During the 2016 United States Election, Minority Women are Negatively Impacted by Texas' Voter ID Law and It Needs to Be Fixed*

Emily Su

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In 2016, Texas allowed voters without valid photo ID to vote in the 2016 United States election after the 2011 voter ID law was deemed to be discriminatory against minorities. This paper extends research done on Texas voters without valid photo IDs by focusing on female voters of different races without valid photo IDs across different counties. Our results showed that despite the relaxation of the voting law, the voter turnout rates of minority women without photo IDs were lower than White women without photo IDs and highly populated counties had the highest percentage of female voters without valid photo IDs. These results suggests that the 2011 voter ID law still had an effect on female voters, especially minority women and further investigation needs to be done on the reasons some women in Texas did not vote in 2016.

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*Data and code are available at: https://github.com/moonsdust/voting. The replication on Social Science Reproduction Platform can be found here: https://doi.org/10.48152/ssrp-cbev-p353

1 Introduction

In 2011, Texas became the largest state that implemented a strict photo ID law for voting (Fraga and Miller 2022). Later on in 2016, the voter ID law was ruled to be purposely discriminatory against minorities (Malewitz 2017). In the same year, the United States (US) election was held and Texas allowed individuals without a valid photo ID to vote as long as they filled out a Reasonable Impediment Declaration (RID) to explain why they don't have a valid photo ID. But this raises the following questions: What barriers did people without a valid photo ID face during the 2016 US election? What was the demographic like for voters without valid photo IDs? What counties had the most individuals who were unable to present a valid photo ID on election day?

In Bernard L. Fraga and Michael G. Miller's paper "Who Do Voter ID Laws Keep from Voting?", they conducted research into the barriers of voters who filled out an RID and who voter ID laws prevented from voting. Fraga and Miller found that Black and Latinx voters in 2016 without a valid photo ID were less likely to vote when the photo ID law was in place (Fraga and Miller 2022). They also found that the majority of voters who filled out a RID had a photo ID but were unable to present it at the polling places (Fraga and Miller 2022). However, Fraga and Miller (2022) did not delve into the specifics of the different counties with the most number of voters who filled out the RID and did not look into specific genders. Asian voters who filled out a RID were also excluded from a majority of the figures in the paper (Fraga and Miller 2022).

In this paper, the reason dataset from Fraga and Miller (2022)'s paper was used to investigate the demographic and barriers faced by female voters in Texas from four groups (White, Black, Asian, and Latinx) who filled out a RID during the 2016 United States election. The estimand we studied was the effect of Texas reducing strict photo ID requirements in 2016 on female voter turnouts across different counties and races. In our findings, the number of minority women who filled out a RID in 2016 was lower than White women. We also found that the most common barrier for Latinas and Black women was "ID was lost or stolen" and for Asian women it was because of "Other reasons" and specifically for "Relocation" reasons. For White women, they also specified "Other reasons" but their reasons were commonly related to "Hardship". We also discovered that highly populated counties like Harris, Travis, and Dallas had the largest percentage of female voters without a photo ID overall in 2016. Understanding the intersection of race and gender and how specific groups are impacted by laws like Texas' voter ID law can aid in addressing potential inequalities in future laws in the United States and beyond.

For the rest of the paper, the data section will cover the datasets used and how they were created, define variables used by our tables and graphs, and briefly explain our methodology (related to data cleaning, packages used, etc.). In the results section, we will reveal tables and graphs made on our datasets and explain what they show. In the discussion section, we will connect back to the real world and explain what the results could mean, the implications of our results, potential areas of improvement for the paper, and suggestions for future works. Finally, the appendix section will include a table that corresponds to a figure from our results and other information.

2 Data

This paper investigated Fraga and Miller (2022)'s paper claim that the common reason registrants do not have photo IDs is not due to socioeconomic hardships with a focus on female voters in Texas from four groups: White, Black, Asian, and Latinx. We also extended their research to the county level looking at which counties the female voters are from. In the analysis, the paper used two datasets, `cleaned_reason_data.csv` and `cleaned_map_data.csv`. `cleaned_reason_data.csv` is from the paper we replicated (Fraga and Miller 2022) where its original dataset "fraga_miller_reasons_replication" is a Stata file (StataCorp 2023). The other dataset is a hybrid dataset where female voter counts come from "fraga_miller_reasons_replication" (Fraga and Miller 2022) and geometry data on Texas comes from Texas Open Data Portal's "County Map - StratMap_County_poly" dataset, which is publicly available (Texas Open Data Portal 2024). We have also looked into other datasets to reconstruct the map of Texas but they were not selected since they did not mention the counties' names.

2.1 Data Source and Measurements

2.1.1 Reason Dataset

`cleaned_reason_data.csv`

In 2016, individuals in Texas without a valid photo ID could vote in the 2016 United States election as long as they filled out a RID (Fraga and Miller 2022). The RID forms were available in languages such as English, Vietnamese, Spanish, or Chinese. The form asked for the voter's name, signature, a form of non-photo ID such as a current utility bill and the reason they are not able to present a valid photo ID at the polling place. The form provided the following options for reasons: Family Obligations ("family" in the dataset); Photo ID applied for but not received ("applied" in the dataset); Lack of Transportation ("transport" in the dataset); Lack of birth certificate or other documents needed to obtain acceptable photo ID ("birthcert" in the dataset); Disability or Illness ("disability" in the dataset); Work schedule ("work" in the dataset); Lost or stolen photo ID ("lost" in the dataset); Other reasonable impediment or difficulty ("other" in the dataset) (Fraga and Miller 2022). Due to the Texas Public Information Act, Fraga and Miller (2022) was able to request 16,097 RID forms from the 2016 US election. Fraga and Miller (2022) also obtained a copy of the Texas voter registration file in 2017 from the Texas Secretary of State. These two sources were then merged to get further information on voters from the RIDs. Since the RIDs do not contain information about a voter's race and ethnicity, they used an R package, wru (R Core Team 2023) to get estimates of every voter's race based on address, surname, sex, and birthday (Fraga and Miller 2022). The three sources were then recorded into a spreadsheet where each row represents one form containing information about the voter's county, gender, race, and reason they don't have a valid ID. For the RIDs where the voter has indicated "Other" and wrote down a reason, Fraga and Miller (2022) and their research assistants took note of the reason and categorized their reason into three categories based on their discretion: Relocation ("relocation" in the dataset), Hardship ("hardship" in the dataset), and ID-Capable ("id_capable" in the dataset). "Relocation" are reasons that mentions recently moving, being a student, or waiting for a new ID (Fraga and Miller 2022). "Hardship" are reasons where hardships prevented the voter from getting a valid photo ID (Fraga and Miller 2022). ID-Capable are given to voters who were able to get a photo ID in the past (Fraga and Miller 2022). This spreadsheet was then turned into a dataset, which is available on Dataverse (Kuriwaki, Beasley, and Leeper 2023).

2.1.2 Cleaned Map Dataset

`cleaned_map_data.csv`

One half of the dataset comes `cleaned_reason_data.csv` while the other half comes from the "County Map - StratMap_County_poly" dataset, which is available on the Texas Open Data Portal (Texas Open Data Portal 2024). The dataset contains geometry data (also known as "the_geom" in the dataset) that reconstructs a map of Texas and it also reconstructs

the boundaries of Texas' counties (also called "county" in the dataset). These boundary coordinates were obtained by the Texas Open Data Portal team (Texas Open Data Portal 2024) using the United States Geological Survey's digital 7.5 minute Topology Maps, who obtain their data from satellites every 3 years (United States Geological Survey 2024).

2.2 Methodology

The datasets used in this paper were retrieved, simulated, cleaned, analyzed, and tested using the R programming language (R Core Team 2023), tidyverse (Wickham et al. 2019), haven (Wickham, Miller, and Smith 2023), knitr (Xie 2014), janitor (Firke 2023), dplyr (Wickham et al. 2023), ggplot2 (Wickham 2016), sf (Pebesma and Bivand 2023), readr (Wickham, Hester, and Bryan 2024), dataverse (Kuriwaki, Beasley, and Leeper 2023), and ggpubr (Kassambara 2023).

For the Reason dataset, a new column called "white" was constructed to indicate if the voter was white or not since it was not in the original dataset. For the cleaned map data, the columns, "female_count", "female_white", "female_black", "female_asian", and "female_latinx" were created from `cleaned_reason_data.csv` by filtering for female voters and summing the number of voters of each race. The cleaned reason dataset has around 16104 observations while the cleaned map dataset has 254 observations.

3 Results

3.1 Texas females who voted without a photo ID during 2016 United States election

Table 1: Percent of Texas Voters who are female versus not female who voted in 2016 United States election without a photo ID.

Female	Not Female
0.57	0.43

Table 2: Number of female voters across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of female voters without a photo ID. The right column is the number of female voters for each county.

County	Number of Female Voters
Harris	1570

Table 2: Number of female voters across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of female voters without a photo ID. The right column is the number of female voters for each county.

County	Number of Female Voters
Travis	1207
Dallas	752
Collin	518
Tarrant	442
Hidalgo	355

Table 3: Minimum, quartiles, median, mean, and maximum of female voter turnouts across Texas counties during 2016 United States election without a photo ID.

Number of female voters with no photo ID
Min. : 0.0
1st Qu.: 0.0
Median : 4.0
Mean : 35.7
3rd Qu.: 16.0
Max. :1570.0

Table 1 reveals that 57% of Texas voters who filled out the RID from our dataset, which contains 16104 observations, were females while 43% were not females. From Figure 1 and Table 2, the five counties with the largest number of female voters who did not present a photo ID at the polling place in 2016 are Harris (1570 voters), Travis (1207 voters), Dallas (752 voters), Collin (518 voters), Tarrant (442 voters), and Hidalgo (355 voters).

We will first define the following: mean means the average value amongst the dataset, median means the data point found in the middle of a dataset, and the standard deviation is how far are values from the mean of a dataset. According to Table 3, the mean number of female voters without a photo ID across different counties was 36 voters, the median was 4 voters, and the standard deviation was 144 people.

In Figure 1, these counties are in a lighter colour, indicating a higher number of female voters who filled out RIDs. However, Travis and Harris are light blue compared to Dallas, which is dark blue. When looking at the difference in female voters between Travis and Dallas, they have a gap of 455 voters. To understand the numbers, we will look at the counties' population numbers in 2016 and median income from 2012 to 2016 that are provided by the U.S. Census Bureau. The counties' population on June 1, 2016, are the following: Harris (4,617,041), Travis

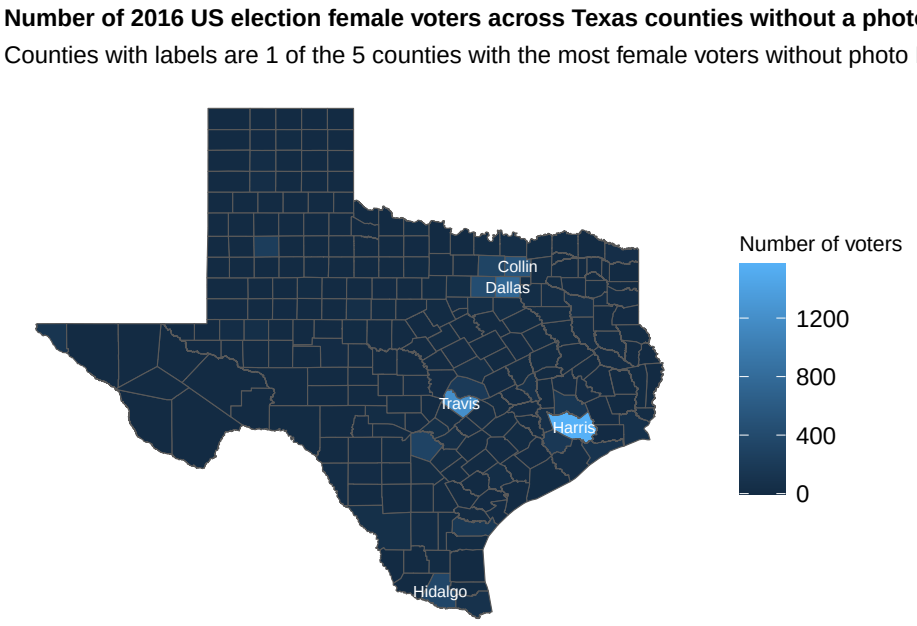

Figure 1: Number of female voters across Texas counties during 2016 United States election without a photo ID

(1,204,582), Dallas (2,587,462), Collin (942,453), Tarrant (2,021,746), and Hidalgo (850,187) (U.S. Census Bureau 2017). When looking at the population numbers, the populations of Harris, Travis, and Dallas were greater than one million in 2016. The percent (rounded to two decimal places) of each county's population who are female voters that filled out a RID are 0.03% for Harris, 0.10% for Travis, and Dallas, Collin, Tarrant and Hidalgo are under 0.01%. This reveals that Travis had the largest percent of female voters without a photo ID.

Now with median income, the counties' median incomes from 2012 to 2016 are $55,584 for Harris, $64,422 for Travis, $51,411 for Dallas, $86,188 for Collin, $60,373 for Tarrant, and $36,094 for Hidalgo with Texas' average median income being $55,508 (U.S. Census Bureau 2016). The average median incomes of the five counties are above the median income except for Dallas and Hidalgo.

3.2 Texas females who voted without a photo ID during 2016 United States election (Across Race)

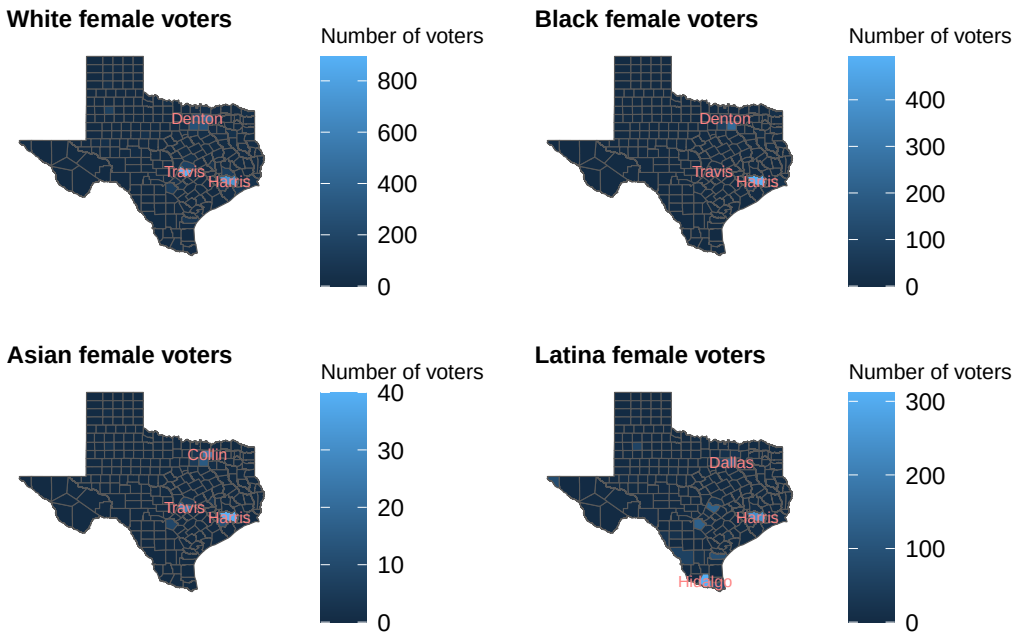

Figure 2: Number of female voters of different races across Texas counties during 2016 United States election without a photo ID

Table 4: Number of White female voters of different races across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of White female voters without a photo ID. The right column is the number of White female voters for each county.

County	Number of Female Voters
Travis	895
Harris	706
Collin	432
Dallas	298
Tarrant	280
Denton	255

Table 5: Number of Asian female voters of different races across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of Asian female voters without a photo ID. The right column is the number of Asian female voters for each county.

County	Number of Female Voters
Harris	40
Travis	27
Collin	24
Dallas	15
Fort Bend	12
Bexar	9

Table 6: Number of Black female voters of different races across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of Black female voters without a photo ID. The right column is the number of Black female voters for each county.

County	Number of Female Voters
Harris	493
Dallas	248
Tarrant	81
Travis	64
Fort Bend	56
Denton	32

Table 7: Number of Latina female voters of different races across Texas counties during 2016 United States election without a photo ID. The left column contains the five county names with the most number of Latina female voters without a photo ID. The right column is the number of Latina female voters for each county.

County	Number of Female Voters
Hidalgo	312
Harris	238
Dallas	137
Travis	136
Bexar	132
Nueces	89

Table 8: Minimum, quartiles, median, mean, and maximum of female voter turnouts across Texas counties during 2016 United States election without a photo ID categorized by race.

Number of White female voters with no photo ID	Number of Asian female voters with no photo ID	Number of Black female voters with no photo ID	Number of Latina female voters with no photo ID
Min. : 0.00	Min. : 0.0000	Min. : 0.000	Min. : 0.000
1st Qu.: 0.00	1st Qu.: 0.0000	1st Qu.: 0.000	1st Qu.: 0.000
Median : 2.00	Median : 0.0000	Median : 0.000	Median : 0.000
Mean : 21.47	Mean : 0.5787	Mean : 4.827	Mean : 7.185
3rd Qu.: 11.00	3rd Qu.: 0.0000	3rd Qu.: 0.000	3rd Qu.: 2.000
Max. :895.00	Max. :40.0000	Max. :493.000	Max. :312.000

Figure 2 shows the number of female voters who did not have a photo ID in Texas of the following groups: White, Black, Asian, and Latina. Figure 2, Table 6, and Table 4 reveal that for White and Black females, most female voters who filled out a RID were mostly in Denton, Travis, and Harris. Table 7, Table 5, and Figure 2 show Hidalgo, Harris, and Dallas had the largest number of Latina voters fill out a RID while Harris, Travis, and Collin had the largest number of Asian female voters who filled out a RID.

When comparing the mean and median from Table 3 to Table 4 and Table 7, the five counties with the most number of White female and Latina who filled out a RID are above the mean and median number of female voters who filed out a RID. When observing Table 6 and Table 3, the number of Black females who filled out a RID was above the mean (36 voters) and median number of female voters (4 voters) who filled out a RID in the counties Harris, Dallas, Tarrant, Travis, and Fort Bend. However, with Denton, the number of Black females who filled out a RID (32 voters) was below the mean (36 voters) and above the median (4 voters) number of female voters who completed a RID. Table 3 and Table 5 reveal that Harris, which had the most number of Asian female voters without a photo ID at 40 voters, is above the mean and median of 36 voters and 4 voters respectively. However, for the other four counties like Travis, the number of Asian female voters without a photo ID was below the mean but above the median.

Taking a look at Table 8, we see that the mean and median for White, Asian, Black and Latina females are below the mean and median of the number of female voters across Texas who filled out an RID. However, White females had a median of 2 voters while other groups of females had a median of 0. White females also have the highest mean number of voters who filled out an RID at 21 voters, followed by Latina with 7 voters, Black females with 5 voters, and Asian females had the smallest mean at 1 voter.

3.3 Reasons of Texas females across different races without a photo ID during 2016 United States election

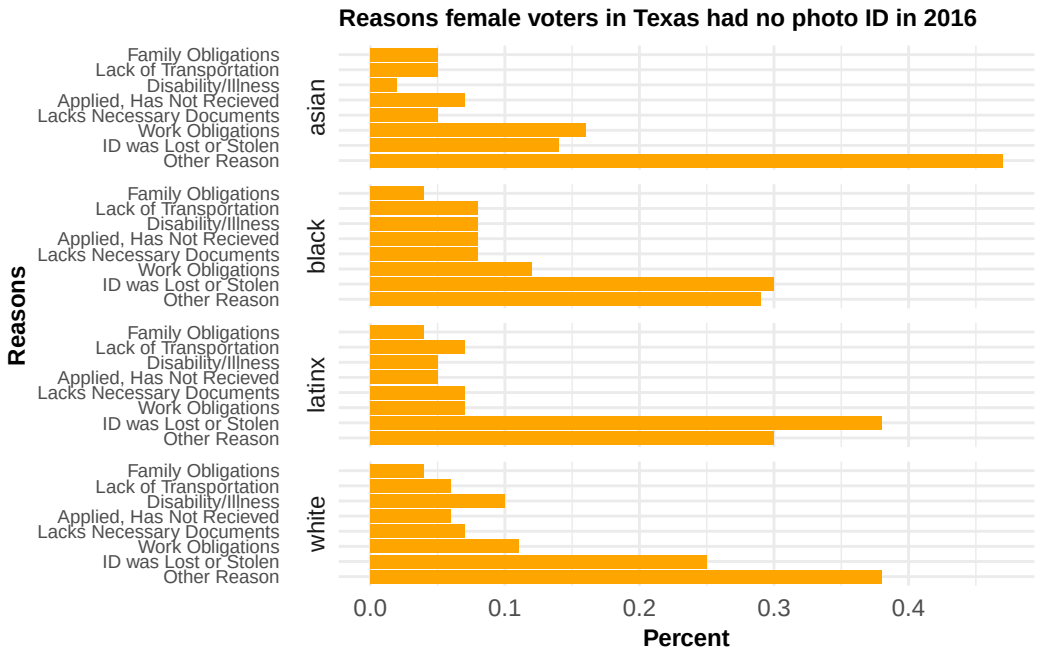

Figure 3: Impediments of female voters of different races across Texas counties during 2016 United States election without a photo ID

Figure 3 and Table 10 reveal the RID options that were selected by female voters who were unable to present a photo ID at the polling place. Figure 3 and Table 10 show that for Asian females and White females, the option that was most commonly selected was "Other Reason", which made up 47% and 38% of their RIDs, respectively. For Black female and Latina voters, "ID was lost or stolen" was the most common reason at 30% and 38% of their RIDs.

A difference between what Fraga and Miller (2022) found and our result is that in terms of the commonly cited reason is that Fraga and Miller (2022) found that Black voters cited "Other Reason" and ID was Lost or Stolen equally in 30% of their RIDs. In our results as seen in Table 10 and Figure 3, "Other Reason" was selected less, which composed 29% of RIDs from Black female voters.

Table 9: Other impediments of female voters of different races across Texas counties during 2016 United States election without a photo ID

percent	reasons	race
0.32	Relocation	white

Table 9: Other impediments of female voters of different races across Texas counties during 2016 United States election without a photo ID

percent	reasons	race
0.33	Hardship	white
0.29	ID-Capable	white
0.27	Relocation	black
0.34	Hardship	black
0.34	ID-Capable	black
0.16	Relocation	latinx
0.31	Hardship	latinx
0.46	ID-Capable	latinx
0.47	Relocation	asian
0.30	Hardship	asian
0.18	ID-Capable	asian

Figure 4 and Table 9 show the percent of the type of reasons that were given by female voters who selected the "Other Reason" option in the RID. Table 9 and Figure 4 reveal that for Asian females who selected this option, their most common reasons were related to "Relocation" (at 47%). For Black females, their most common reasons were related to "ID-Capable" and "Hardship" at 34% for each. For Latinas, their most common reason was related to "ID-Capable) at 46% and for White females, it was"Hardship" at 33%. These results are also seen in Fraga and Miller (2022)'s study with Black, Latinx, and White voters in Texas for the barriers mentioned in the "Other Reason" option.

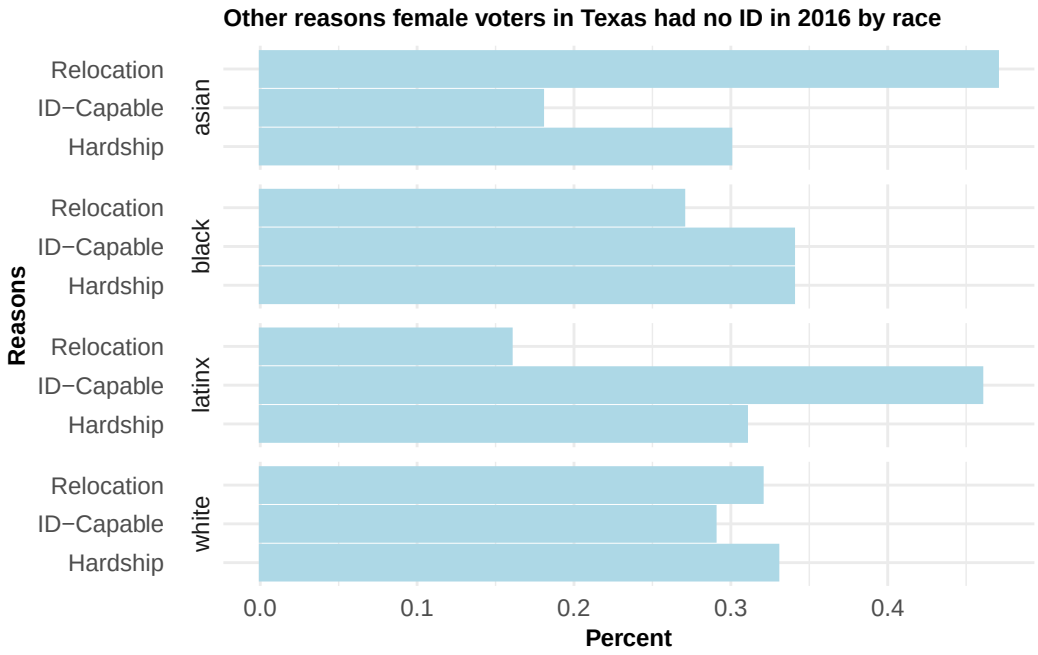

Figure 4: Other impediments of female voters of different races across Texas counties during 2016 United States election without an ID

4 Discussion

4.1 Females versus Non-females and county turnout rates

From Section 3.1, we found that 57% of the RIDs that were collected were filled out by females. This suggests that strict ID laws impact females the most. We also found that highly populated counties like Harris, Travis, and Dallas, had the largest percentage of female voters without valid photo IDs during the 2016 US election. The reason this could be the case is due to the counties' large populations and thus there being more women who would want to vote but are unable to with strict ID laws. The large population could also mean that information is spread about the RIDs and the relaxation of the ID law.

Section 3.3 showed that Harris, Travis, and Dallas show up in the top five counties with the largest number of women who voted without a valid ID for different groups of women voters who filled out an RID. This could be due to them being one of the more diverse counties and according to Fraga and Miller (2022) could mean that women, especially from historically disadvantaged groups, feel less hostility to go to polling places after the 2011 Texas Voter ID law (Slacker 2021).

4.2 Barriers of women across different races

We found that White women mostly selected "Other reasons" in their RIDs with their specific reason being "Hardship". For Latinas and Black women, most selected "ID was lost or stolen" and for Asian women most selected "Other reasons" and specified "Relocation" reasons. This is also seen in Fraga and Miller (2022)'s paper on voters who are Black, Latinx, and White.

4.3 Fewer minority women filled out the RID

In Section 3.3, the majority of the women who filled out a RID were white with a mean number of 21 voters while the mean number of Asian female, Black female, and Latina voters was 1 voter, 5 voters, and 7 voters, respectively. These numbers could be attributed to the fact that some women protested against the strict Texas laws and some were not aware that Texas lightened its voting law (Fraga and Miller 2022; Presha and Stewart 2021).

Historically, minority groups like Black people, were denied access to hospitals in the US and therefore many were born at home without a birth certificate (Presha and Stewart 2021). Therefore, there are cases where older women from historically disadvantaged groups were unable to fill out the RID in 2016 due to them not having a birth certificate, which could explain the gap we see between White women and minority women (Presha and Stewart 2021). Black women were also legally not allowed to vote in Texas until the 1960s and therefore women from minority groups might have been more hesitant to vote during the 2016 United States election (Rice 2019).

4.4 Areas of Improvement

We faced several limitations during our analysis. One of the limitations is that the datasets we used are not necessarily accurate with reality. In the reason dataset that was used in this paper that was provided by Fraga and Miller (2022), race was predicted by the authors since they were not indicated in the RIDs. This means that the actual race of the person each row in the dataset corresponds to may not be reflected in the dataset. Since Fraga and Miller (2022) and their research assistants inputted the data but hand, human error may have occurred, which includes a reason and the county name being inputted incorrectly on purpose or by mistake.

4.5 Next steps

Further investigation could be conducted on the reasons why some women in Texas did not vote during the 2016 US election. Another investigation could be made into the age of women who voted in the 2016 US election by filling out a RID as well.

Appendix

.1 Acknowledgments

We would like to acknowledge Alexander (2023) for some of the R code used in this paper to produce the tables and graphs.

.2 Datasets Used

Due to the length of the datasets horizontally, presenting glimpses of the datasets was not possible in the paper. However, the cleaned datasets that was used can be found here: https://github.com/moonsdust/voting/tree/main/data/analysis_data.

.3 Tables from Results

Table 10: Impediments of female voters of different race across Texas counties during 2016 United States election without a photo ID

percent	reasons	race
0.04	Family Obligations	white
0.06	Applied, Has Not Recieved	white
0.06	Lack of Transportation	white
0.07	Lacks Necessary Documents	white
0.10	Disability/Illness	white
0.11	Work Obligations	white
0.25	ID was Lost or Stolen	white
0.38	Other Reason	white
0.04	Family Obligations	black
0.08	Applied, Has Not Recieved	black
0.08	Lack of Transportation	black
0.08	Lacks Necessary Documents	black
0.08	Disability/Illness	black
0.12	Work Obligations	black
0.30	ID was Lost or Stolen	black
0.29	Other Reason	black
0.04	Family Obligations	latinx
0.05	Applied, Has Not Recieved	latinx
0.07	Lack of Transportation	latinx
0.07	Lacks Necessary Documents	latinx
0.05	Disability/Illness	latinx

Table 10: Impediments of female voters of different race across Texas counties during 2016 United States election without a photo ID

percent	reasons	race
0.07	Work Obligations	latinx
0.38	ID was Lost or Stolen	latinx
0.30	Other Reason	latinx
0.05	Family Obligations	asian
0.07	Applied, Has Not Recieved	asian
0.05	Lack of Transportation	asian
0.05	Lacks Necessary Documents	asian
0.02	Disability/Illness	asian
0.16	Work Obligations	asian
0.14	ID was Lost or Stolen	asian
0.47	Other Reason	asian

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