiment. The experiment features two digital, fictitious political postcards (control and treatment) describing a minimum wage policy issue, featuring four images each with characters who live or attend university in Denver's voting deserts, each with varying attention to DEI. The control postcard image depicts white individuals while the treatment postcard features people of color. The study was conducted in a broader post-pandemic economic setting where workers in minimum wage service industry jobs have been hit the hardest.

Experimental design is considered the "gold standard" in research designs, especially when random assignments can be confirmed (Bhattacharjee 2012, 83). Differences identified between the treatment and control groups aid in figuring out causal effects for behavior. The study involved human subjects and received IRB approval.

Testing Digital Images in Political Mail

Individuals receive political mail from the government, issue campaigns, and political candidates. Examples include postcards about voter registration, school district bonds, and presidential candidates. Scholars have paid limited attention to political mail, even though its use dates back to Woodrow Wilson's campaign in 1914 (Benoit 2017).

Of the many modes for voter contact, political mail has the highest effect on turnout programs across different political contexts for voters of all ages (Arenstein and Stearns 2020). More money is spent by political campaigns on direct mail than on any other campaign medium, with the exception of presidential races (Arenstein and Stearns 2020; Benoit 2017). It is an example of a tactic that can encourage or discourage an individual's engagement in the political exchange. Yet, cur-

rent nonvoters are less likely to receive political mail whenever election administrators and campaigns need to trim costs.

Direct mail allows for precise targeting, creativity, personalization, and with the inclusion of a web link, a gateway for individuals who want to learn more about the campaign (Denton et al. 2019). The more tailored the postcards are to the individuals who receive them, the more effective they are in getting out the vote. They include eye-catching photos, attention-grabbing headlines, localized messages, and little content because the average reader will spend only 20 to 60 seconds reading them.

The Minimum Wage Policy Issue

Voting behavior is a vexing topic that calls for further theoretical and experimental research by behavioral economists. Voters make choices that will make them better off according to their own judgment (Thaler and Sunstein 2009). Those with higher opportunity costs are less likely to vote (Faravelli et al. 2020). High opportunity costs are prevalent in lower SES neighborhoods where individuals may work two to three jobs or function as full-time caregivers.

Policy issues can nudge people to vote (Thaler and Sunstein 2009; Wolton and Crow 2022). Minimum wage increases remain contentious with conservatives who believe it is an undesirable policy that reduces employment options (Clemens 2021). However, the problem of a lower minimum wage is popular in challenging economic times and may cause younger and more diverse individuals to explore the prospect of voting. A 2022 study links minimum wage ballot measures to increases in aggregate voter turnout (Markovich and White 2022). A Pew Research public opinion poll in 2021 found that most Americans supported a \$15/hour federal minimum wage (Dunn 2021) after the COVID-19 pandemic had devastating impacts on minimum-wage workers and service industry employees.

Location

Colorado was chosen as a study location due to convenience and because the City of Denver is in the second largest metropolitan area in the vast Intermountain West Region. It has a rapidly growing, diverse population that allows for examination of the concepts discussed earlier.

Colorado voter administrator involvement and partnership were critical to this study. Voting deserts were

operationalized by detailing the precincts in Denver with the highest 2% of nonvoters in the previous presidential election. Denver has 301 voting precincts, with five voting deserts across the city.² Criteria for choosing voting deserts include: (1) located in urban areas designated by the U.S. Census Bureau, (2) lower SES precinct with prominent levels of cultural and linguistic diversity, and (3) high percentage of nonvoters. These criteria are important because empowering individuals and increasing participation in these contexts can help close the age, race, and lower SES gaps in U.S. elections.

Political rhetoric primarily motivates elites and existing voters. Using a social justice lens, this research explores constructing election narratives and images with DEI considerations that are more likely to appeal to young and diverse audiences in areas where it is hard to get out the vote. A minimum wage policy narrative was included in this study because minimum wage is an economic topic that is likely to appeal to marginalized populations who are young, diverse, and lower income. A fictitious mail piece featuring this policy issue has a greater potential to reveal differences in voting behavior. Through empirical analysis of the survey data, we can construct value propositions and more inclusive election communications in the future that are more likely to appeal to nonvoters.

Variables/Definitions/Measures/Data Sources

Variables in the study include intention to vote in the next election (dependent variable) and age, gender, voting history/partisanship, whether living in a voting desert, language of choice at home, and race (independent variables). The unit of analysis in the study is an individual's survey results. See Appendix 1 for a list of key variables, definitions, measurement approaches, and indicators.

Operationalization of Key Concepts

Key concepts were operationalized using measures derived from best practices in experimental research design, such as random selection and assignment to

treatment and control groups, and randomized manipulation of treatments to understand cause (Bhattacharjee 2012; Brady 2011; Mosleh et al. 2021; Porumbescu et al. 2021). The dependent variable is the intention to vote in the next election after viewing a digital postcard inside the experiment. The independent variables in Appendix 1 reflect people's potential reasons for their rankings on intention to vote using a 10-point Likert scale. The English narrative in the treatment and controls is constant and describes a minimum wage issue. Images in this study showed individuals (ages 18 to 30) who live or attend university near voting deserts in Denver. Snapshots of those who identify as White were placed on the virtual postcard in the control survey. Photos of those who identify as people of color were included in the treatment survey.

Subject Recruitment

Individuals are highly unlikely to vote if they have not done so by age 30 and individuals with lower SES are less likely to be civically engaged (Arenstein and Stearns 2020, 11–30). Therefore, individuals were eligible to participate in the experiment if the following statements were true:

- ✓ You are between 18 and 30 years old
- ✓ You live in Denver or attend school in Denver

Random recruitment of survey participants was ensured. Flyers containing differing QR codes for the control and treatment were dispersed in areas where young people frequent.³ The differing QR codes on the recruitment flyers randomized participants for the study into control and treatment groups.

Data Collection

This study employs two types of data collection strategies: 1) collection of historical voting data in Denver, and 2) a randomized experiment using a Qualtrics survey.

Colorado's state election director and Denver's direc-

2. Zip codes containing Denver voting deserts are: 80210 (neighborhood near University of Denver), 80204 (neighborhood south of Empower Field at Mile High), 80205 (Five Points neighborhood), 80239 (Montbello neighborhood), and 80014 (neighborhood near Cherry Creek Reservoir).

3. Locations where flyers were dispersed: 1. CU Denver, 2. Metropolitan State University, 3. Community College of Denver, 4. University of Denver, 5. Little Saigon Market, 6. Tattered Cover Bookstore, 7. Edgewater Public Market, 8. Regis University, 9. Cherry Creek Mall, 10. Central Market, 11. Little Boxcar Dog Park, 12. Union Station, 13. Denver Broncos Boys and Girls Club, 14. Denver Public Library Montbello Branch, 15. Denver Art Museum, 16. Leven Deli, 17. Vital Root Denver, 18. Cheba Hut Toasted Subs, 19. Cherry Creek State Park, 20. Meow Wolf.

tor of elections served as vital research partners by providing voting data, which was used to establish voting deserts. The elections administrators quickly provided historical voting data for Denver County and created a 2020 voter turnout map marked with Denver's voting deserts.

A survey tool was designed to collect information on the variables of interest. Survey length was kept within a median 10-minute response time. Survey procedures and questions are documented in Appendix 2. Digital images of election postcards were embedded in the control and treatment surveys.

Survey Sample Size and Validity

The Colorado Department of Local Affairs' demographer's office estimates that there are 145,884 individuals aged 18 to 30 living in Denver County (Colorado Department of Local Affairs 2022). Based on a sample size calculator, 384 completed surveys were required to achieve a 95% confidence level to ensure validity with a margin of error of 5%. This survey surpasses that with a sample of 416 respondents.

Data Analysis

The central research question explores how viewing political communications with varying attention to DEI (Appendix 3) affects young individuals' intentions of voting in the next election. To study this question, a randomized experiment was conducted (Bhattacharjee 2012). The statistical analysis employed summary statistics, box plots with whiskers, two-sample t-tests, multiple linear regression tests, and the average treatment effect on the treated.

Summary Statistics

Exactly 416 individuals completed all survey requirements, which exceeded the required sample size needed for statistical validity in the population of interest. Demographics of interest were documented in the experiment to prove that survey randomization was achieved. See summary statistics (Appendix 4).

Forty-seven percent of individuals participating in the experiment took the control survey. Fifty-three percent of individuals took the treatment survey. A plausible reason for a higher percentage of participants taking the treatment survey is that flyers for the treatment may have been placed in higher-traffic areas.

Survey participants were much more likely to be female than male. The control group contained 132 females and 55 males. The treatment group contained 149 females and 60 males. Women have unequal political voices and have experienced discriminatory disenfranchisement in the past (Schlozman et al. 2018). Therefore, it makes sense that females would be more likely to participate in a research study about political inclusion.

Fifty individuals in the control and 65 individuals in the treatment self-reported never having cast a ballot in a presidential election. Individuals in the study are highly likely to identify with the Democratic Party, with 96 individuals in the control and 134 individuals in the treatment self-reporting a vote for Joe Biden in the last presidential election. Participants in this survey were less likely to be Republican. Only 44 individuals in the control group and 10 in the treatment group self-reported voting for Donald Trump in the last presidential election. This data closely reflects current voter registration patterns in Denver County. In December 2022, Denver County had 446,977 active voters, including 197,756 who identified as Democrat, 43,186 who identified as Republican, and 198,589 who identified as unaffiliated (Colorado Secretary of State 2022).

Denver County residents totaled 122 in the control group and 104 in the treatment group. Those living outside Denver County totaled 73 in the control group and 117 in the treatment group. County of residence statistics in this experiment make sense when we consider that many individuals in the age bracket of 18–30 are currently attending college and have home addresses in another county or state.

An analysis of the zip code section shows excellent geographic distribution of the results. All of Denver's zip codes were represented in both the control and the treatment. Digging deeper into zip codes, the study found that 40 individuals in the control group and 26 individuals in the treatment group live in zip codes containing Denver voting deserts.

Denver's racial and linguistic diversity is highlighted in the summary statistics. Fifty-six percent of the control group participants identified as White. The remainder identified as people of color or did not want to disclose their race. Forty-two percent of individuals in the treatment group identified as White. Fifty-eight percent of those in the treatment group identified as people of color. Most of the participants speak English at home. However, 10.26% of control group members

and 22.17% in the treatment group speak languages other than English at home.

Randomization of the Data

The control and treatment groups looked similar and behaved in similar ways while taking the survey. All participants indicated they were between the ages of 18 to 30. All lived or attended school in Denver, Colorado. We see similar numbers of men and women in the control and treatment groups. We also see similar numbers of people who live in Denver County in the control and treatment groups. The statistics are similar regarding the racial groups in the control and treatment groups. Most of the survey response times followed a normal distribution pattern for the control and treatment. Given the N of 416 and the summary statistics listed earlier, this experiment can be considered randomized.

Binary Dummy Variables Created

Prior to greater analysis, dummy variables for zip codes where voting deserts are present in Denver County were created. If individuals answered “I didn’t vote in the last presidential election” in survey Question 4, they were placed in the never-voted dummy variable.

Findings

This study seeks to answer how viewing political communications with varying attention to DEI affects the intention to vote in the next election. It builds on social equity literature around voter disenfranchisement and engagement (Clark et al. 2018; Portillo et al. 2020; Riccucci 2010) and the importance of correcting societal power imbalances (Guy 2003; Guy and McCandless 2012). It features authentic images and policy topics (Boscarino 2022; Crow and Wolton 2020; Guenther and Shanahan 2020; Kotler and Lee 2007, Shanahan et al. 2023; Zavattaro 2010) with appeal to young and diverse potential voters. In doing so, it informs how election administrators and community-based organizations can strive to close age and race gaps in elections by driving voter turnout and building political power in marginalized communities through inexpensive but highly effective postcard campaigns.

Intention to Vote in the Next Election After Viewing Postcard Images

The messaging and images in the treatment with more DEI scored higher regarding intention to vote in the next election. In the control group, 69.23% of participants chose a score of 7 or higher, 55.9% chose a score of 9 or higher, and 32.82% chose a score of 10 relating to their intention to vote in the next election. In the treatment group, 73.75% of participants chose a score of 7 or higher, 56% chose a score of 8 or higher, 45.24% of participants chose a score of 9 or higher, and 38.81% chose a score of 10 with regard to their intention to vote in the next election. These percentages show promise since 27.64% of survey participants did not vote in the last presidential election (see Appendix 5 for frequency distribution).

A chi-square test was performed to determine if there was a relationship between whether a research participant was in the control or treatment group and their score (1 to 10) on the question of intention to vote in the next election. There was no statistically significant relationship between control or treatment groups [Pearson $\chi^2_{(9)} = 10.27$, $p = 0.329$, Cramer’s $V = -.16$].

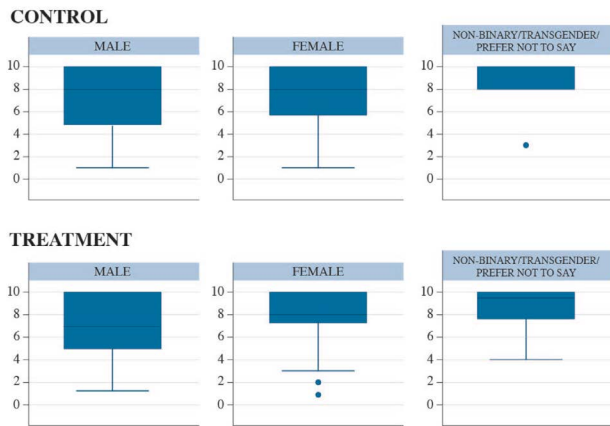
A series of box plots with whiskers was used to ascertain if the differences in means between the control and treatment groups were statistically different from zero using the dependent variable “intention to vote in the next election” and independent variables for gender, voting history, living in a voting desert, language, and race.⁴ The study includes observations with 115 men, 281 women, and 20 individuals who identify as nonbinary, transgender, or prefer not to say.

Gender

As shown in Figure 1, women were more likely to intend to vote in the next election after viewing the treatment with more attention to DEI, as we can see from the narrowing of the boxplot from the control and the treatment. Women’s intention to vote in the control group was lower than the treatment group ($M_{\text{control}} = 7.43$, $M_{\text{treatment}} = 8.05$, $\alpha \leq 0.01$).

4. Box plots must be generated using a continuous variable as the dependent variable. According to the literature, dependent variables on a Likert scale of 1 to 10 may be used as an ordinal approximation of a continuous variable (Johnson and Creech 1983; Norman 2010).

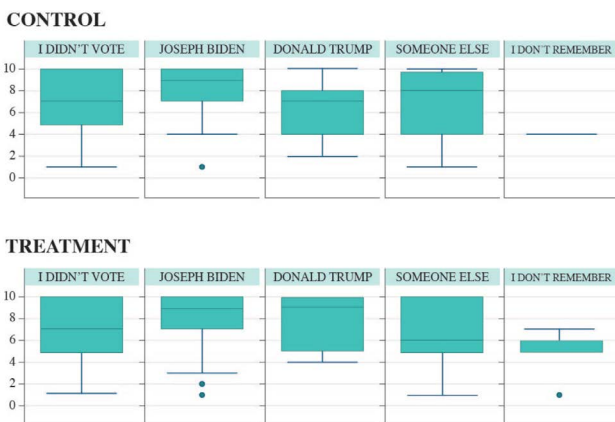
Figure 1. Box Plot with Whiskers: Intention to Vote in the Next Election by Gender for Control and Treatment Groups



Voting History/Partisanship

The study includes observations with 115 individuals who never voted in a presidential election, 230 people who previously voted for President Biden (D), 54 observations with individuals who previously voted for President Trump (R), and 17 observations with people who voted for another party or did not remember for whom they voted. Nonvoters’ intention to vote in the control group was lower than the treatment group ($M_{\text{control}} = 6.44$, $M_{\text{treatment}} = 7.05$, $\alpha \leq 0.10$). Those who voted for someone else had a higher intention to vote in the control group than the treatment group ($M_{\text{control}} = 6.75$, $M_{\text{treatment}} = 6.29$, $\alpha \leq 0.10$). Trump voters’ intention to vote in the control group was lower than the treatment group ($M_{\text{control}} = 6.34$, $M_{\text{treatment}} = 8.00$, $\alpha \leq 0.05$). Figure 2 displays these results.

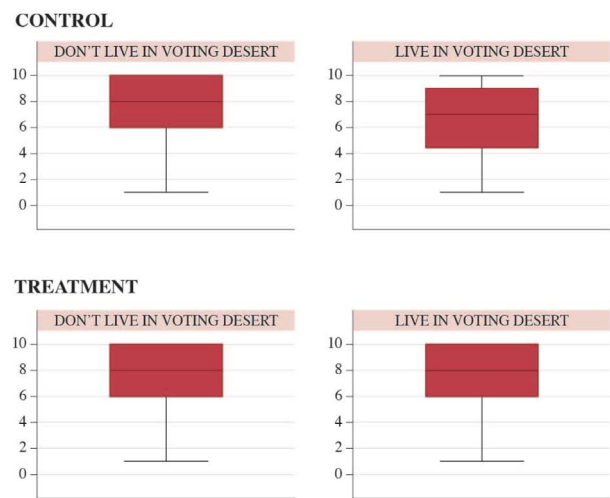
Figure 2. Box Plot with Whiskers: Intention to Vote in the Next Election by Voting History/Partisanship for Control and Treatment Groups



Voting Deserts

The study includes 40 observations in the control group and 26 individuals in the treatment group who live in zip codes containing Denver voting deserts. The box plot for individuals who do not live in voting deserts looks almost identical for the control and treatment groups in terms of intention to vote in the next election. The box plot narrows and intensifies at the top of the scale for individuals who live in voting deserts and who received the treatment featuring people of color. Voting desert residents’ intention to vote in the control group was lower than the treatment group ($M_{\text{control}} = 6.68$, $M_{\text{treatment}} = 7.73$, $\alpha \leq 0.10$). This is illustrated in Figure 3.

Figure 3. Box Plot with Whiskers: Intention to Vote in the Next Election by Voting Desert Status for Control and Treatment Groups



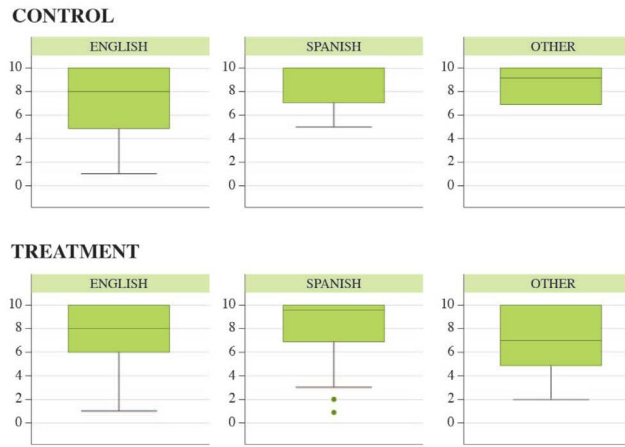
Language of Choice at Home

The data observations for language of choice at home tallied 347 for English, 43 for Spanish, and 26 for speaking another language. English speakers’ intention to vote in the control group was lower than the treatment group ($M_{\text{control}} = 7.28$, $M_{\text{treatment}} = 7.69$, $\alpha \leq 0.10$). This is illustrated in Figure 4.

Race

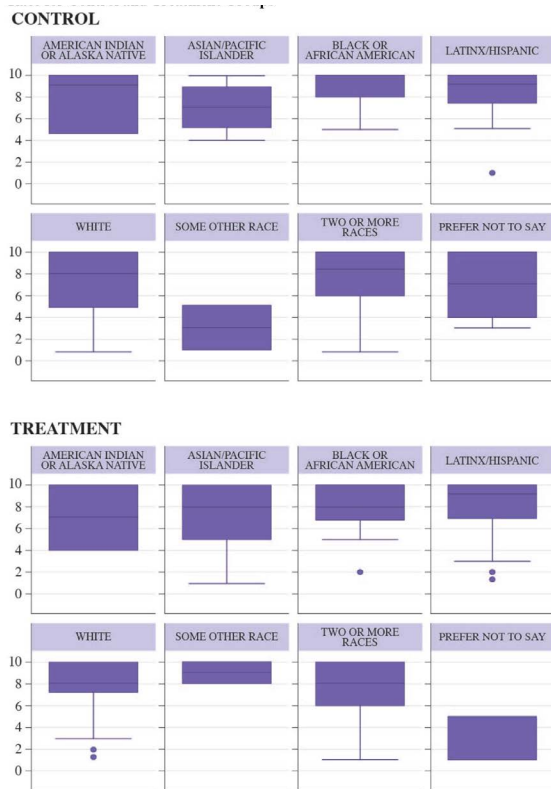
The data includes observations with those who identify with a myriad of races: 5 American Indian or Alaska Natives, 43 Asian or Pacific Islanders, 25 Black or African Americans, 78 Latiné, 203 White, 6 some other race, 47 two or more races, and 8 who prefer not to say. The box plot in Figure 5 shows a more intense effect for

Figure 4. Box Plot with Whiskers: Intention to Vote in the Next Election by Language for Control and Treatment Groups



the treatment with Asian/Pacific Islanders, Whites, and those who are some other race. Participants who did not want to disclose their race had the lowest mean for the treatment. Whites' intention to vote in the control group was lower than in the treatment group ($M_{\text{control}} = 7.01, M_{\text{treatment}} = 7.82, \alpha \leq 0.01$) (see Figure 5).

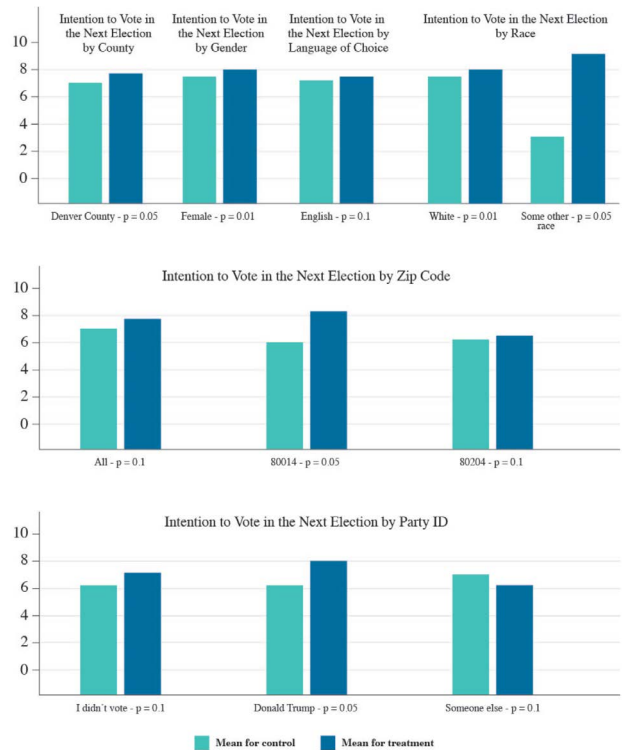
Figure 5. Box Plot with Whiskers: Intention to Vote in the Next Election by Race for Control and Treatment Groups



Difference in Means Tests and Multiple Linear Regression Tests

Two-sample t-tests and multiple linear regression tests were conducted to test the dependent variable (intention to vote in the next election) against independent variables for the control and the treatment. In the control group, being a member of another race is negatively correlated with intention to vote in the next election after viewing a postcard with less attention to DEI ($\alpha \leq 0.10$), using those who preferred not to disclose their race as the constant for race. For the treatment group, containing the image with the postcard containing more attention to DEI, the following variables were positively correlated with an intention to vote: being a Biden voter ($\alpha \leq 0.10$) and being a Trump voter ($\alpha \leq 0.10$), using a constant of those who preferred not to disclose their candidate choice; and identifying as Asian Pacific Islander ($\alpha \leq 0.05$), Black ($\alpha \leq 0.01$), Latiné ($\alpha \leq 0.01$), White ($\alpha \leq 0.01$), some other race ($\alpha \leq 0.05$), or two or more races ($\alpha \leq 0.05$), using those who prefer not to disclose their race as a constant. Being male ($\alpha \leq 0.05$) is negatively correlated with an intention to vote, compared with someone who prefers not to disclose their gender. (See histograms in Figure 6.)

Figure 6. Two-Sample T-tests with Statistical Significance



Average Treatment Effect on the Treated Using Inverse Probability Weights

Treatment effect estimators allow researchers to estimate potential outcome means and average treatment effects for causal inference from observational data. That means with data and assumptions, we can estimate the effects of a treatment on an outcome. Study findings from the average treatment effect on the treated (ATET) test focused on data in the following categories: gender, voting history, and race. Statistically relevant results that had positive ATET causal effects regarding participants' intention to vote in the next election include gender overall ($\alpha \leq 0.05$) being female ($\alpha \leq 0.05$), voting history overall ($\alpha \leq 0.10$) and having previously voted for Trump ($\alpha \leq 0.05$), race overall ($\alpha \leq 0.01$) and identifying with racial identities White ($\alpha \leq 0.05$), and some other race ($\alpha \leq 0.001$). A statistically relevant result that showed a negative ATET causal effect occurred with experiment participants who did not wish to disclose their race ($\alpha \leq 0.01$). Appendix 6 displays these results.

Comparison with Hypothesis

The intention to vote was predicted to increase among members of marginalized communities receiving treatment. The difference in means test analysis shows statistical significance with a positive trend for intention to vote among those who took the treatment who identify as Asian, Black, Latiné, White, some other race, and two or more races. The average treatment effect on the treated analysis had more sensitivity to sample sizes. It showed positive results for women, Whites, individuals who identify with some other race, and those who prefer not to disclose their race.

The study did not predict that Trump voters viewing the treatment would have a higher intention to vote. From the literature review, we know that the minimum wage policy issue is a contentious topic among Republicans. It is difficult to say why Republicans reacted with stronger intentions to vote after viewing imagery with increased attention to DEI when the narrative around the minimum wage remained consistent in the control and treatment. Individuals may have been concerned about shifting demographics and power dimensions. Future studies should consider this by adding survey questions that will capture positive or negative sentiments around the issue and images.

Discussion and Implications

This project investigated voting deserts by conducting an experiment in Denver's five lowest voter turnout precincts. Young, low SES, highly diverse populations were highlighted in the study. The ATET analysis in this study shows a causal relationship between images that give more attention to DEI and intention to vote in the next election by females, Republicans, Whites, and individuals who identify as some other race. Treatment images had a negative impact on the intention to vote for someone who prefers not to disclose their race. In addition, the analyses show positive trends that are statistically significant for individuals who identify as Asian, Black, Latiné, White, some other race, and two or more races.

In terms of narrative imagery, experiments involving political postcards provide opportunities to test the causal implications of using more inclusive imagery and narratives in voting materials. In future studies, larger sample sizes of marginalized communities, including those who are nonvoters and individuals living in voting deserts, will certainly broaden lessons learned regarding getting out the vote for future elections.

Limitations

This study is limited by four issues: internal validity, external validity, replicability, and confounding variables. The control and treatment postcards feature four images of real people in Denver's voting deserts. This was done intentionally because the populations are so diverse in the lowest voter turnout precincts. The researcher wanted to err on the side of being more inclusive in the treatment postcard while keeping the number of images on the control and treatment postcards the same. If someone did not like one of the images in a postcard, there could be an issue with internal validity. Additionally, it is difficult to say whether the results for ages 18 to 30 in Denver will hold true for the overall voting population. Since the study was anonymous, how participants categorized their ages and voting histories could not be verified and may or may not be accurate. In marginalized communities, individuals' race and gender are likely to impact power dimensions. As replications are designed, larger sample sizes are strongly encouraged to ensure that results of this study are clarified and extended.

Conclusion

The study examines the causal effects of increasing attention to DEI in election marketing while introducing the concept of voting deserts. Improving election marketing efforts in voting deserts will enrich leadership journeys while building a stronger, more democratic future. Public administrators and leaders of community-based organizations who are energized to tackle the problem of age and race gaps in elections, and the rising inequalities that come with such rifts, can forge a path forward by leading refreshed election marketing efforts. Such efforts can be designed to improve engagement by those who do not usually exercise their right to vote in elections.

The research employed a minimum wage policy narrative designed to appeal to those who are underserved, marginalized, and adversely affected by persistent poverty and inequality. Findings answer this question: *How does viewing political communications with varying attention to diversity, equity, and inclusion (DEI) affect young individuals' intentions of voting in the next election?* Results contribute to social equity scholarly knowledge in public administration, political marketing, and communications fields.

The findings advance social equity in elections by providing inclusive insights that can help elections administrators inspire communication teams to create interventions for individuals residing in urban communities with low voter turnout. Results demonstrate that young, diverse audiences have a higher intention to vote when they see images of people who look more like themselves in voting materials. Strong reception to the postcard with more attention to DEI by female, Asian, Black, Latiné, and multiracial voters is a positive sign that voting communication efforts such as those used in this study are timely and effective.

Findings from the underserved should inspire election officials and community organizations to revitalize voter communications. Sending postcards designed to educate and empower voting desert residents is a cost-effective starting point to advance social equity in elections. Imagery should be refreshed regularly to spotlight the humanity and real contexts of young and diverse residents.

Messages must include topics of economic interest to the target market. Designs need to be modernized to appeal to first-time voters who are primarily young

and diverse. Investing in multipronged communication strategies to minimize age and race gaps in elections has the long-term advantage of producing more representative elected officials and more equitable policy initiatives. This can improve the kinds of communities we live in.

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Appendix 1. Table with Variables, Definitions, Measures, Indicators

Variables	Definition	Measures	Indicator
Individual	Younger potential voter who lives in or attends university in Denver, Colorado	Participants must be between ages 18–30 to participate in the study. They must live in or attend school in Denver County, Colorado.	Individuals scan a recruitment flyer QR code if they qualify for the study.
Age	The literature suggests that people who have not voted by age 30 are highly unlikely to ever do so. Target age range for the study is ages 18–30.	Younger than 18: survey stops Ages 18–30: survey continues Age 31+: survey stops	Data from survey Q2
Gender	How individuals identify in terms of gender	Male Female Transgender/Prefer not to say	Data from survey Q3
Partisanship/Voting history	Who did the person cast a ballot for in the last presidential election?	I didn't vote in the last presidential election Joseph Biden Donald Trump Someone else I prefer not to say	Data from survey Q4
Living in a voting desert or not	Does the person live in a Denver zip code containing a voting desert?	Respondents living in Denver County were given the choice of Denver mailing zip codes. Zip codes containing voting deserts are 80014, 80204, 80205, 80210, and 80239.	Data from survey Q9
Language of choice	What language does the individual speak at home?	English Spanish Other	Data from surveys Q9 and Q10

<p>Race</p>	<p>How does the individual self-identify in terms of race?</p>	<p>Written response for other American Indian or Alaska Native, Asian Pacific Islander, Black, Latiné, White, some other race, two or more races, prefer not to say</p>	<p>Data from survey Q11</p>
<p>Intention to vote in the next election (dependent variable)</p>	<p>Intention to vote after viewing a postcard image about a minimum wage policy problem, the solution of voting, and control or treatment images with varying attention to DEI</p>	<p>A score of seven or higher on a 10-point Likert scale</p>	<p>Data from survey Q12</p>

Appendix 2. Survey Procedures and Questions

The survey covered all the key variables of interest and examined how likely participants were to feel motivated to vote in the next election after viewing a fictitious political postcard embedded in the last question of the survey. After the experimental instructions and decision screen, and the self-report measures in the survey instrument, the control group saw imagery featuring young white individuals in Denver’s voting deserts and the treatment group viewed an image featuring young people of color in Denver’s voting deserts. Respondents were given the researcher’s contact information if they wanted to follow up with questions, concerns, or feedback.

How Randomization Was Achieved

The differing QR codes on the recruitment flyers randomized research study volunteers into control and treatment groups. The researcher printed the same number of control and treatment flyers prior to dispersal. Next, she asked fellow university students to shuffle the treatment and control flyer stacks while she left the room. Seven hundred shuffled flyers (350 with a QR code to the control survey and 350 with a QR code to the treatment survey) were dispersed broadly in 20

locations throughout Denver County, including universities, supermarkets, restaurants, museums, and transportation hubs. To participate in the study, individuals used their cell phone cameras to scan the QR codes on the recruitment flyers. Doing so led them to a survey in Qualtrics.

Payments

The first 60 survey participants received a \$5 Amazon gift card.

Survey Questions

Q1. Terms of Consent

Q2. Age

- a. Younger than 18 – survey stops*
- b. Ages 18–30
- c. Age 31 + – survey stops*

*We’re sorry. You do not meet the qualifications for this survey. We appreciate your time and attempt to participate in this online research study.

Q3. Please indicate your gender

- a. Male
- b. Female
- c. Non-binary/third gender
- d. Transgender
- e. Prefer not to answer

Q4. Who did you cast a ballot for in the last presidential election?

- a. I didn't vote in the last Presidential election
- b. Joseph Biden
- c. Donald Trump
- d. Someone else
- d. I don't remember

Q5. Were you eligible to vote in the November elections in 2018, 2019, 2020, and 2021? Choose all that apply

- a. 2021
- b. 2020 (presidential election)
- c. 2019
- d. 2018

Q6. Did you have time to vote in the November elections in 2018, 2019, 2020, 2021? Choose all that apply

- a. 2021
- b. 2020 (presidential election)
- c. 2019
- d. 2018
- e. I don't remember

Q7. County of residence

- a. Denver County
- b. Other

Q8. If, yes for Denver County, (scroll to pick a zip code) – All 30 Denver zip codes were included in the dropdown. Option 31 had an option for “Other.”

Q9. Language of choice at home

- a. English
- b. Spanish
- c. Other

Q10. If “other language” is chosen

- a. Language of preference: Fill in the blank

Q11. Race

- a. American Indian or Alaska Native
- b. Asian/Native Hawaiian/Other Pacific Islander
- c. Black or African American
- d. Latiné
- e. White
- f. Some other race
- g. Two or more races
- h. Prefer not to answer

Q12. Participants receive Postcard A (control) or Postcard B (treatment)

What is your intention to vote in the next election?

10-point Likert scale, “not motivated to vote” to “highly motivated to vote”

Appendix 3. Control and Treatment Postcards Inside the Qualtrics

The Minimum Wage NEEDS TO BE A Living Wage




VOTE*

*Check your registration at govotecolorado.com

Colorado's current minimum wage is \$12.65 for regular workers and \$9.54 for tipped employees.
Do low wages cause you stress?

TREATMENT

The Minimum Wage NEEDS TO BE A Living Wage



VOTE*

*Check your registration at govotecolorado.com

Colorado's current minimum wage is \$12.65 for regular workers and \$9.54 for tipped employees.
Do low wages cause you stress?

Appendix 4. Table with Summary Statistics

	Control	Treatment
Total Participants	195	221
Female	132	149
Male/non-binary/transgender/prefer not to say	63	72
Who did you cast a ballot for in the last presidential election?		
I didn't vote in the last Presidential election	50	65
Joseph Biden	96	134
Donald Trump	44	10
Someone else/I don't remember	5	12
Language of choice at home		
English	175	172
Spanish and other languages	20	49
Race		
American Indian or Alaska Native	3	2
Asian/Native Hawaiian/Other Pacific Islander	10	33
Black or African American	11	14
Latiné	30	48
White	110	93
Some other race	2	4
Two or more races	24	23
Prefer not to answer	5	3

Appendix 5. Table Showing Relationship between Treatment Group and Score for “Intention to Vote in the Next Election” after Viewing Image of Voting Postcard Embedded in Survey Question 13

	Control	Treatment	Total
Intention to vote in the next election after viewing postcard			
Highly unlikely to vote 1	12	11	23
2	2	3	5
3	7	2	9
4	10	6	16
5	19	20	39
6	10	16	26
7	26	39	65
8	28	24	52
9	17	14	31
Highly likely to vote 10	64	86	148
Total N	195	221	416

Appendix 6. Table with Average Treatment Effect on the Treated Group Using Inverse Probability Weights

Intention to Vote		Coefficient Std. Error		z	P>[z]	95% Confidence Interval	
Gender							
Female	ATET treatment (1 vs. 0)	.6218731	.2811028	2.21	0.027	.0709218	1.172824
	PO mean treatment	7.431818	.2137903	34.76	0.001	7.012797	7.850839
Voting History							
Trump voter	ATET treatment (1 v.s 0)	1.659091	.8248862	2.01	0.044	.0423438	3.275838
	PO mean treatment	6.340909	.3747495	16.92	0.001	5.606414	7.075405
Race							
White	ATET treatment (1 vs. 0)	.8081134	.3640826	2.22	0.026	.0945246	1.521702
	PO mean treatment	7.009091	.2704436	25.92	0.001	6.479031	7.539151
Some other race	ATET treatment (1 vs. 0)	6	1.5	4.00	0.001	3.060054	8.939946
	PO mean treatment	3	1.414214	2.12	0.034	.2281924	5.771808
Prefer not to say	ATET treatment (1 vs 0)	-4.46667	1.702112	-2.62	0.009	-7.802745	-1.13058
	PO mean treatment	6.8	1.308434_	5.20	0.001	4.235516	9.364484