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A Letter From the Editor

Welcome to the 2019 edition of *Sigma*. Within these pages, you will find some of the most impressive scholarship produced by undergraduate students here at Brigham Young University. However, the findings and analyses generated by these student researchers have implications far beyond classrooms in Provo, Utah. Their work addresses myriad topics from terrorism to the environment to women in politics; they delve into issue framing, the roots of political attitudes, and theories with true academic rigor. This multifaceted and clear-cutting examination of current political topics represents hundreds of hours of work from students. As editor, I hope you enjoy the originality and nuance each paper exhibits.

The message of this year's edition of *Sigma* encompasses a great deal: immigration, interpersonal relationships, terrorism, fear, "Me Too," political rhetoric, environmentalism, female political representation in sub-Saharan Africa, and methods of political activism. I believe it is a reflection of the political reawakening gripping the U.S. and the world. Now is a time when global citizens, including many young people, feel compelled to take action and grapple with political and ethical challenges. Political science students at BYU are seeking to understand how fear, media, rhetoric, and social interaction are affecting political processes in the world today. The papers selected for this publication show the eagerness of our generation to contribute to answering these questions and provide an example to others that they need not wait to become involved.

As we send *Sigma* to press, the editorial team and I have the opportunity to extend our thanks to the many people who made it possible. First off, our fantastic authors, who not only chose to write these papers but also stood by them (and us) through numerous rounds of edits, deadlines, and eleventh-hour requests. We also wish to thank the many professors who lent their expertise to the editing process for specific papers. Their help and experience was invaluable. Our gratitude also goes to the editorial team who dedicated their time to minute readings and re-readings of these papers. Finally, we have to thank our readers, who ensure that there is an audience for the scholastic conversation these papers represent.

We hope you enjoy *Sigma*. We hope you question the results, the methods, the logic, the conclusions, and enter the conversation yourself in the next edition. We can only hope that our understanding of the topics addressed here, from immigration to healthy relationships and everything in between, may continue to expand.

Sincerely,

Rachel Finlayson
Editor-in-Chief

The Effects (or Lack Thereof) of Immigration on U.S. Crime Rates

Kelly N. Duncan and Gabe Darger

Introduction

Since the attacks of 9/11 and the War on Terrorism, many U.S. citizens have expressed concern over the impact immigrant populations have on the U.S., particularly on crime rates (Beck 2014). These concerns have been co-opted into fear-based political messaging used to influence public opinion with sensational imagery and hearsay. Current U.S. President Donald Trump has been open in expressing criticism of immigrant populations. During Trump's presidential bid in 2015, he said, "When Mexico sends its people, they're not sending their best [. . .] They're bringing drugs. They're bringing crime. They're rapists. And some, I assume, are good people" (C-SPAN 2015).

Reaching a critical mass, this political messaging has begun to influence policy and proposals. On 25 January 2017, Trump signed Executive Order 13767, detailing plans to build a southern border wall, which he estimated to cost between \$6 to \$10 billion (Associated Press 2017). On that same day, Trump also signed Executive Order 13768, cutting federal funding to sanctuary cities (Trump 2017). Citing the threat of terrorism, Trump's administration instituted a travel ban two days later, which barred travelers from Iran, Iraq, Libya, Somalia, Sudan, Syria, and Yemen (Trump 2017). In February 2018, the U.S. Citizenship and Immigration Services agency removed the words "a nation of immigrants" from its mission statement (Hauslohner 2018).

However, these policies ignore the actual rates of crime in the United States. In the years between 1990 and 2013, the proportion of foreign-born members of the U.S. population grew from 7.9 to 13.1 percent. Similarly, the estimated population of unauthorized immigrants nearly quadrupled from 3.5 million to 11.2 million (Ewing,

Martinez, and Rumbaut 2016). During these same decades, the FBI reported that violent crime rates decreased by 48 percent and property crime decreased by 41 percent (Ewing et al. 2016).

Despite this reduction in crime, news outlets, political commentators, and the current administration have cited anecdotal cases and offered high-profile reports depicting horrific crimes committed by undocumented immigrants. On 22 June 2018, the White House hosted families of deceased victims who passed away due to illegal immigrants. President Trump said, “These are the stories that Democrats [. . .] don’t want to discuss, they don’t want to hear, they don’t want to see, they don’t want to talk about.” Multiple families hosted at that event, however, lost loved ones in traffic-related tragedies, not tragedies of violent crime as the Trump Administration was suggesting (Horsley 2018). Stories like these have helped feed a national dialogue of hysteria, fear, and calls for mass deportation and immigration reform.

The abundance of these anecdotes runs contrary to our comparative findings. In this paper, we will provide background research and discuss our theories, data, methods, and results that measure changes in immigration rates and crime rates over time. Using fixed-effects models, we find that immigration levels have no effect on—and in some cases actually reduce—rates of crime. Proponents of immigration reform cannot therefore refer to rising crime statistics as sufficient reason to enact stricter immigration policies.

Conceptual Framework and Background

There is a considerable existing field of research that studies the relationship between immigration and crime. Much of this research found there is no positive correlation or association between immigration and the rates of property or violent crime (Chalfin 2013; Klein, Allison, and Harris 2017; Lee, Martinez, and Rosenfeld 2001). Hagan and Palloni (1999) conclude that Latino immigrants are “disproportionately young males who, regardless of citizenship, are at greater risk of criminal involvement,” while Graif and Sampson (2009) find the “immigrant concentration is either unrelated or inversely related to homicide, whereas language diversity is consistently linked to lower homicide.” While some researchers found that immigrants are no more “inclined to commit crime than the native born” (Ousey and Kubrin 2014), others have discovered second-generation immigrants, who have assimilated to U.S. culture, are just as likely to commit crime as native-born Americans (Bersani 2013; Morin 2013). In an extended study, Ousey and Kubrin (2017) found that immigration has negative effects on crime, but these effects are so small that they are essentially null.

While past studies have been constructive, they have lacked elements of external validity by either focusing on specific ethnic immigrant groups or implementing a difference-in-difference framework on only a few select cities. Furthermore, past studies do not include the most recent data on immigration and crime trends. Our study focuses on a macro-level analysis of the effects of immigrant populations on crime rates at the state level and employs a series of difference-in-difference models.

Discussion of Theories

One theoretical perspective that speaks to the nature of immigrants is the self-selection theory. It suggests that immigrant populations have disproportionately low levels of crime, because they are self-selected ambitious individuals with economic goals in mind (Borjas 1988). Because so many immigrants leave their home countries looking for economic opportunity, they tend to be hardworking individuals who are goal-oriented and are looking for long-term advancement in their new communities. As a whole, immigrant populations tend to avoid encounters with the law.

Another theory relating to immigration revolves around the cities and states that accept immigrant populations. Martinez-Schuldt and Martinez (2017) released a study that observed violent crime rates specifically in sanctuary cities and found that policies implemented by sanctuary cities are either unrelated or sometimes inversely related to crime. In direct contrast to Trump’s claims that funding for sanctuary cities should be cut because they have “resulted in so many needless deaths” (Los Angeles Times Staff 2016), Martinez-Schuldt and Martinez found that an increase in the city’s unauthorized Mexican population results in a predicted reduction of homicides in sanctuary cities. They also found that robbery rates are lower in sanctuary cities. According to this research, these municipal jurisdictions are not only sanctuaries to the immigrants they house but are safer for natives living in the city as well.

These theoretical perspectives allow us to make explicit predictions relating to the effect of immigrant populations on U.S. crime rates. With so much at stake for both current and prospective U.S. citizens, it is imperative that the Trump administration and state-level legislators are made aware of the effects their decisions can produce.

Data

To answer whether increased immigration leads to higher levels of violence, we have gathered comprehensive data that includes policy outputs, violent crime rates, immigrant populations, and English programs. In this analysis, we use the aggregate of data from the Correlates of State Policy (CSP) (Boehmke and Frederick 2012; Caughey and Warshaw 2015; Jordan and Grossmann 2017), which includes the effects of various policy outputs in all fifty states, as well as Washington, D.C., and has data beginning in the early twentieth century. Our analysis focuses on data specifically related to criminal justice, demographics (including varieties of immigrant populations), and immigration-related policy outputs.

Crime Data

The data measuring violent crime rates is provided by the U.S. Department of Justice (DOJ). The DOJ defines violent crime as “murder and non-negligent manslaughter, forcible rape, robbery, [or] aggravated assault” (2018). The DOJ also provides the data on property crime rates and defines it as: “Estimated property crime rate by state. Larceny-theft (except motor vehicle theft)—the unlawful taking, carrying,

leading, or riding away of property from the possession or constructive possession of another. Examples are thefts of bicycles, motor vehicle parts and accessories, shoplifting, pocket-picking, or the stealing of any property or article that is not taken by force and violence or by fraud. Attempted larcenies are included. Embezzlement, confidence games, forgery, check fraud, etc., are excluded" (2018). All crime data also includes those committed by gangs. These crime measures are collected by the DOJ by collecting data from all agencies that they have reports on as well as estimations for areas of that data. The DOJ's sources include the Federal Bureau of Investigation (FBI) as well as Uniform Crime Reports prepared by the National Archive of Criminal Justice Data (2018).

Immigrant Population Data

The data measuring new immigrant populations is provided by the U.S. Department of Homeland Security (DHS) and defines members as: "Persons obtaining legal permanent resident status [. . .] A permanent resident is defined as a Green Card holder who has been granted lawful authorization to live and work in the United States on a permanent basis. As proof of that status, a person is granted a permanent resident card, commonly called a 'Green Card'" (2011).

Data related to undocumented immigrants is defined as the "estimated number of unauthorized immigrants in a state [. . .] Figures are estimates by the Pew Hispanic Center, not actual counts" (Passel and Cohn). Estimates of unauthorized immigrants are not perfectly comprehensive and are subject to measurement error, but the methods conducted by the Pew Research Center are reliable and continue to improve. The Pew Research Center calculates the estimated number of non-immigrant visa overstayers using U.S. Visitor and Immigrant Status Indicator Technology (US-VISIT), which provides "computerized records of arrivals and departures and a means of checking the identity of the visitor with biometric data" (Passel and Cohn). In its most recent report, Pew predicted an average of 4 to 5.5 million visa overstayers in 2006. Estimating Border Crossing Card overstays (past the permitted thirty days) is more statistically challenging, but the research team uses a methodology created by Robert Warren, "a veteran demographer who was employed for many years at the U.S. Immigration and Naturalization Service, which has since been subsumed into DHS" (Passel and Cohn). This framework allowed Pew to arrive at an estimation of 250 to 500 thousand Border Crossing Card violators in 2006. The rest of the unauthorized migrant population entered the country illegally. "Some evaded customs and immigration inspectors at ports of entry by hiding in vehicles [. . .] Others trekked through the Arizona desert, waded across the Rio Grande or otherwise eluded the U.S. Border Patrol which has jurisdiction over all the land areas away from the ports of entry on the borders with Mexico and Canada" (Passel and Cohn). Pew estimated that 6 to 7 million migrants entered the country illegally in 2006 without inspection. While measurement error relating to undocumented immigrants is likely, the existing framework for measuring

this population implements some of the most effective technologies and methodologies available at this time.

The refugee total is measured by the "number of refugees arriving per state per fiscal year" and is provided by the U.S. Department of Health and Human Services (2018). Data related to the foreign-born population is also provided by the Pew Research Center, which has categorized the measurement simply as the "percentage of state population who are foreign born" (Reich 2017).

Policy Data

The data measuring whether a state adopted "state hate crime laws" were collected by Boehmke and Skinner (2012). Reich (2017) collected the data measuring the total "'accommodating' [sic] laws relating to immigrants passed in the year." Caughey and Warshaw (2015) collected the data measuring whether "English [is a] state's official language."

A total of thirty-one states have adopted English as their official language (Liu and Sokhey 2014). This piece of "official English" legislation has been propelled by interest groups such as ProEnglish, a declared hate group by the Southern Poverty Law Center (SPLC) (Beirich 2011). The founder of ProEnglish, John Tanton, prepared a memo for the Federation of American Immigration Reform questioning "the 'educability' of Latinos and warned of a coming 'Latin onslaught'" (Beirich 2011).

Past analyses have found a relationship between immigrant population size and the adoption of English as the official language in state, but only during times when immigration is a national news topic (Liu and Sokhey 2014). In other words, states are more likely to respond with official English legislation when immigration is making headlines (Liu and Sokhey 2014).

With 80 percent of the U.S. speaking only English in the home, English is already the de facto official national language (U.S. Census Bureau 2013). Because English has no strong contenders in the U.S., the official English policy is an unnecessary piece of legislation that could signal implicit anti-immigrant sentiments. When enacted, the official English legislation has largely been coupled with immigration reform (Crawford 2008). Because of this relationship, we use this official English policy as a proxy to measure a state's exclusivity and protectionist ideals against immigrant populations.

Methods

We use the multi-period panel data to compare states with varying rates of new immigrant or refugee populations with each state's corresponding crime rates. We implement a difference-in-difference framework that observes rolling treatments over time and across space, while holding constant time-invariant variables in each state. This model accounts for all the unique time-variant factors that make each state different—such as culture and geography—and holds them constant. Our model also has state-specific time trends that control for all variation within states (Angrist and Pischke 2015).

A difference-in-difference model allows for the assumption that without immigration-specific policies and laws, treatment states would run parallel to the non-treated states. To measure this difference-in-difference, we refer to the equation below:

$$Y_{st} = \alpha + \delta_{rDD}IMMIG_{st} + \sum_{k=Alaska}^{Wyoming} \beta_k STATE_{ks} + \sum_{j=1960}^{2012} \gamma_j YEAR_{jt} + \sum_{k=Alaska}^{Wyoming} \theta_j (STATE_{jt} \times t) + e_{st}$$

The dependent variable represents the crime rates in state and year. The coefficient captures the causal effect of immigration rates and crime rates and captures variation of immigration in states within years. The coefficient includes state effects and is the coefficient for each state dummy. Time effects are coefficients on the year dummies. The coefficient captures state-specific linear trend parameters (Angrist and Pischke 2015).

Our difference-in-difference model offers a framework that allows us to measure the causal relationship between immigration and crime by state. This framework also introduces elements of nonparallel development between states and their varying rates of new immigrant populations. The model includes state fixed-effects interacted with a linear year variable. This controls for trends that remain constant within years across states. In the case of individual states, we are also controlling for things that remain constant within state lines (such as culture). Each state might have a different pattern in violent or property crime rates over time, and these models account for that possibility. A difference-in-difference model also controls for state-specific trends by allowing for different immigration and crime rates on different trajectories (Angrist and Pischke 2015). This model allows for the assumption that an absence in immigrant populations would result in a steady linear trend in U.S. crime rates. This inclusion of state-specific trends offers a check on causal interpretation; nevertheless, a limitation of the model is that findings are often imprecise. Abrupt deviations in state trends are picked up by the model; however, when effects emerge at steady rates, the model is less likely to detect the results.

We selected a number of relevant variables from the CSP database relating to immigration, crime, and other state characteristics and placed each variable on a logarithmic scale to adjust large positive skews and outliers. We then ran a series of models to observe population and policy effects on violent and property crime rates. The results of our analyses are found in Tables 1–3, A1–A6, and Figures 1–9. All analyses were performed with the use of Stata software, version 15.

To assess the quality of our design, we created a series of checks to look for variation in our treatment effects. First, we produced a new model in which we included

additional controls for poverty rates, graduation rates, the percentages of the nonwhite population, the total state revenue, population growth, and population total. We found no difference in the results between the new model and our original fixed-effects model. Additional checks found that these null effects on crime do not change over long periods of time but do change with certain language policies in place. We also included unemployment rates as a check and found immigrants have no effect on crime rates when unemployment rates are high but are associated with decreases in violent crime when unemployment rates are low. Finally, we tested our model for endogeneity and found no reverse causal relationship between immigration and crime.

Results

Immigration trends in the U.S. have been dynamic both in their increasing rates as well as in the percentage shifts of region of origin. Pictured below, Figure 1 reflects the growth in the estimated number of undocumented immigrants in the U.S. since 1990 (Passel and Cohn 2011). Also below, Figure 2 shows the fluctuations in the percentages of immigrant populations divided by region of origin since 1960. “In 1960, 84 percent of immigrants living in the U.S. were born in Europe or Canada, while only 6 percent were from Mexico, 3.8 percent from South and East Asia, 3.5 percent from the rest of Latin America, and 2.7 percent from other areas. By 2015, immigrant origins had changed dramatically as European and Canadian immigrants made up only a small share of the foreign-born population (13.5 percent), while Mexicans accounted for one of the largest shares, 26.8 percent. Asian immigrants made up 26.9 percent of all immigrants, other Latin Americans stood at 24.2 percent, and the other 8.6 percent of immigrants were born in other regions,” (López and Radford 2017). Concurrent with these increases in immigration, crime rates have been trending downward. Figures 3 and 4 reveal that the trends measuring the number of violent and property offenses per 100,000 people have fallen significantly over the past two decades.

Figure 1. Estimated National Trends of Undocumented Immigrant Populations

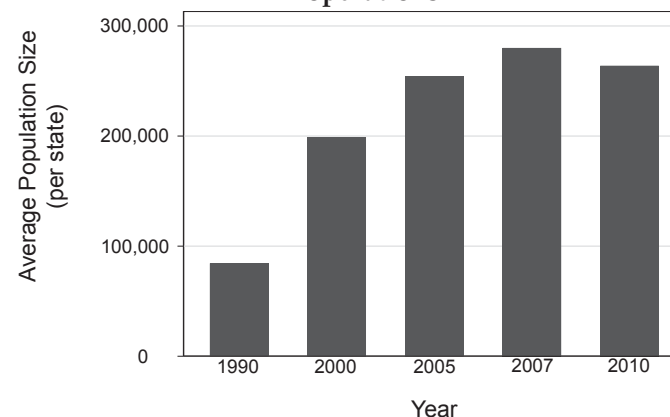
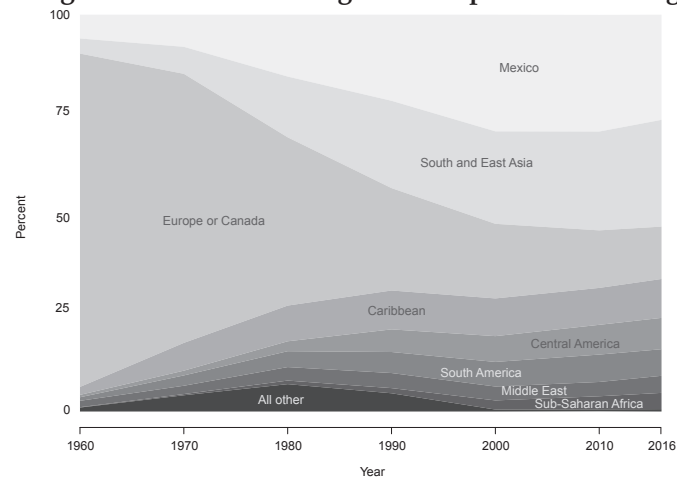
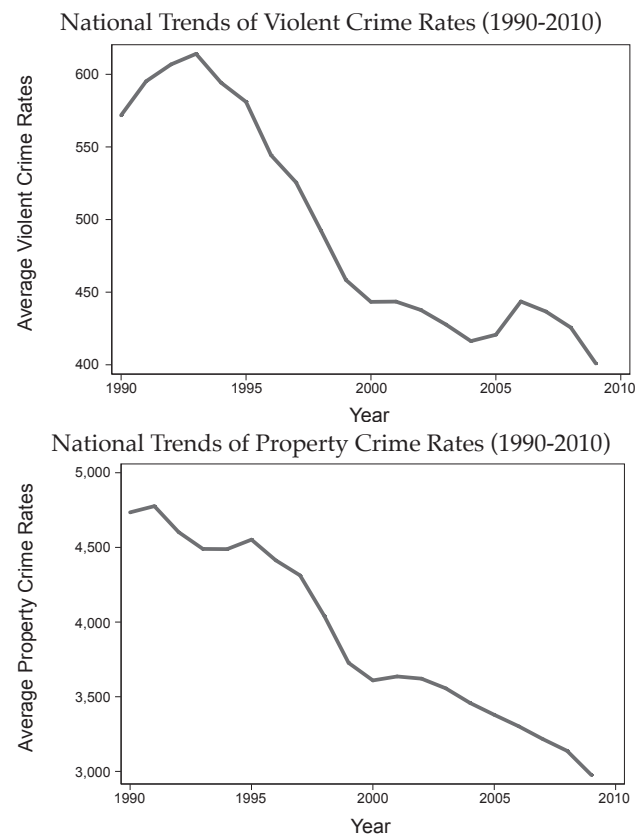
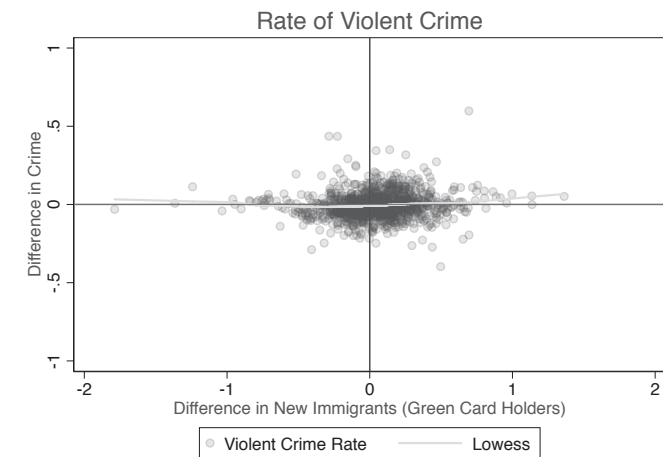
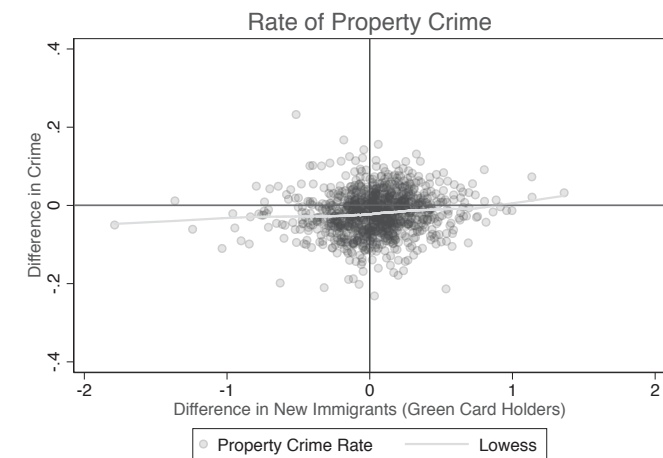


Figure 2. Origin and Percent of Foreign-Born Population Residing in the U.S.**Figures 3. (top) and 4. (bottom): Declining Trends of Crime Rates in the U.S.**

The correlations above support our findings. Pictured below, Figure 5 shows the null effects that new immigrants have on violent crime rates. Average violent crime rates generally do not change given the fluctuation in new immigrants. The yellow lowess line crosses the zero-line twice. Also below, Figure 6 shows the effects that new immigrants have on property crime rates. As with violent crime rates, average property crime rates also do not change given the fluctuation in new immigrants. Once again, the yellow lowess line crosses the zero-line.

Figure 5. Effects of New Immigrants on Violent Crime**Figure 6. Effects of New Immigrants on Violent Crime**

Our results for violent crime (pictured in Table 1 and Figure 7) suggest that neither documented nor undocumented immigrants have any effect on violent crime

rates in the United States. However, in the case of the U.S.'s foreign-born population, we found that a 1 percent increase is associated in a predicted 20 percent decrease in violent crime. A negatively correlated substantive finding such as this suggests that immigrant populations are disproportionately less likely to commit crimes than the native-born. These results support our self-selection theory. In the case of refugees, we found that for every 1 percentage point increase in a refugee population, there is a predicted 0.09 percent increase in violent crime. While this positive correlation is significant ($p=0.036$), it is not statistically substantive.

Conversely, we see (in Table 2 and Figure 8) that a 1 percentage point increase in a refugee population corresponds with a predicted 0.05 percent decrease in property crime. Neither the foreign-born population nor documented nor undocumented immigrants have any effect on property crime rates. These results reflect changes in immigration rates over time. Each of our models controls for all things, observed and unobserved, that remain constant in states over time, within years, and for state-specific time trends.

Table 1. Regression Analysis of Immigrant Population Effects on Violent Crime

	Log of Violent Crime Rate	Log of Violent Crime Rate	Log of Violent Crime Rate	Log of Violent Crime Rate
Log of New Immigrant Pop.	-0.00566 (0.0174)			
Log of Foreign-Born Pop.		-0.200** (0.0949)		
Log of Undocumented Immigrant Pop.			-0.0735* (0.0413)	
Log of Refugee Total				0.00920** (0.00437)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
Constant	-22.77*** (8.632)	19.79 (46.61)	62.38*** (13.17)	-18.64 (52.31)
Observations	1,122	234	170	497
R-squared	0.993	0.992	0.980	0.992

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 7. Coefficient Plot Comparing Various Effects on Violent Crime

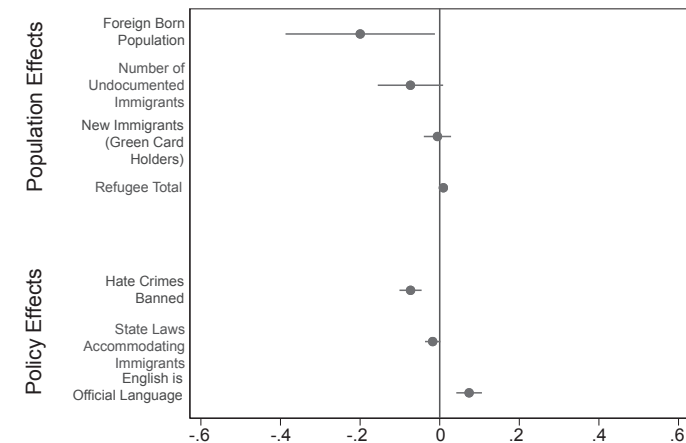


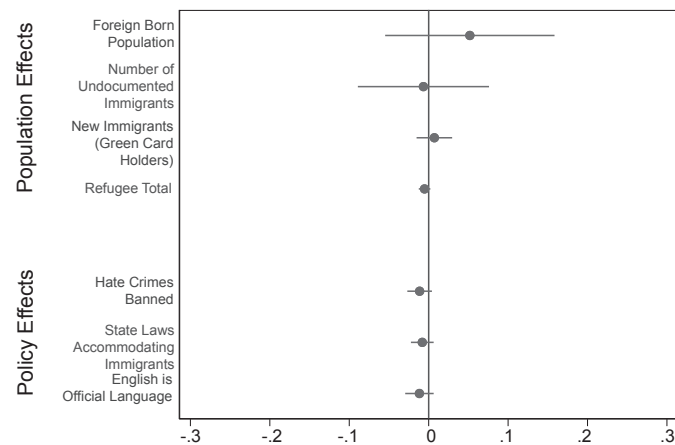
Table 2. Regression Analysis of Immigrant Population Effects on Property Crime

	Log of Property Crime Rate	Log of Property Crime Rate	Log of Property Crime Rate	Log of Property Crime Rate
Log of New Immigrant Pop.	0.00717 (0.0114)			
Log of Foreign-Born Pop.		0.0518 (0.0539)		
Log of Undocumented Immigrant Pop.			-0.00659 (0.0415)	
Log of Refugee Total				-0.00518 (0.00372)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
Constant	17.50*** (5.647)	37.12 (26.48)	-32.78** (13.24)	91.35** (44.56)
Observations	1,122	234	170	497
R-squared	0.992	0.977	0.964	0.976

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 8. Coefficient Plot Comparing Various Effects on Property Crime



Policy Effects

While immigrant populations do not have significant positive effects on violent crime rates, immigration policies do seem to affect violent crime rates in both directions. States that have explicitly banned hate crimes or that have enacted laws that are accommodating to immigrants, experience an associated decline in violent crime. Conversely, states that have created legislation declaring English as the official language tend to experience a positive effect on violent crime rates—an effect that runs presumably opposite to what these state legislators and lobbyists might have expected or hoped for.

We use this official English dummy to see whether there is an observable difference in crime rates between states that are inclusive versus those that are not. Below, Table 3 provides evidence that states that have proclaimed English as their official language do not see significant increases in violent crime as the rates of new immigrants increase ($p=0.485$). Nevertheless, when states do not have English as their official language, we observe a predicted 5 percent decrease in violent crime as new immigrants enter the state ($p=0.012$). This finding signals the concept that a region's attitudes toward immersion and inclusion can result in more peaceful communities. We again find null effects from new immigrants when observing property crimes with the official English dummy as a proxy (Official English law $p=0.578$; No Official English law $p=0.848$). These results support our supportive state theory. It appears states that are sympathetic to marginalized groups and that focus on inclusionary policies experience more decency among its people, while states that exert protectionism, encounter greater hostility and higher crime rates.

Table 3. Immigration Effects on Crime with Official English Policy as Proxy

	Log of Violent Crime rates in states that have English as its official language	Log of Violent Crime rates in states that do not have English as its official language	Log of Property Crime rates in states that have English as its official language	Log of Property Crime rates in states that do not have English as its official language
Log of New Immigrant Pop.	0.0220 (0.0315)	-0.0484** (0.0192)	0.00925 (0.0166)	0.00287 (0.0150)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
State-Specific Trends	Yes	Yes	Yes	Yes
Constant	-6.606 (21.43)	-160.2*** (28.83)	12.34 (11.31)	20.46 (22.46)
Observations	519	603	519	603
R-squared	0.976	0.987	0.972	0.967

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Tables 1 and 2 each provide four models measuring the different effects new immigrant populations ($N=1,122$), foreign-born populations ($N=234$), undocumented immigrant populations ($N=170$), and refugee populations ($N=497$) have on violent crime rates and property crime rates, respectively. All variables are logged. Both state and year fixed-effects are included, as well as state-specific trends. No immigrant population has a significant effect on property crime rates, though increases in the foreign-born population are associated in sharp declines in violent crime rates.

Technical Findings on Immigrant Populations

In the case of new immigrant populations, we see in Table 1 that for every 1 percent increase of new immigrants, there is a predicted 0.5 percent decline in violent crime—nevertheless, with a p -value of 0.75 (95 percent CI, -0.04 to 0.03), this measurement is not significant. Similarly, we observe in Table 2 an insignificant effect with property crime rates with a p -value of 0.53 (95 percent CI, -0.02 to 0.03). In other words, new immigrants have no effect on violent or property crime rates. Similar insignificant effects are found for the case of undocumented immigrants on violent or property crime, with p -values of 0.08 (95 percent CI, -0.16 to 0.01) and 0.87 (95 percent CI, -0.09 to 0.08), respectively. While increased percentages of a foreign-born population have no effect on property crime rates (p -value of 0.34; 95 percent CI, -0.05 to 0.16), they

appear to have a predicted decrease in violent crime (p-value of 0.03; 95 percent CI, -0.39 to -0.01).

In the case of refugees, we see in Table 1 that for every 1 percentage point increase in a refugee population, there is a predicted 0.9 percent increase in violent crime. Conversely, we see that a 1 percentage point increase in a refugee population corresponds with a predicted 0.5 percent decrease in property crime. These predictions could be a manifestation of the self-selection theory, effects of PTSD or despair in refugees, or perhaps even the result of hostility from their state of residence. Further analysis is necessary to better understand the directions of refugee effects.

Checks and Tests

Checking Effects by Time Period

Due to the ever-changing nature of immigration policies in the U.S., we decided to check for differences in our model results by time periods. We divided our data spanning 1988 to 2011 in two equal eleven-year blocks to each represent an early (pre-9/11 era) and late (quasi post-9/11 era) period. We did not see evidence of differences in violence between the two time periods (early $p=0.706$; later $p=0.252$; see Table A2 in Appendix). In the case of property crime, we found that increased rates of new immigrants in the early time period were associated with a 2 percent decrease in crime (albeit, at the 90 percent confidence level; $p=0.085$; see Table A3 in Appendix). New immigrants have no effect on property crime in later years ($p=0.865$). Effectively, the null effects that immigration has on crime do not change over time.

Checking Effects against Unemployment Rates

To test whether a state's unemployment rates affect the relationship between immigration and crime, we divided all observation units (each state over every year) by whether they were above or below the unemployment rate mean (6.103821). Table A4 provides evidence that immigration has no effect on crime rates in states with higher unemployment rates ($p=0.153$). Yet, states that have lower unemployment rates will also experience a predicted 5 percent decrease in violent crime ($p=0.025$). It is possible that a state's stability extends into different domains. Table A4 reveals that state property crime rates are not significantly affected (at the 95 percent confidence level) by immigrants, regardless of the unemployment rate.

Testing for Reverse Causation

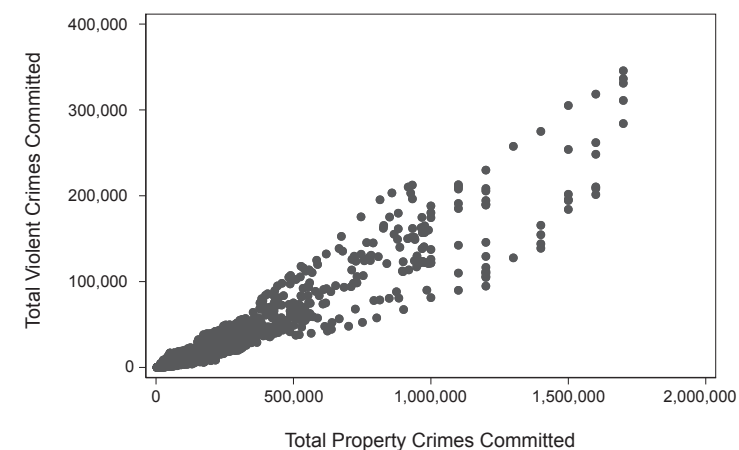
To check whether the relationship we found was an effect of reverse causation, we ran a series of regressions measuring lagged crime rates. If our model was, in fact, picking up on an endogenous relationship, we would find a relationship between increased numbers in new immigrant populations—in any given year—associated with low crime rates from one to four years prior. In other words, a new immigrant, in deciding his or her new state of residence, would look at past criminology reports and see whether the state is safe or crime-ridden. The findings in Table A5 show there is no reverse causality in violent crime rates within a four-year window (Year 1 $p=0.616$;

Year 2 $p=0.432$; Year 3 $p=0.483$; Year 4 $p=0.885$). Similarly, Table A6 shows no reverse causality in property crime rates within a four-year window (Year 1 $p=0.459$; Year 2 $p=0.306$; Year 3 $p=0.590$; Year 4 $p=0.512$). From this endogeneity check on the quality of our model, we may assume that our previous estimates of the effect of immigration on crime are unbiased.

Limitations

While the CSP does not include data on drug-related crimes, our measures of crime do cover otherwise comprehensive groupings. Furthermore, our correlation matrix (Figure 9) shows that measures of crime are highly correlated with each other ($R=0.95$). With such a strong positive correlation among criminal behavior, we may infer that states that are high in crime in one area tend to be high in others—including crimes related to drugs or human trafficking.

Figure 9. Correlations between Criminal Behavior



Domestic violence, sexual assault, and gang violence are perceived to be underreported crimes amongst immigrants. The reasons behind this include language barriers, cultural definitions of justice, fear of the authorities, or shame amongst family members (Ousey and Kubrin 2018). We acknowledge there is almost certainly an underreporting of crimes, especially by immigrants themselves.

All of the checks on the quality of our model were performed exclusively with the new immigrant (Green Card holder) population as the independent variable. This decision was made because the sample size was the only one large enough ($N=1,224$) to offer statistical significance worthy of interpretation. Further analysis would require fuller sample sizes of each immigrant population, as well as data on varieties of racial and ethnic groups. Lastly, our analysis does not include trends starting from 2014 to the present day because the data has not yet been released. We look forward to further analysis once the data is published.

The research on the relationship between immigration and crime rates should not stop here. Because crime rates are only one aspect to be considered in the debate over immigration reform, we hope to develop this analysis to comprehensively cover all the effects immigrant populations might or might not have on the U.S. This expansion would include effects on the economy, unemployment rates, housing markets, and public schools.

Conclusion

In this paper, we found that multiple measures of immigration rates have no effect on property or violent crime rates. In fact, in the case of the foreign-born population, higher immigration rates are associated with negative rates of violent crime.

Concerning theory, we find that while we cannot understand the motivations behind the immigrants from purely a quantitative macroanalysis, our data seems to agree with a self-selection theory. Our evidence shows that immigrant populations are inherently less prone to committing crime than the native-born in the U.S.

As for the list of policies that the Trump administration plans to enact, we find that crime rates cannot be cited as a valid reason to further these proposals. Taxpayer dollars could be used in more effective ways than a \$6 billion wall. President Trump cannot rightly institute travel bans of visitors from Islamic-majority countries while citing increases in crime and terrorism. These bans do not reduce the rates of crime they profess to affect.

The data shows in Figures 7 and 8 that the only immigration policy that has a significant positive effect on crime is when a state adopts English as its official language. Only in that case do violent crime rates increase. As we have discussed, this piece of legislation is often coupled with anti-immigrant policies and legislature. Policy measures that aim to protect immigrant populations, such as banned hate crimes, result in negative effects on violent crime rates. Policy measures that aim to include immigrants, such as accommodation laws, have null effects on violent crime rates. From our results, we see that decency breeds more decency, while protectionism and anti-immigration policies breed hostility.

If crime is the critical factor driving the construction of a wall, a travel ban, or other immigration reform laws, it should be clear that there is no crisis; the presence of immigrant populations produce null effects on crime rates in the U.S. The Trump administration cannot correctly cite increases in crime as its case for immigration reform. Our nation does not experience higher risks of crime when more immigrants enter the country or naturalize. In fact, rates of crime are shown to decrease with larger foreign-born populations.

Policy should not be steered by anecdotal stories that might pander to fear or xenophobia but instead be guided by empirical evidence conducted at macro levels. When citizens can be corrected on the issue of immigration and its attending effects, politicians will be emboldened to make intelligent policies that benefit the U.S.'s native-born citizens and respects its newest members.

Appendix

Table A1. Summary Statistics of all Independent Variables and Dependent Variables

Statistics	Percent Foreign-Born	Number of Undocumented Immigrants	Number of New Immigrants	Refugee Total	Hate Crimes Banned	Total Accom. Immigrant Laws
Mean	8.500	216,877.93	19,386.21	1,219.65	.681	1.431
SD	6.013	420,335.38	49,200.318	2,137.36	.466	2.366
Min.	1.1	5,000	159	0	0	0
Max.	27.4	2,750,000	732,735	22,880	1	15
Range	26.3	2,745,000	732,576	22,880	1	15
N	371	213	1,224	662	1,700	371
Statistics	English Official Language		Violent Crime Rate		Property Crime Rate	
Mean	.347		400.090		3,731.242	
SD	.476		306.547		1,455.24	
Min.	0		9.5		573.1	
Max.	1		2,921.8		9,512.1	
Range	1		2,912.3		8,939	
N	2,295		2545		2,545	

Note: Table A1 includes the descriptive statistics of all independent and dependent variables of our models. The foreign-born statistics are recorded as percentages. Undocumented immigrants, new immigrants (Green Card holders), and the refugee population are all recorded as total numbers. The hate crimes and English Official Language measurements are dummy variables. The accommodating immigrant laws variable is measured as a total number.

Table A2. Immigration Effects on Violent Crime Divided by Time Period

	Log of Violent Crime Rates 1988 to 1999	Log of Violent Crime Rates 2000 to 2011
Log of New Immigrant Pop.	-0.00707 (0.0187)	-0.0272 (0.0237)
State Fixed-Effects	Yes	Yes
Year Fixed-Effects	Yes	Yes
State-Specific Trends	Yes	Yes
Constant	-95.68*** (18.03)	-51.97*** (16.84)
Observations	612	510
R-squared	0.989	0.992

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A2 provides evidence that there is no difference in immigration effects on violent crime among time periods.

Table A3. Immigration Effects on Property Crime Divided by Time Period

	Log of Property Crime Rates 1988 to 1999	Log of Property Crime Rates 2000 to 2011
Log of New Immigrant Pop.	-0.0194* (0.0112)	-0.00343 (0.0202)
State Fixed-Effects	Yes	Yes
Year Fixed-Effects	Yes	Yes
State-Specific Trends	Yes	Yes
Constant	12.14 (10.82)	16.08 (14.32)
Observations	612	510
R-squared	0.977	0.976

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A4. Immigration Effects on Crime in States with Unemployment Rates Above and Below the Mean

	Log of Violent Crime rates in states with unemployment above the mean (6.104)	Log of Violent Crime rates in states with unemployment below the mean (6.104)	Log of Property Crime rates in states with unemployment above the mean (6.104)	Log of Property Crime rates in states with unemployment below the mean (6.104)
Log of New Immigrant Pop.	0.0341 (0.0238)	-0.0527** (0.0235)	0.0251* (0.0131)	-0.0259 (0.0200)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
State-Specific Trends	Yes	Yes	Yes	Yes
Constant	6.167*** (0.197)	-33.99*** (7.911)	8.220*** (0.108)	18.52*** (6.741)
Observations	590	532	590	532
R-squared	0.983	0.989	0.975	0.973

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A5. Endogenous Test between New Immigrants and Violent Crime on a 4-Year Lag

	Log of Property Crime rate with 1 year lag	Log of Property Crime rate with 2 year lag	Log of Property Crime rate with 3 year lag	Log of Property Crime rate with 4 year lag
Log of New Immigrant Pop.	0.00891 (0.0178)	0.0141 (0.0180)	0.0131 (0.0187)	0.00283 (0.0196)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
State-Specific Trends	Yes	Yes	Yes	Yes
Constant	-27.76*** (8.381)	-27.53*** (8.086)	-24.78*** (8.403)	-20.31** (8.809)
Observations	1,173	1,224	1,224	1,224
R-squared	0.978	0.977	0.976	0.974

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A6. Endogenous Test between New Immigrants and Property Crime on a 4-Year Lag

	Log of Violent Crime rate with 1 year lag	Log of Violent Crime rate with 2 year lag	Log of Violent Crime rate with 3 year lag	Log of Violent Crime rate with 4 year lag
Log of New Immigrant Pop.	0.00837 (0.0113)	0.0115 (0.0112)	0.00594 (0.0110)	-0.00712 (0.0109)
State Fixed-Effects	Yes	Yes	Yes	Yes
Year Fixed-Effects	Yes	Yes	Yes	Yes
State-Specific Trends	Yes	Yes	Yes	Yes
Constant	18.98*** (5.329)	21.29*** (5.041)	23.57*** (4.953)	26.99** (4.875)
Observations	1,173	1,224	1,224	1,224
R-squared	0.963	0.963	0.963	0.963

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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The Democracy of Dating: A Survey Experiment on American Dating Preferences

Matthew Easton

Introduction

In 2012, the online dating app Tinder launched and quickly became one of the most popular relationship services of all time (Stampler 2014). Although online dating had already been around for nearly two decades, Tinder's fast-paced matching service was unparalleled to any previous platform and became a marked feature of pop culture. Today, Tinder boasts more than ten million matches a day and is available in over thirty languages worldwide (Dogtiev 2017). With a growing shift toward app dating services like Tinder, the question remains: What leads to getting more matches on dating sites like Tinder? One possible answer might be surprising—politics.

According to Pew Research, political polarization is at an all-time high in the U.S. and is influencing everyday life—from work and school to even dating (2016). This polarization encapsulates growing dislike for people of the out-party and has generally increased over the past several decades (Iyengar et al. 2012). It is, therefore, not difficult to stipulate how ideological hard-liners from both ends of the political spectrum may not be interested in interacting romantically with people of opposite views, particularly as romantic relationships involve much more interaction than everyday exchanges. However, the extent of how far this lack of interest extends into the dating preferences of U.S. citizens is largely unexplored. This research seeks to answer that very question: Specifically, how has politics in contemporary America impacted dating preferences among U.S. citizens? This paper uses data from a survey experiment in which mock dating profiles state brief personal bios that refer to either a liberal ideology, conservative ideology, or have no mention of political ideology. Survey respondents are asked to rank each profile as "attractive" or "unattractive." I then conduct a statistical analysis to determine if the ideological treatments influence level of attractiveness. Ultimately,

findings indicate that liberal dating profiles are significantly more attractive than conservative profiles but that leaving out ideology makes for the most attractive profile. Among male viewers, ideology has no serious impact on how they view female profile attractiveness, although female viewers exhibit much more sensitivity toward the treatments. This suggests that political beliefs may not be a two-way concern among men and women. Overall, the results indicate that dating is indeed political and that showing particular political preferences will influence attractiveness rates for online dating profiles.

Background and Literature Review

The following section expands on these main topics: The prevalence and importance of political ideology in relationships, the current research on political preferences and romantic relationships, the growing political divide among Americans, and the current social movements surrounding female empowerment. It then identifies the research gap among dating in a post-2016 election America and the importance of all three sections in establishing the theoretical framework of Section II.

Political ideology has always been a factor in romantic relationships. Statistics show that on average, men and women marry a person with a similar political ideology (Hersh 2016). This is particularly true among older generations, with the majority of couples aged sixty and above married to someone of their same party. However, couples who are middle-aged (as well as couples who marry later in life) are not as likely as their older counterparts to be married to same-party partners, with about 30 percent of these relationships being bipartisan commitments (Riley 2016). These findings indicate that over time, couples have become more open to the idea of marrying someone with differing political viewpoints. It is important to note, however, that the bipartisan couple percentage Riley mentions includes conservative-independent and liberal-independent relationships. As Keith (1992) stated, independent voters often lean toward a particular party and consistently vote for it, suggesting that Riley's bipartisan relationship percentages may be somewhat lower than she reported. Even still, conservative-liberal marriages are certainly on the rise and imply that not all couples are concerned about politics. For those couples that are concerned about the ideology of their spouse, the political beliefs of each partner could have further implications than simply their personal relationship.

Political ideology of both partners in a romantic relationship is likely to influence the next generation of citizens as well. According to Magleby et al. (2014), the political ideology of parents is the number one indicator of an individual's own political belief system. For those couples with matching ideologies, their children are highly likely to carry on the same political attitudes. Among the less common bi-partisan couples, children are more likely to be open to new ideas, listen to both sides of the political spectrum, and be willing to challenge echo-chamber thought processes (Jennings and Niemi 2014). Inter-ideological marriages appear to be beneficial to aiding civil political discourse among the next generation of politically engaged citizens. In direct contrast, same-party marriages may proliferate the differences of belief between the right and

left, which could easily increase polarization between party members both now and in the near future. Overall, mixed-ideology relationships are prevalent though not particularly common among Americans. Dating and political thought, therefore, has important consequences for both the current and future political atmosphere in the U.S.

Though not extensive, there is currently some research on the influence of political ideology on romantic relationships. Hersh (2016) gathered data from New York and found that among the majority of married couples, conservatives are more likely to marry conservatives whereas liberals and independents are less likely to stay within their own ideology for marriage. One possible reason for this may be that conservatives and liberals have very differing views on sexual morality (Haidt and Hersh 2001). Conservatives tend to value traditional ideals of sexual intimacy and abstinence whereas liberals (and to some extent, independents) are less strict in their interpretations of sexual expression and intimacy. Such stark differences on a topic that is at the forefront of dating may keep conservatives and liberals away from each other. Huber and Malhotra (2016) explored this very relationship in a field experiment on traditional online dating. Creating large dating profiles similar to Match.com or eHarmony.com, they tested the influence of political ideology among a randomly assorted mixture of dating profiles. They found that liberals are perceived as more attractive among liberals and vice versa for conservatives, suggesting that individuals prefer to date among politically homogeneous crowds. Klosfatd, McDermott, and Hatemi (2013) further support these findings, suggesting that political polarization also dictates American's dating preferences more than ever before. While this literature provides correlation toward the idea that politically similar people are more likely to date, it leaves a severe gap in current understanding, because all research was conducted before the 2016 presidential election.

President Trump's 2016 election isn't the only force that may be changing dating habits. Modern movements against sexual assault have brought romantic behaviors to the forefront of political and civil discussion. Beginning in 2017, people around the globe gathered for a succession of Women's Marches, expressing solidarity with women who face discrimination in both the work force and their personal lives because of their gender (Wright 2018). This social movement has directly impacted global discussion on consent and sexual harassment, issues that have long plagued courtship and romantic relationships. Evolving from these Women's Marches, the #MeToo movement developed to publicly hold men accountable for sexual misconduct, harassment, and assault, resulting in a series of high-profile criminal cases (Hawbaker 2018). As a typically Democrat-supported movement, #MeToo has drawn both praise and criticism from the left and right. With these and other social movements aimed at empowering women, particularly in romantic and sexual contexts, the question of how these events have impacted consensual dating and romantic perception between women and men remains unanswered. As this specific topic has drawn not only a gendered but divisively political response, it is essential to explore how political and dating preferences interact with gender, something currently lacking among published literature.

In all, politics has always been a part of romantic relationships, and although research has been conducted on how political ideology influences attractiveness and romantic interest on online dating profiles, little has been explored on the impact of Donald Trump's election and current women's rights movements on dating preferences. As the dating of today leads to the families of tomorrow, it is imperative to better understand how post-Trump dating preferences will affect the next generation of U.S. citizens.

Theory, Hypothesis, and Experimental Design

Theory

As the previous literature review mentions, polarization between parties has been on the rise, consistent throughout the election of Donald Trump and female social movements. Therefore, individuals who feel strongly about the presidency of Trump and campaigns like #MeToo will likewise experience an increased animosity toward those that feel opposite to their views. This hostility will permeate dating preferences to the point of reflecting a stronger polarization than ever before between conservatives and liberals. Essentially, liberals will be more inclined to match with liberals and less inclined to match with conservatives and vice versa.

Hypothesis

Respondents will rank profiles attractive that align closer to their own ideology. This will be particularly prominent among liberal women, many of whom are active in current female empowerment movements.

Experimental Design

To research this question, I created a mock female and male dating profile (see Figures 1 and 2). The profiles were designed to reflect dating sites like Tinder; three photos, a name, a brief bio, and a location tag were included in the profile. Both profiles then received one of five treatments in the bio, as stated below:

1. Democrat (Hillary)

I love traveling the world and meeting new people. Progressive thinker, creative dreamer, and proud to have been a part of a historic presidential campaign. #StillWithHer.

2. Liberal

Love to travel, explore, and engage in the world around me. Passionate about equality and proudly progressive. Let's get to know each other!

3. Republican (Trump)

Hiking, biking, and the great outdoors. Proud to be an American and proud to have been part of a historic presidential campaign . . . let's #MAGA together!

4. Conservative

Hiking, shooting, and the great outdoors. Proud conservative and passionate about freedom. Let's get to know each other!

5. Control

I love to travel, explore, and engage in the world around me. Let's get to know each other!

Note: In order to maintain parallelism, a Hillary Clinton treatment was included to compare against a Donald Trump treatment. Instead of using direct claims to ideology (such as "I am a Donald Trump supporter!"), the survey included more subtle mentions of political ideology such as "traditional," "progressive," "#MAGA," and "#ImStillWithHer."

Figure 1.

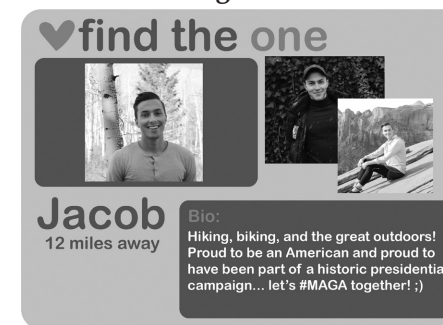


Figure 2.



Each mock profile was placed within a survey on Qualtrics Survey Platform, a professional online survey system. The survey included brief demographical questions such as age, gender, income, and personal political ideology. The respondent was then asked his or her preference when dating between men and women and shown a profile according to that preference (randomly distributed between the five treatment groups). The four outcome measures were:

1. Would you rate this profile as attractive or unattractive?
2. Would you ask this profile on a date?
3. Would you accept an offer from this profile to go on a date?
4. Would you respond to a message from this profile?

The first question "Would you rank this profile as attractive or unattractive?" is the main outcome measure. This question is designed to identify not only if someone would desire to match with the profile but also if attractiveness is independent of dating preference. The next two outcome measures are included to account for potential cultural differences between men and women concerning who typically asks or is asked on a date. The final outcome measure is included to give more understanding in terms of typical online dating actions.

I administered this survey on Amazon Mechanical Turk, an online platform that allows random U.S. citizens across the U.S. to participate in the study. Each respondent received \$0.75 for participation in the survey. Due to funding restrictions, I

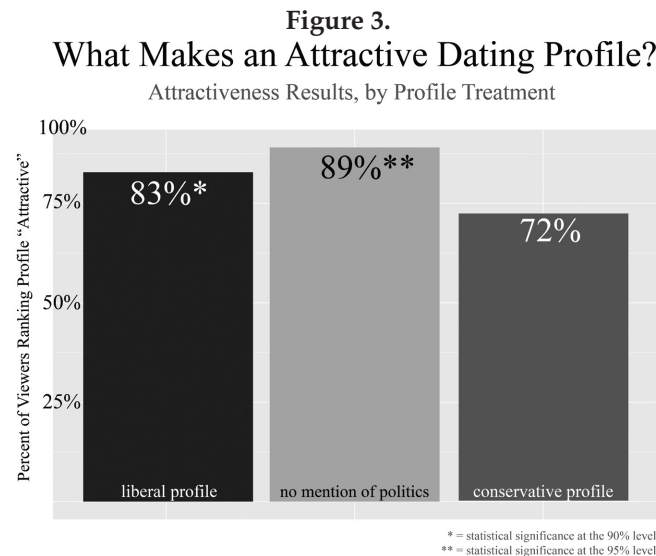
collected a sample size of 150 respondents for a total of \$150 (including the fee to use Amazon Mechanical Turk). A complete copy of the survey can be found in Appendix A.

Results

Due to a small sample size ($n: 150$), I lacked sufficient numerical power to run statistical tests on all five of the treatment groups. As such, for the purpose of this analysis I collapsed both “Conservative” and “Trump” treatments together into a single “Conservative” treatment. Additionally, I also collapsed “Liberal” and “Hillary” treatments together. This is still a valid analytic method because the treatments that were collapsed are similar enough to compare together.

When comparing the overall level of attractiveness between liberal, conservative, and control profiles, liberal profiles received statistically higher attractiveness ratings than conservatives. While the liberal profile had an 83 percent chance of being rated attractive, the conservative profile had only a 72 percent chance of being ranked attractive. The 11 percent point difference between the two is significant at the 10 percent significance level (i.e., $p\text{-value} < 0.1$), suggesting that it is in fact the liberal nature of the profile bio that is leading to the substantial increase in attractiveness.

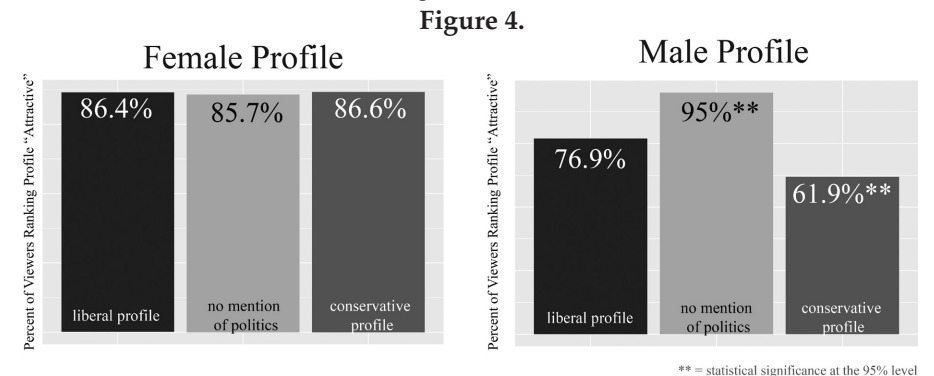
Somewhat unexpectedly, the results also indicate that the control profile was more attractive than both the liberal and conservative profile. At a base attractiveness rate of 89 percent, the control profile was 6 percent more attractive than the liberal and 17 percent more attractive than the conservative profile. This result is significant at the 5 percent significance level (i.e., $p\text{-value} < 0.05$). A visual representation of the main findings is below in Figure 3.



Gender Differences

To better understand the difference between the male and female profiles, I compared the level of attractiveness among those that preferred men and those that preferred women. Although there were homosexuals who took this survey, the total number of gay men and women was too low to be influential in the analysis. Therefore, for the purpose of this analysis I will consider those that viewed the female profile as heterosexual men and male profile viewers as heterosexual women.

Heterosexual men exhibited no statistically or substantively significant difference in viewing profile attractiveness between each treatment. Each profile received a rate within 0.6 percentage points of 86 percent, indicating that the liberal and conservative treatments had virtually no effect on male dating preferences. However, the results among heterosexual women were starkly different. For females, the attractiveness of the male profile fluctuated depending on which treatment arm they received. These women ranked the conservative profile attractive only 61.9 percent of the time, a 33.1 percentage point drop from the attractiveness rating for the control profile. This low ranking was significant at the 95 percent level. Women also ranked the liberal profile less attractive than the control profile, although this profile’s 76.9 percent attractiveness rate was not statistically significant and can therefore be attributed to sampling variance. These results are visualized in Figure 4 below.

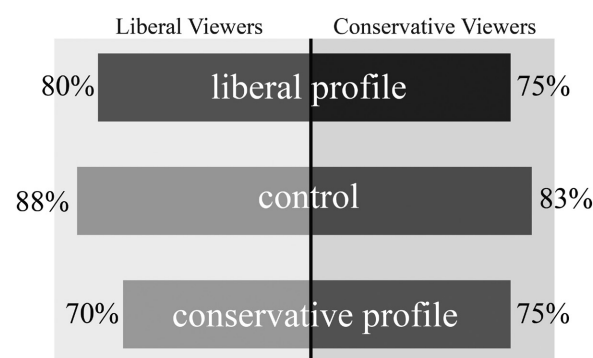


Political Ideology of Viewer

Next, I divided the profile attractiveness of each treatment arm between liberal and conservative viewers. Liberal viewers ranked the liberal profile attractive 80 percent of the time, whereas they only viewed the conservative profile as attractive 70 percent of the time. Although the 10 percent difference between the two appears substantial, the data does not support any statistical significance, which means the results may not hold if I had a larger sample size. Nonetheless, it is consistent with my theoretical expectations. Among conservative viewers, however, the results are even less telling. Conservative viewers ranked both the liberal and conservative profile attractive 75 percent of the time, signifying no variation whatsoever among the two treatments.

In both viewer subsets, the control profile was more attractive than either ideological treatment. It is possible that the lack of difference for conservative viewers and obsolete statistical significance for liberal viewers is due to the small sample size; nonetheless, these results show that matching ideology may not be as important for attractiveness as other variables. See Figure 6 below.

Figure 6
Does Political Preference of the Viewer Matter?
Level of Attractiveness, by Viewer Ideology



Analysis

The overall results find that no mention of politics (control) reaped from respondents the highest level of attractiveness. This holds constant among the main findings, gender bias results, and viewer ideology subsets. Clearly, people prefer to leave politics out of the conversation while dating, particularly men. As mentioned in the literature review, the political sphere is extremely polarizing (Walsh 2017). While men and women may be moderate in their beliefs, bringing up ideology may quickly polarize these otherwise open-minded individuals, as topics like Donald Trump and the #MeToo movement are heavily partisan issues. This is not to say that political ideology is not a good measure of compatibility. Trump supporters may still want to connect with fellow Trump supporters and find strong liberals to be incongruent as romantic partners. Likewise, Democrats may naturally desire other Democrats and find traditional conservatives to be out-of-date and romantically incompatible. However, people may prefer to explore political differences later in the dating process instead of during first impressions. When profiles mention political behavior in the first encounter (in the case of this survey, on the main dating profile page), then it may signal to the viewer that the individual on the profile may be more extreme in political views than he or she really is. Nevertheless, it is clear that to increase dating profile attractiveness, leaving political ideology out is much more effective than mentioning either liberal or conservative views.

While the hypothesis that liberal profiles would garner higher attractiveness scores than conservative profiles remains true among the main findings, the results between

gender and viewer ideology are neither substantially nor statistically significant. The difference may be due to Hersh's claims that bipartisan relationships are indeed on the rise (2016). However, there is an important distinction to make between male and female viewers. While men seem completely unfazed by differing ideology of the female profile, women were extremely sensitive to ideology and did not find the conservative treatment attractive. One explanation for this phenomenon may be that men are less concerned about ideology, because they either feel confident in holding their own ideology or that their future partner will simply adhere to their beliefs. This concept is not far-fetched, especially when considering the rhetoric of Donald Trump, a man known for perpetuating such convictions within both his personal relationships and interactions with female reporters, politicians, and public figures. Women may feel that they do not have the luxury of seeing past ideology and must be more proactive in dating someone who will support their beliefs. Again, the recent sociopolitical climate supports this stipulation, as female empowerment movements and marches are calling attention to the lack of support from men who do not agree with liberal policies toward harassment, abuse, or gender equality. Another possible explanation is that men may be more concerned simply with the looks of the person, whereas women take into account the value of the bio the profile presents. Several studies support this, indicating that men may have a biological predisposition to superficially focus on physical appearance, particularly during courtship (Fisher 1915). In either case, gender differences between ideological influences in dating are prevalent in this experiment, and a more thorough study on these influences needs to be explored.

It is crucial to note the limitations of this analysis. As previously mentioned, the data's sample size is an extreme restriction in identifying patterns and statistical relationships. Having more observations (such as 500 or even 1,000) would help in identifying significance with much more confidence. Additionally, there are notable choices in survey phrasing that may limit responses. Outcome measures used the term "profile" instead of "person" and this may impact someone's response, as they may look at aesthetic or organizational qualities of the overall profile instead of the individual person. This can be remedied in future studies by changing the phrasing to "person in this profile." Notwithstanding these limitations, I am still confident in the analysis mentioned above. These results offer strong evidence that no mention of politics will bring the highest attractiveness rating for dating profiles, that women are more sensitive to political beliefs than men, and that congruent political beliefs are not significantly important to modern day U.S. citizens.

Implications

The results of this experiment have important implications for not only the current social atmosphere but for the next generation of U.S. citizens as well. For individuals solely interested in garnering more matches on online dating platforms like Tinder or Match.com, they should consider leaving politics out of their bio. However, those who find political agreement among the most important characteristics of their romantic

relationships may consider placing ideology into their bios as a method of filtration, as politics does remain one of the most important factors of a happy, long-term partnership. The political polarization in the U.S. is indeed bleeding into life beyond the debate stage, demonstrating that committing to a party or ideology is likely to ostracize people from meaningful interactions with others. That being said, the data suggests that more and more Americans are trending toward an apathetic view of politics. For dating sites interested in growing business, they should avoid political statements and instead opt for a middle-of-the-road approach to current events and polarizing topics. As these dating trends continue to unfold, they will likely manifest themselves in the next generation. Rather than raising concern for one-party households and ideological polarized children, a greater problem may be family apathy toward politics altogether. Citizen participation is a key component to democracy (Magleby et al. 2014), and losing such constituent contribution is likely to be unfavorable for political institutions, campaign efforts, and policy implementation. Notwithstanding, political advisors and future candidates should still use the results of this study to focus on implementing strategies that will improve current political engagement of everyday citizens, as well as work on raising the interest of youth and young adults in politics. Such institutions can do so through community events, school programs, and scholarship incentives. These prescriptive solutions can act as incentives to encourage greater political involvement from the community.

In addition to political apathy, gender and politics stand central to the implications of this study. Considering the background of female empowerment movements and the upward trend predicted to continue in the coming years, these findings suggest that the divergence between male and female dating expectations will likely continue. As women become more outspoken about sexual harassment, misconduct, abuse, and other political issues, more women will likely feel empowered to stand up against such inappropriate behaviors. As such, these changes will likely evidence not only on the national and local scale but also personally in individual lives and relationships. While women may become more attuned to their partners' and potential partners' political relationships, the question remains: Will men? Although these findings show that men are apathetic and even ignorant of the female profile's political preferences, the current trend of #MeToo and the Women's March may indicate that they may not soon have the privilege of looking past ideology. With deepening political divides and more men being held accountable for their actions in the romantic sphere, it is possible that men will become more cognizant of party and gender differences in dating.

There is much left to be explored on how political factors affect people's dating preferences and what other characteristics, besides gender or ideology, affect whether individuals take into account political factors or not. For example, ethnic dating preferences may yield different results. It is likely that the interaction between minority profiles and conservative ideology will have a unique impact on other minorities. Additionally, sexual preferences may also play a role. Research in this area will add

more knowledge to the sphere of dating and help us redefine what it means to be in a romantic partnership during an unfounded time of political polarization. Regardless of where future studies go, one thing is for certain: romance is indeed political.

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Rational Fear: The Effects of Terrorist Activity and Immigration on Attitudes toward Security in the European Union

Matthew Easton and Connor Kreutz

Introduction: Immigration, Attacks, and Perceptions of Security in the EU

As soon as refugees fleeing ISIS and a Syrian civil war started streaming into Europe, citizens began to consider the potential ramifications of accepting so many wayward people from countries responsible for producing some of the world's most deadly terrorists. Europeans most fearful of threats from terrorists and immigrants with other criminal intentions began rallying around nationalist movements that campaigned for stricter immigration laws in order to maintain the security of the European Union (Pazzanese 2017). Nationalist candidates worked to garner support for stricter immigration policy by warning voters of the threats immigrants could pose to European safety and stability (Einbender 2018). Politicians often accomplished this by asserting that terrorists pretended to be refugees in order to covertly enter countries they intend to target (Pazzanese 2017). Such rhetoric was highly successful in building connections between immigrants and terrorists in the minds of concerned citizens and helped elect nationalist parties into the parliaments of many Western European nations.

This paper aims to explore the origins of these sentiments. Following an increase in terrorist attacks, do attitudes toward security change? Using public opinion data collected from ten countries in the EU, data on global terrorist activity from the Global Terrorism Database, and immigration statistics from Eurostat's national reporting, we seek to determine if increased immigration and terrorist attacks drive public fear of refugee immigrants or if other forces are to blame for inciting fear among European citizens.

Existing Theories on Influences to Public Opinion

Citizens of nations that experience an influx of immigrants from foreign countries tend to report two types of concerns or fears. Some fear immigrants will threaten

the existing economic system by seeking out scarce labor opportunities, thus increasing competition for high-demand jobs (Mayda 2004). Specifically, in Europe, expertly skilled and highly educated Europeans are more likely to support weaker immigration laws, because they believe they are more qualified than the average immigrant and need not fear being replaced (Hainmueller and Hiscox 2007).

The second type of fear reported in response to a refugee influx is fear for national and local security. Interestingly, previous literature has established that fear of this type is more often connected to the nature of each individual citizen, not external circumstances. For example, the more self-transcendent an individual seems to be, the more likely he or she is to support liberal immigration policies. The opposite is also true; the more self-concerned an individual reports to be, the more likely they are to oppose immigration (Davidov and Meuleman 2012). Individuals who are more selfless are more likely to support immigration, even when it may pose security risks. Does this mean, however, that citizens of countries with strict immigration laws are selfish people? Not completely. Research on immigration phobia and security in Europe and Russia suggests that, regardless of a citizen's ideology, when probed about issues of immigration in situations of uncertainty—such as during unemployment or in the wake of an election—their support for immigration decreases (Alexseev 2006). These types of changing and uncertain environments create situations where citizens are more impressionable or susceptible to new ideas.

Reports of terrorist attacks, both domestic and foreign, can be similarly fear-inducing for citizens of countries who may fear local aggressions or additional attacks abroad. For example, previous research indicates that terrorist attacks carried out in foreign regions such as Mumbai, India, succeeded in increasing general fear of terrorist attacks among Western Europeans (Finseraas and Listhaug 2013). It is important to note, however, that these attacks did not affect support or opposition of immigration policy (Finseraas and Listhaug 2013). Domestic terrorist attacks seem to be even more effective in instilling fear in a population than attacks abroad and do not need any sort of accompanying factor to increase their salience (Worrall 1999). Regardless of the location of the terrorist attack, there seems to be a sort of terror-induced psychosis that permeates a society after an attack (Renard 2016). This psychosis entails expanded news coverage about terrorism, increased fear for security in public, and enlarged fear of people who resemble the perpetrators of the attack.

In many cases, perception of immigration and terrorism seem to effect each other. People who embody different traits from the local population are often used as scapegoats in the wake of a terrorist attack (Spencer 2008). Often, people who are different are also depicted as people who are dangerous. Application of this theory can be seen in the U.S. perception of terrorist migration from Canada and Mexico. While there have been no known attacks in the U.S. from terrorists that migrated through Mexico, there have been multiple attacks in the U.S. from Canadian-born terrorists. However, when asked about areas of most concern, U.S. citizens report a far greater

fear of terrorist migration from or through Mexico than from Canada (Liken and Brooke 2007). Further research between immigration and terrorism exposes a dispersion effect. This effect is evident in data suggesting that, while immigration does contribute to the diffusion of terrorism, it does not lead to an increase in terrorism. It instead appears to spread out terrorist attacks among more countries (Bove and Boehmelt 2016).

Further research suggests that matters of immigration and terrorism become more salient when framed by a political or social ideology that is particularly focused on foreigners. For example, citizens seem to report stronger opposition to immigration when terrorist attacks occur but only when citizens see news articles and reports framing these attacks in a fearful way (Gadarian 2010). Research on sentiments in the UK after terrorist attacks in New York, Washington, Madrid, and London suggests the politicization of terrorism increases perceptions of terrorism as a threat to society (Mythen and Walklate 2006). This suggests that ideology acts as a catalyst for fear of terrorists and immigrants. An individual's political ideology seems to have a noticeable effect on how individuals react to immigration when triggered by some sort of fear-inducing terrorist attack (Brooks et al. 2016). Center and far-right political groups often politicize immigration to mobilize support for their causes by appealing to the fears of their constituents (Boswell and Hough 2008). This appeal to fear takes many forms but can be seen most commonly in the party's suggested policy, advertising, and rallies.

A New Theory on the Effects of Immigration and Terrorism on Public Opinion

Existing research, while thorough about how ideology, terrorist incidents, and immigration all create fearful public opinion, leaves gaps where such findings are arguably most salient—when these events occur simultaneously. Additionally, there seems to be geographic gaps in the existing literature. Western Europe has recently experienced greater immigration rates than nearly any other region, accompanied by influxes in terrorist activity and a rise in nationalist parties, making it an ideal region to study. Our analysis seeks to explore how increased immigration and terrorist incidents, as well as political ideology, all play a role in increasing fear of immigration among Western Europeans.

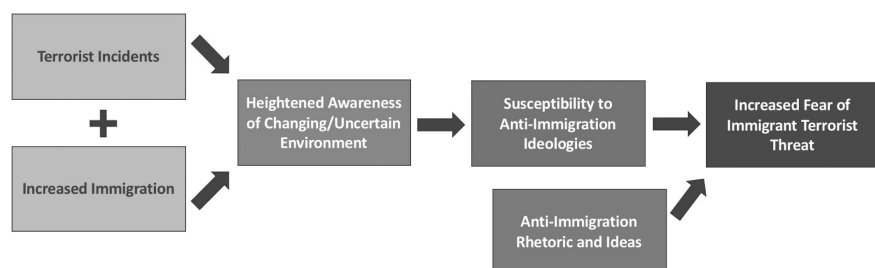
Given existing theory on the effects that immigration alone has on public opinion, we theorize that an influx of immigrants and refugees into the EU from non-EU countries alone is not enough to incite fear that these immigrants will pose a security threat. While such shocks to a nation may cause citizens to worry for their jobs, immigrants alone are not threatening enough to make Europeans fear an increase of terrorist incidents or crime (Mayda 2004).

Similarly, we can build on previous theoretical frameworks dictating that knowledge of terrorist attacks alone do not guarantee fear of immigrants among Europeans, even if those attacks take place in the citizens' native countries (Finseraas and Listhaug 2013). While Europeans are highly skeptical of opening their

borders, they do not automatically link increased terrorist incidents with the notion that incoming immigrants could threaten national security.

Previous literature does, however, clearly establish that immigration and terrorist incidents do seem to influence public opinion when the political ideology of each individual being surveyed is taken into account. Center and far-right political groups mobilize support for their policies by propagating anti-immigration rhetoric intended to increase fear of immigrant-caused attacks that their protectionist policies aim to prevent.

We theorize that increases in terrorist incidents and increased levels of immigration create a changing or uncertain environment for many Western Europeans. In such an environment, anti-immigration ideologies from political groups that believe immigration is a threat to their society are more relevant. When citizens are exposed to these ideologies in an atmosphere of increased immigration and terrorist activity, they develop greater fear and increased belief that immigration will decrease national security and increase terrorist threats.



Causal Mechanism

Based on the aforementioned theories, we suggest the following hypotheses:

1. Increases in immigration into the EU from non-EU countries alone will not increase public fear of terrorist attacks by immigrants.
2. Likewise, increased occurrence of terrorist attacks within a country will not increase public fear in that country of terrorist attacks by immigrants.
3. However, an increase in terrorist incidents and immigration, when accompanied by conservative ideological preferences, will result in greater public fear of immigration as a threat to national security.

Data and Methodology: Managing a Multilevel Data Set

In order to best test for fluctuations in public opinion across the EU, we used data from the 2016 Spring Global Attitudes and Trends Questionnaire collected by Pew Research. This dataset includes respondents from nearly twenty countries across the world and asked public opinion questions on topics ranging from the economy to cultural norms to public policy. Although the data is almost three years old, Pew Research only releases opinion survey results after two years of collection; as such, this dataset was

the most recent information Pew had to offer. With terrorism increasing in Europe since the early 2000s, we felt that—despite this time discrepancy—we would still find salient and valuable results. While there are many interesting features about this data, the most important factor for choosing this particular data is the consistency of survey content. Pew Research asked the same questions to all respondents, regardless of nationality, making cross-national comparisons much more simple and reliable. While there is significant data on public opinion for nearly every country in the world, it is difficult to find questions that are directly comparable. As such, this dataset proved more than sufficient to analyze public opinion both in the EU as a whole, as well as within each member state.

The Pew Research data contained information on twelve of the twenty-eight EU members. Although there was not full representation of all states, we felt this was sufficient enough to measure the variance within the international organization. Furthermore, it was by far the largest cross-national dataset with directly comparable outcome measures. As this data was collected before the Brexit movement in mid-2016, we decided to keep the UK in the analysis.

Focus Countries for Analysis
Pew Research Data, 2016



Outcome Measures

To best answer our question, we looked at three separate survey questions:

1. Will Refugees Increase the Likelihood of Terrorism?
2. Is ISIS a Major Threat in Your Country?
3. Are Refugees a Major Threat in Your Country?

We chose the first question as our main outcome variable, because it asked opinions on the relationship between immigration and terrorism. Although not all immigrants are refugees (and, in some spheres, are considered completely different categories), we still felt it accurately displayed the public's feelings on immigration. The European immigration crisis that began in 2013 was driven largely by refugees from

the Middle East, and refugees are therefore an acceptable measure for our research question. We chose the next two questions, “Is ISIS a Major Threat?” and “Are Refugees a Major Threat?” as outcome variables, because they can measure public opinion on terrorism and refugees (immigration) separately. If we found correlation in the first question, we could test the same analysis on the other outcomes to see if it was opinions on terrorism or refugees alone that caused the correlation.

Finally, to craft data that fully represented our hypotheses, we added the 2016 population of each country, the total number of non-EU immigrants in each country from 2013 to 2016, and the total number of terrorist incidents in each country from 2013 to 2016. The first two variables were gathered from Eurostat, with the latter coming from the Global Terrorism Database. We then took the cumulative number of immigrants and divided it by the total population to create an immigration rate for each nation. In so doing, we had the data needed to fully address how both variables impact EU public opinion on immigration and terrorism.

To analyze our data, we took a multilevel model approach. Our data was organized in a hierarchical fashion, with individual survey responses nested within larger country-variant variables including population and terrorist incidents. As such, a regular OLS regression was both insufficient and inaccurate in representing the analysis of our data. Instead, we used a mixed-model approach, which not only controls for fixed-effects between states but also allows for analysis of cross-level variables within the data. By using a multilevel mixed-model regression for hierarchical data frames, we could confidently run our statistical analysis on the 2016 Pew Research data.

Results: It's All About the Politics

To begin our analysis, we first tested the relationship between immigration and terrorist incidents. As Table 1 (below) shows, we found a positive relationship between these variables; as immigration increases, so does the amount of terrorist activity. However, the correlation coefficient between the two was only 0.1235, indicating that this relationship is weak at best. It is likely that there is correlation but not causation present in the relationship.

Understanding the present correlation between immigration and incidents, we then conducted a regression analysis on the relationship of these two variables with our main outcome measure, public opinion on refugees increasing terrorism, along with our additional outcomes of attitudes about the threat of ISIS and refugees. As seen in Figure 1, the more immigration a country experiences, the less likely it is to experience negative public opinion. However, this impact was substantively small and only statistically significant in opinions on the threat of terrorism. According to Model 1 in Table 1, a one percentage point increase in immigration rate only decreases attitudes that terrorism is likely by 0.117 units—as it is a seven-point scale, this shift is unlikely to make any true impact on opinion. Indeed, considering the largest immigration rate is less than 4 percent, even a one percentage point increase in immigration is unrealistic, which in turn signals that any change in opinion is unlikely. The decrease

in opinion on ISIS (Model 2) is even smaller: A one percentage point increase in immigration rate leads to a statistically insignificant 0.000784 unit decrease in negative opinion. This is most likely due to the universal lack of public support for ISIS; the group is responsible for hundreds of civilian deaths across the EU; therefore, it is not surprising to see a consistently high fear of ISIS across all countries. We do find interesting results between the relationship of immigration and attitudes that refugees are a threat, as seen in Model 3 of Table 1. For a one percentage point increase in immigration rate, we can expect a 0.291 decrease in negative opinion on refugees, significant at the 99 percent level. This result correlates with previous research, as it is no surprise that countries with higher immigration (and in turn higher refugee influxes) also have higher interaction with refugees, causing more of the population to view them as less threatening.

Table 1.
Regression Analysis Results

VARIABLES	(1) Will Refugees Increase Terrorism?	(2) Is ISIS a Major Threat?	(3) Are Refugees a Major Threat?
Immigration Rate	-0.119 (0.7648)	-0.000784 (0.0340)	-0.291*** (0.0574)
Incidents per 100	-0.0184 (0.0478)	-0.000220 (0.0212)	0.0311 (0.0359)
Deaths per 100	-0.165* (0.0845)	0.0559 (0.0376)	-0.0947 (0.0634)
Ideology	0.134*** (0.00768)	0.0295*** (0.00385)	0.116*** (0.00591)
Male	0.120*** (0.0198)	-0.0688*** (0.00993)	0.0116 (0.0153)
Age	0.00281*** (0.000632)	0.00270*** (0.000316)	0.00181*** (0.000485)
Family Size	0.000672 (0.00845)	0.00335 (0.00423)	-6.98e-05 (0.00651)
Constant	0.800*** (0.152)	1.545*** (0.0689)	1.272*** (0.115)
Observations	8,706	8,852	8,817
Number of groups	10	10	10

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Terrorist incidents had a much weaker effect on changing public opinion (Figure 2). Regardless of the number of incidents, belief that ISIS is a major threat remained consistently high; the regression showed virtually no increase or decrease whatsoever. Similarly, attitudes about refugees increasing terrorism hardly fluctuated. An increase of incidents per 100 only decreased negative opinion by an insignificant

0.0184 units on the 1 to 7 scale. Incidents had nearly the same impact on feelings toward refugees, increasing negative attitudes by only 0.0311 units, showing neither substantive nor statistical significance. In short, incidents proved to have very little effect on public opinion whatsoever.

Figure 1.
Effect of Immigration on Public Opinion
Various European Union Countries, 2016

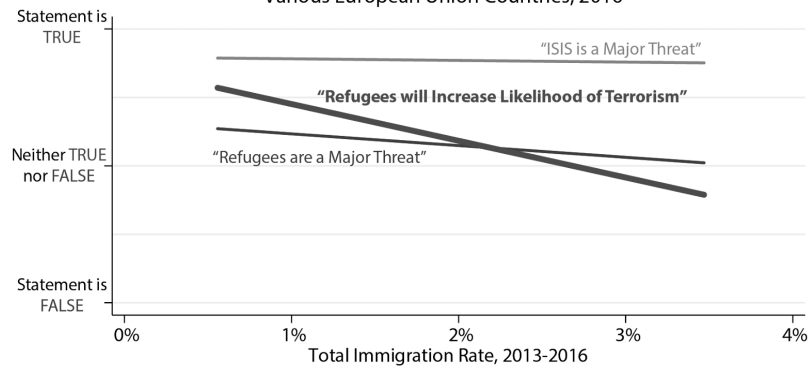
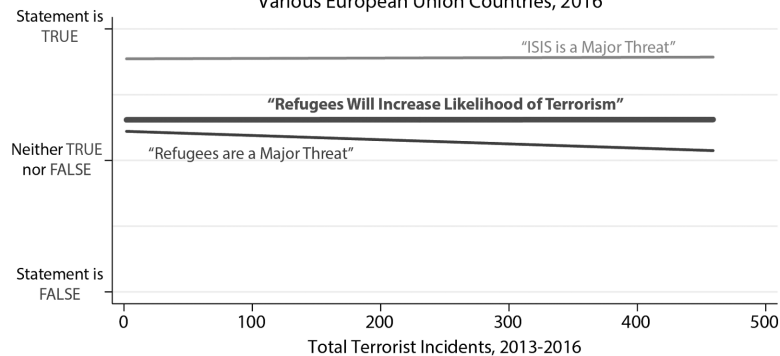


Figure 2.
Effect of Terrorist Incidents on Public Opinion
Various European Union Countries, 2016



Our initial results above proved consistent with our aforementioned theory. Supporting our proposed hypotheses, neither immigration nor incidents alone were a reliable predictor in public opinion on refugees and terrorism. Clearly, these two variables by themselves are poor indicators of public opinion on terroristic threat in EU countries. Furthermore, in each of the three models we ran, we observe a consistently significant variable: ideology. For each outcome variable, an increase toward conservative ideology increases public fear of immigration and terrorism. Upon seeing this result, we doubled down on our analysis of the possibility of political explanations for variance in EU civilian public opinion. Could conservative ideology be the explanatory factor

behind these European attitudes? To better explore our theory on the impacts of political ideology on opinions about terrorism, we ran six more mixed-model regressions to analyze if ideology, when interacted with immigration and incidents, has a higher impact on public opinion. The results are shown in Table 2.

Table 2.

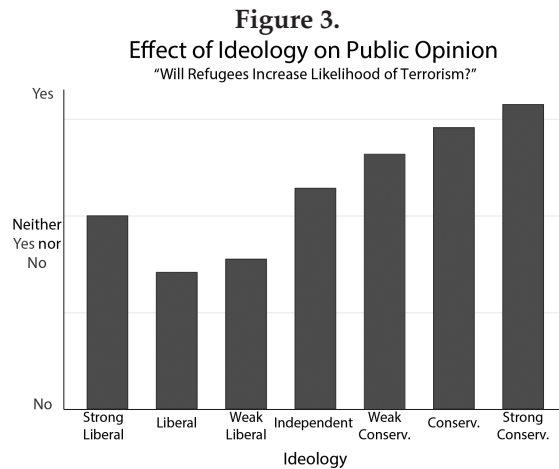
VARIABLES	(4) Will Refugees Increase Terrorism?	(5) Will Refugees Increase Terrorism?	(6) Is ISIS a Major Threat?	(7) Is ISIS a Major Threat?	(8) Are Refugees a Major Threat?	(9) Are Refugees a Major Threat?
Immigration Rate	-0.212** (0.0834)	-0.120 (0.0770)	-0.0409 (0.0376)	-0.00133 (0.0337)	-0.393*** (0.0626)	-0.292*** (0.0577)
Ideology	0.0930*** (0.0159)	0.125*** (0.00933)	0.0119 (0.00799)	0.0228*** (0.00468)	0.0715*** (0.0122)	0.106*** (0.00718)
Immigration Rate*Ideology	0.0283*** (0.00966)		0.0122** (0.00487)		0.0311*** (0.00745)	
Incidents per 100	-0.0188 (0.0482)	-0.0469 (0.0509)	-0.000393 (0.0213)	-0.0213 (0.0227)	0.0307 (0.0360)	-0.00228 (0.0383)
Deaths per 100	-0.167* (0.0852)	-0.165* (0.0851)	0.0551 (0.0376)	0.0555 (0.0373)	-0.0969 (0.0637)	-0.0954 (0.0638)
Male	0.120*** (0.0198)	0.121*** (0.0198)	-0.0689*** (0.00992)	-0.0686*** (0.00992)	0.0114 (0.0152)	0.0118 (0.0153)
Age	0.00276*** (0.000632)	0.00276*** (0.000633)	0.00268*** (0.000316)	0.00266*** (0.000316)	0.00176*** (0.000485)	0.00176*** (0.000486)
Family Size	0.000577 (0.00845)	0.000914 (0.00845)	0.00329 (0.00423)	0.00353 (0.00423)	-0.000201 (0.00651)	0.000213 (0.00651)
Incidents*Ideology		0.00892* (0.00523)		0.00656** (0.00262)		0.0104*** (0.00403)
Constant	0.939*** (0.161)	0.833*** (0.155)	1.605*** (0.0730)	1.569*** (0.0690)	1.424*** (0.121)	1.310*** (0.116)
Observations	8,706	8,706	8,852	8,852	8,817	8,817
Number of groups	10	10	10	10	10	10

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

Ideology and Refugees' Increase of Terrorism

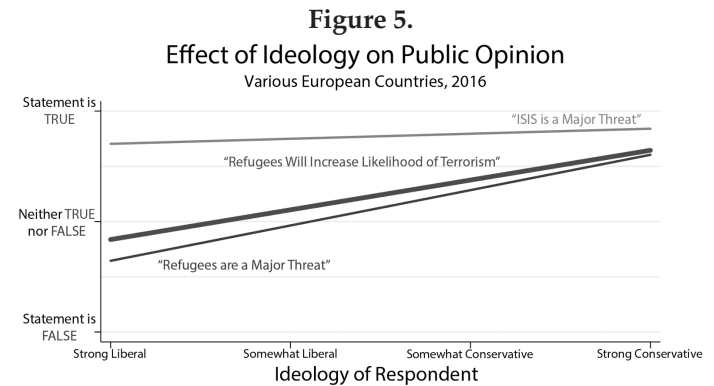
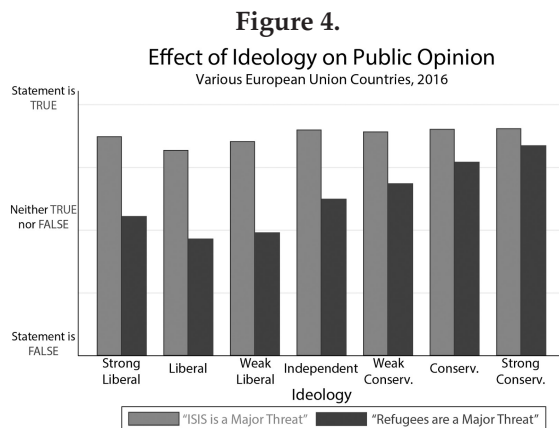
Our main findings purport that not only does ideology raise negative public opinion on terrorism but that an increase of ideology and immigration combined increases negative public opinion at a statistically significant level. Indeed, the effect of increased immigration depends on the ideology of each participant. For liberals, increased immigration does not raise public fear, whereas among conservatives, it does. For each increase of immigration rate interacted with increasing conservatism, we anticipate with 99 percent confidence a 0.0283 unit increase (on a scale of 1 to 7) in the belief that refugees will increase the likelihood of terrorism. Although small, it is significant, indicating a strong influence from conservative thought. In addition, this interaction causes the immigration rate on its own to decrease negative public opinion at the 95 percent level. Additionally, the interaction between ideology and incidents proves to significantly increase negative attitudes toward the likelihood of refugees bringing terrorism at the 90 percent level. For every one-unit shift in ideology paired with a 100-incident increase, we predict a 0.0089 increase in negative perceptions. Although not substantive, this result shows that a large enough terrorist attack could indeed begin to sway opinion based on individual ideology. Conservative ideologies are indeed related to EU members' fear of refugees bringing terrorism, particularly in cases of high terrorist activity. In all, more conservative individuals are

more likely to believe refugees will bring terrorism with them, particularly as immigration and incidents in their countries increase (see Figure 3).



Ideology and Threat of ISIS and Refugees

The interactions between ideology, immigration, and incidents (respectively) continue to hold statistical significance among our two sub-outcome measures as well. For the variable on fearing the threat of ISIS, both immigration and incidents combined with increasing ideology expand this negative public opinion at the 95 percent confidence level. Ideology interacted with immigration and incidents has an even greater impact on negative public opinion, indicating a statistical significance of 99 percent. Again, these interactions hint at differences, though they are not substantive. Figure 4 highlights the distinctions between these two outcome measures as ideology becomes more conservative. Again, conservative ideology increases negative public opinion of ISIS and refugees, especially when combined with high immigration rates and large amounts of terrorist activity.



Ideology as an Indicator

Clearly, ideology has a strong correlation with all three of our public opinion measures, particularly when combined with high levels of immigration and large amounts of terrorist incidents. Naturally, more liberal citizens are favorable toward immigration and refugees. Conservative constituencies, in comparison, tend to be less open toward immigration and the influence of refugees, perhaps due to concerns over security. Our initial theory on the impact of immigration and incidents is confirmed under our statistical testing, as political beliefs begin to shine a light on how these factors still play a part in shaping opinions of EU citizenry. Without a doubt, politics influence public opinion in much stronger ways than we initially considered. Regardless of current trends, such as rate of immigration and total number of terrorist incidents, ideology is by far the greatest predictor of individual feelings on how immigration impacts terrorism.

Implications and Conclusion

Supporting our hypotheses, immigration rates and terrorist incidents do not, on their own, explain or predict public opinion on refugees and terrorism. However, when interacted with political ideology, both of these variables become statistically significant. These results make logical sense: Extremely political issues like terrorism and immigration are undoubtedly interpreted differently depending on personal political beliefs.

These findings have relevant applications. Policy-makers pushing a pro-immigration agenda should not focus their efforts on addressing nationwide levels of immigration in EU countries but rather target more conservative communities within each state. Improving the opinions of conservative citizens about immigration's overall impact on terrorism (or lack thereof) will be the most effective way to improve overall public opinion. While it is true that some nations, such as the UK and Sweden, have overall higher public opinion than others like Hungary and Poland, it is also true that all of these countries have liberal and conservative citizenry. With a greater understanding of public opinion on immigration and terrorism,

counter-terrorism efforts and immigration policy can be better shaped to create a better environment for all European nations.

As such, there is still much to be explored. Significant terrorist events in the EU have passed since 2016, such as the radical Islamist that drove into a crowd of pedestrians at Westminster Bridge in London or the massive bomb that killed twenty-two people at the 2017 Ariana Grande concert in Manchester (Macguire 2017). Additionally, nationalist movements like Brexit have transpired since the last public opinion survey. As our results indicate a definite relationship with political ideology, it would be both interesting and important to our topic to see how movements like that in the UK influence public attitudes on the liberal issue of immigration. The best data for this research would be the 2017 or 2018 Pew Research Spring Global Attitudes Survey, but as Pew won't release this information for two years after collection, other avenues of data should be explored.

Overall, we conclude that public opinion appears to be founded less on hard data, such as immigration rates and number of incidents, and rather built upon preconceived political ideologies. As more right-winged movements are currently sweeping the developed world, our issue is increasingly salient. Better understanding of how ideology impacts public perceptions help inform better solutions to decrease the problems surrounding immigration, refugees, and modern-day terrorism.

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How Constituents React to Allegations of Sexual Misconduct in the “Me Too” Era

Samantha Frazier and Connor Kreutz

Introduction

In the wake of the #MeToo movement resulting from the *New York Times*’ explosive exposé detailing decades of sexual assault allegations against media mogul Harvey Weinstein, allegations of sexual misconduct have increased in frequency and occupied the national media (Kantor and Tohey 2017). These allegations do not discriminate. From comedians to reporters, judges to presidents, powerful men and women in all walks of life have been forced to reckon with the reality that their past indiscretions could come back to haunt them at any moment.

However, the impact of such allegations is particularly unclear within politics. Some politicians choose to resign in the face of accusations, others are voted out by their constituents, yet some emerge seemingly unscathed. We intend to explore factors that determine how voters respond to allegations of sexual misconduct as we attempt to answer the research question, “How are politicians who are accused of sexual misconduct evaluated by their constituents?”

To answer this question, we undertook a 2x2x3 survey experiment in which we randomly assigned participants to read the profiles of one of twelve hypothetical candidates with differing party affiliations, genders, and the presence or absence of sexual misconduct allegations. We created two groups of candidates—candidates with allegations made against them and candidates with no allegations, effectively a treatment and control group. Within those two groups, both male and female candidates were presented as Republican, Democrat, or with no mention of party affiliation. We then asked survey participants a series of questions regarding their support for the candidate as well as candidate ability and quality. After gathering responses and compiling a dataset pertaining to voter evaluation

of candidates accused of sexual misconduct, we began to understand what effect such allegations have on candidate perception and in what circumstances they make a difference in how voters evaluate candidates.

A Case for Expanded Research on Sexual Misconduct

The #MeToo movement is less than a year old, and nearly every day, new men and women come forward sharing their stories of harassment and abuse. Accordingly, limited research exists within the social sciences exploring how allegations of sexual misconduct affect voters' perception of politicians. Assessment of one such case, Herman Cain's failed 2012 presidential campaign, suggests that general responses to allegations of sexual misconduct are negative but vary between demographic groups (Peterson and Vonnahme 2014). Another study showed that voters are much more forgiving of candidates who deny such allegations altogether, preferring candidates that deny entirely over those that apologize (Sigal et al. 1988). It also seems that the type of scandal makes a difference in voter evaluations. Doherty et al. (2011) found that voters are more forgiving of moral scandals than financial scandals so long as the moral scandal does not involve some sort of abuse of power. However, Carlson et al. (2000) found that both forms of scandals—financial and moral—result in lower appraisals of candidate character in general, indicating that although voters might be more forgiving of one type of scandal over another, candidates' images are still negatively affected by wrongdoing. A different study found that the negative effect of scandal varies over time. Exposure to scandalous information had an immediate negative effect on candidate evaluations, but the strength and magnitude of the effect of scandal diminished over time, particularly amongst those who were already prone to support the candidate in question (Vonnahme 2014).

Partisan considerations may also influence how media covers scandals and how voters evaluate accused politicians. Snyder and Puglisi (2011) found that partisan-leaning news sources tend to cover scandals pertaining to the opposing party more frequently than scandals within their own party. Additionally, voters seem to be willing to make exceptions and excuses for embattled candidates that share their ideological values (i.e., members of their party) but are unwilling to make similar exemptions for candidates of opposing party ideologies (Sigel 1964). This finding is echoed by Fischle (2000) in his study of citizen reactions to the Clinton-Lewinsky scandal through the lens of motivated reasoning. The theory of motivated reasoning holds that people are willing to discount or dismiss troubling information that contradicts their previously held beliefs or group identity in order to avoid cognitive dissonance. Fischle found that motivated reasoning played a significant role in evaluations of the Clinton post-Lewinsky scandal, and the influence of things such as the credibility of an allegation on support for Clinton were conditional upon previous support of the president. This suggests that voter partisanship or group identity may play a significant role in the way a voter perceives a candidate who has been accused of sexual misconduct.

Stewart et al. (2013) found that female politicians are evaluated differently than male politicians in the face of scandal. They discovered that male survey respondents were more likely to critically evaluate a female governor than a female respondent would. This gender-based evaluation method has the potential to carry over into evaluations of sexual misconduct allegations, an area relatively devoid of academic research at this time. We feel that this is an area in which our research stands to make a contribution. Are voters more likely to stand by a candidate of their same gender? Are they more likely to stand by a candidate of their same party? Our research examines both questions and makes a case for the latter.

Theoretical Framework and Hypotheses

Hypothesis #1: Candidates accused of sexual misconduct will garner less support than candidates not accused of sexual misconduct.

Common sense would suggest that publicized allegations of sexual misconduct against candidates would not make a candidate more popular, and would, in fact, likely have the opposite effect. Assuming voters do not look upon sexual abuse favorably, that they can translate that unfavorable view of misconduct to an unfavorable view of the candidate accused of the misconduct, and that electoral support for a candidate is reduced by unfavorable perceptions of said candidate, we hypothesize that candidates accused of sexual misconduct will receive less support than candidates who have not been accused of sexual misconduct. Important to note is the aggregate nature of this hypothesis—that when measured across all genders and political affiliations, raw support for a candidate is lower when that candidate is accused of misconduct.

Hypothesis #2: Voters are likely to evaluate co-partisans accused of sexual misconduct more favorably than members of the opposite party.

Although allegations of sexual misconduct are likely to negatively impact a voter's perception of any given candidate, we believe the extent to which these allegations impact candidate perception depends on the political affiliation of the voter. Many Trump supporters are willing to ignore the array of sexual misconduct allegations leveled against Donald Trump, just as many Democrats were willing to ignore allegations leveled against Bill Clinton. We predict that shared partisanship will diminish the impact of a credible allegation of sexual misconduct on candidate perception. Although a negative effect is likely to stem from all allegations, we anticipate that the degradation in candidate perception will be smaller when the candidates' party affiliations are included in the candidate descriptions. Additionally, we expect that evaluations of candidates with no party label specified will be similar between Republican and Democrat respondents.

Hypothesis #3: Voters are likely to evaluate candidates of the same gender more favorably than members of the opposite gender.

Furthermore, we believe that shared gender will also influence the effect of the allegation on candidate perception—meaning, women are more likely to support female candidates through scandals, and men are more likely to support male candidates. We also believe the reverse of this to be true—that men will evaluate female candidates accused of sexual misconduct more harshly than they evaluate male candidates, and vice versa. However, given the lack of women in national political positions, substantive examples of female politicians reckoning with allegations of sexual misconduct are few and far between. Additionally, there are far fewer women accused of sexual misconduct than there are men. Still, we believe that women will be more likely to support other women through scandal, whether the candidate is hypothetical or not.

Research Design

In order to explore the effect that allegations of sexual misconduct against a candidate have on voter perception of a candidate, we conducted a survey experiment in October 2018 through Amazon Mechanical Turk to test a sample of likely U.S. voters. As part of the larger Political Science 410, 2018 survey at Brigham Young University, 1,000 subjects were randomly assigned to read the profile of one of twelve different candidates with differing party affiliations, genders, and associated allegations of sexual misconduct. All other aspects of the biographic information are held constant. The following is an example of one of the vignettes that survey takers were asked to respond to:

Example Profile

Mr./Mrs. Johnson is a Democrat/Republican running for United States Senate. He/she is an avid hiker and the former CEO of a successful regional company. Johnson is a dedicated family man/woman, and drives his/her son's school carpool on a weekly basis. Johnson's career thus far has been relatively scandal-free, although recently an allegation of sexual misconduct was leveled against him by his former employee. As the election approaches, Mr. Johnson plans to remain focused on the issues and will continue to refine his/her highly praised proposed education initiative in the coming weeks.

Subjects were then asked to rank the candidate on multiple criteria of likability including competence, trustworthiness, and overall support for the candidate. Accompanying questions inquiring about the subject's gender, education, income, party affiliation, age, and religious affiliation were also posed. Candidate profiles were enhanced biographies of the following:

Table 1.

	Democrat	Republican	Not Specific
Male	Candidate 1 —Senate Candidate —Male —Democrat —Allegation	Candidate 2 —Senate Candidate —Male —Republican —Allegation	Candidate 3 —Senate Candidate —Male —Not specified —Allegation
	Candidate 4 —Senate Candidate —Male —Democrat —No allegation	Candidate 5 —Senate Candidate —Male —Republican —No allegation	Candidate 6 —Senate Candidate —Male —Not specified —No allegation
Female	Candidate 7 —Senate Candidate —Female —Democrat —Allegation	Candidate 8 —Senate Candidate —Female —Republican —Allegation	Candidate 9 —Senate Candidate —Female —Not specified —Allegation
	Candidate 10 —Senate Candidate —Female —Democrat —No allegation	Candidate 11 —Senate Candidate —Female —Republican —No allegation	Candidate 12 —Senate Candidate —Female —Not specified —No allegation

Questions measuring the approval/likeability of a candidate were as follows:
Please indicate how strongly you **agree** or **disagree** with the following statement

1. This candidate is competent.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

2. This candidate is trustworthy.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

3. I would support this candidate.

- Strongly agree

- b. Agree
- c. Somewhat agree
- d. Neither agree nor disagree
- e. Somewhat disagree
- f. Disagree
- g. Strongly disagree

The survey yielded a data set of 1,002 observations of individuals ages eighteen to seventy-two. This data, collected through Amazon Mechanical Turk, includes only adults. These adults were not necessarily likely voters or even people eligible to vote. The data also only captures the opinions of individuals in October 2018.

Analysis and Findings

Balance Tests

Prior to our data analysis, we conducted a series of randomization checks in order to ensure that the differences yielded from our research design come from comparable groups. We were most concerned with ensuring that balance had been achieved between the treatment and control conditions within our various treatments. We found balance in all but one of our twelve treatment groups. Since all analysis in this paper was conducted between groups of treatment groups and not between individual groups, the imbalance in one single groups does not skew our findings.

Table 2.

Balance Tests: Four Aggregate Treatment Groups					
	Republican	Non-Republican	Democrat	Non-Democrat	p-value (diff. of means)
1. Republican Candidate			45.5%	43.4%	0.525
2. Republican Candidate	35.7%	33.4%			0.404
3. Democratic Candidate			42.8%	44.7%	0.553
4. Democratic Candidate	34.9%	33.4%			0.640

Testing Hypotheses

After all data was collected and cleaned, and balance in the data was confirmed, difference of means testing yielded initial insights into the effect that sexual misconduct allegations against a politician have on her or his support. By comparing the means of the competency, trustworthiness, and overall support scores for candidates with sexual misconduct allegations raised against them and those without, we begin to understand what effect said allegations have on the perception of the candidate.

Aggregate Support

Through difference of means testing, we found that potential voters, on average, reported significantly less support for candidates accused of sexual misconduct than

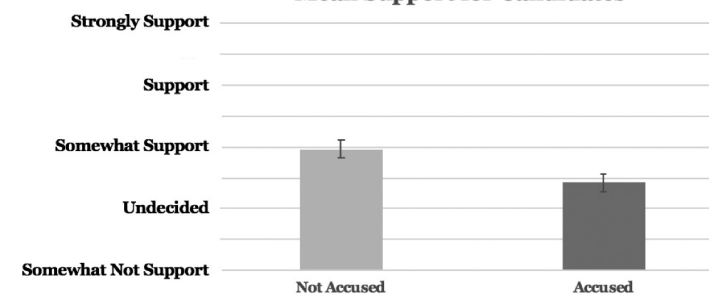
those who had not been. Table 3 shows voters who were asked to rate their support of a generic senate candidate who had not been accused of sexual misconduct reported, on average, a support score of 4.87 (out of 7), whereas the voters asked about the accused reported, on average, a score of 4.42. One would imagine that the average voter does not look kindly upon sexual misconduct; thus, these results are not necessarily surprising. However, while the aggregate level of support across candidates of different genders and political affiliations came out as expected, the breakdown by party proved to be more interesting.

Table 3.

Test	Accused Candidate Mean Support	Non-Accused Mean Support	Difference in Mean	P-value
Aggregate Support	4.43	4.97	0.54	0.0000
Republican Voters' Support for Republicans	5.31	5.53	0.22	0.3497
Democratic Voters' Support for Democrats	4.51	5.58	1.07	0.0000
Female Voters' Support for Female Candidates	4.42	4.84	0.64	0.0680
Male Voters' Support for Male Candidates	4.27	4.94	0.67	0.0000

Note: Significant ($p < 0.05$) differences in support exist between accused and non-accused Democratic candidates adjudicated by Democrats, and male candidates adjudicated by men.

Figure 1.
Mean Support for Candidates



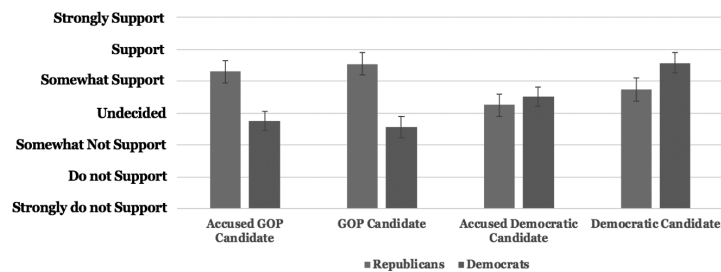
Partisan Support

We conducted additional difference of means tests, this time examining in-group and out-group support by party. Results found in Table 2 indicate that Republicans stick with accused candidates from their party, while Democrats are not afraid to withdraw support. For example, Republicans rated mean support for a non-accused Republican at 5.53 on the 7-point scale, while Republican support for a comparable

accused Republican fell only to 5.31—a statistically insignificant difference of only 0.22 points. Mean Democratic support of accused Democrats fell to 4.51 from 5.58—a statistically significant difference of 1.07 points.

In all cases, voters report greater support for the candidate from their own party, even when the difference is slight. When support for accused political candidates is broken down between Republican and Democratic candidates, we see that Republicans, on average, report much higher support for candidates from their party, but the difference in support between Republican and Democrat respondents is minimal when the candidate is a Democrat.

Figure 2.
Partisan Support for Candidates



Regression Analysis on Partisan Support

While we feel fairly confident about the findings from our hypothesis testing regarding in-group and out-group party support, we thought it prudent to conduct a series of regression analyses in order to control for variables such as age, gender, and education level. By doing so, we measured how each of these individual characteristics weigh into the subject's ultimate view of the candidate and could be more certain that the differences we observed were truly significant differences after taking these other variables into account.

The first model in Table 4 yields results very similar to our expectations. After controlling for education, income, age, and the gender of the candidate, Column 1 demonstrates that allegations of sexual misconduct result in a significant drop of 1.068 points for Democratic support of Democratic candidates. This means Democrats punish their co-partisans with lower electoral support when said candidates are accused of misconduct. Interestingly, only the treatment variable is significant in this regression, suggesting that perhaps only accusations and the party of the candidate are significant indicators of support.

The same cannot be said of Republicans viewing Republican candidates, as shown in Column 2. We see only a slight (0.0789) drop in support for an accused Republican candidate among Republican respondents, and this drop is not significant. This indicates that Republicans may be more willing to put politics before personal conduct and look the other way when candidates in their party are accused of sexual misconduct of any sort.

Table 4.

	(1) Dem Voter x Dem Cand.	(2) GOP Voter x GOP Cand.	(3) Dem Voter x Dem Cand.	(4) GOP Voter x GOP Cand.	(5) Dem Voter x Dem Cand.	(6) GOP Voter x GOP Cand.
Dependent Var.	Support	Support	Trustworthy	Trustworthy	Competent	Competent
Accused	-1.068*** (0.199)	-0.0789 (0.235)	-0.947*** (0.197)	-0.0304 (0.217)	-0.362** (0.164)	0.0778 (0.152)
Male Candidate	-0.317 (0.200)	-0.256 (0.233)	-0.180 (0.198)	-0.295 (0.216)	-0.237 (0.165)	-0.248 (0.151)
Female	-0.0466 (0.203)	-0.636** (0.249)	-0.158 (0.200)	-0.394* (0.231)	-0.145 (0.167)	(0.161) -0.0237
Education	-0.0619 (0.125)	0.212 (0.141)	0.00317 (0.123)	0.0830 (0.131)	0.0295 (0.103)	-0.0237 (0.0915)
Age	0.00499 (0.00848)	-0.0111 (0.0106)	-0.00533 (0.00838)	-0.0102 (0.00983)	-0.00559 (0.00699)	0.0103 (0.00687)
Constant	5.890*** (0.500)	5.247*** (0.633)	5.858*** (0.494)	5.743*** (0.586)	6.192*** (0.413)	6.019*** (0.410)
N =	141	115	141	115	141	115
R-squared	0.194	0.120	0.158	0.069	0.062	0.049

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Dependent Variable: Support for Candidate. Only in the case of the Democratic voter and Democratic candidate does accusation have a significant (p<0.05) negative effect on voters' support for the candidate. We would also expect a significant decrease in support for the accused GOP candidate adjudicated by a Democratic voter, but the support for the regular candidate is also low. It is likely that support here simply bottoms out.

This difference holds true across all outcome variables included in our survey. Column 3 shows that allegations of sexual misconduct result in a 0.947 drop in appraisals of Democratic candidate trustworthiness among Democratic respondents, the effects of which were statistically significant at the 99 percent level. A statistically significant drop of 0.362 also occurred in evaluations of Democratic candidate competence among Democratic respondents (Column 5), although the drop was far more modest than those seen in support and trustworthiness. However, among Republicans adjudicating Republicans on all measures, there was no statistically significant drop, again indicating that Republicans in today's political environment are far more willing to look the other way when it is one of their own accused of sexual misconduct, while Democrats are unwilling to ignore such allegations.

Gendered Support

While we suspected that some sort of gender bias was present that would cause voters to evaluate candidates of the same gender more favorably than members of the opposite gender, no such effect seems to exist (see Table 3). Difference of means

tests examining the effects of gender showed there were no significance differences in the support voters offered for accused candidates of the same gender versus candidates of the opposite gender. Regression analysis controlling for party, age, education, and income yielded similarly insignificant results. These findings failed to confirm our hypothesis that voters punish accused candidates of the opposite gender to a greater degree than those of the same gender. At the end of the day, party identification proved far more important than gender in voter evaluations.

Conclusion

One clear limitation of our project is the medium through which we conducted our survey, Amazon Mechanical Turk. The population that chooses to use this web site is typically not representative of the general population as a whole. Survey-takers tend to be more liberal and younger than the population of the United States. There is also concern with the external validity of the results yielded from a survey experiment of this nature. We cannot ensure that these results are replicable in the outside world, nor can we determine the intent and rationale of the respondents taking the survey.

Additionally, although we attempted to create realistic hypothetical candidate profiles to present to survey takers, these are not real candidates, and certain background context on the individuals will be missing. In an actual election, most voters would have more than a simple vignette by which to judge candidates, and traits such as likability, attractiveness, and charisma would likely impact voter evaluations of candidates accused of sexual misconduct. In this case, survey-takers have no real connection to these hypothetical candidates and, therefore, lack the background context that often influences the manner in which voters grapple with allegations of sexual misconduct leveled against beloved politicians in the real world. Additionally, we don't test the role that evidence may play in allegations against candidates. Allegations accompanied by evidence may have more bearing on voters' view of accused candidates and would be important to investigate.

Another notable limitation to the validity of our research is the lack of an opponent candidate for purposes of comparison. An important factor in the support of any political candidate's approval is the favorability of their opponent. Often, individuals vote for a candidate simply because they like that candidate just slightly more than the other. Without an opposing candidate, it is difficult to understand how voters truly feel about a politician. Elections do not take place in a single-candidate vacuum but, unfortunately, this research does.

However, despite these limitations, our experiment offers unique insight into the array of considerations undertaken by voters rendering the topic of sexual misconduct in the political realm so complicated. Given the lack of quantitative research exploring the impact of sexual misconduct and candidate perception, we believe that our research will fill an important gap in the post #MeToo scholarly landscape. While we cannot hope to give a definitive answer on why political actors such as Donald

Trump emerge unscathed from a sea of allegations while others such as Senator Al Franken are forced to resign, we hope we will uncover some of the factors at play as voters evaluate the influx of allegations regarding powerful men and women and how these evaluations impact the political arena as we know it.

Research on public perception of political candidates accused of sexual misconduct is still in its infancy. As more individuals come forward with accusations against public figures, the researchability of voters' response to these types of allegations will improve. At this point, we agree the best method for understanding these phenomena is through survey experiments. Findings from these methods have shown a significant decrease in support for candidates accused of sexual misconduct. Our findings also indicate Republicans do not withdraw support from accused Republican candidates but do withdraw support for accused Democrats, illuminating new areas for research, specifically as to why Republicans are lenient toward co-partisans and Democrats are not. We hope these findings will prompt further research in the aforementioned areas as the public becomes more sensitive to allegations of sexual misconduct, and respond accordingly, regardless of party or gender.

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Not Just Hot Air: How Rhetoric Changes Public Opinion on Windmills

Alena Smith

Introduction

Environmental concerns are nothing new in U.S. politics. More than half of U.S. citizens rank the environment as a top policy issue (Anderson 2017), and support for green energy has been on the rise (Kennedy 2017). One popular source of such energy comes from windmills. Despite the support for eco-friendly energy, windmills produce only 6.2 percent of the U.S.'s electricity today (Electricity Markets and Policy Group 2018). Many suggest that the disparity between green energy support and the low number of windmills in the U.S. is due to Not in My Backyard (NIMBY) opposition (Smith and Klick 2008). While individuals may tout the benefits of green energy, when faced with constructing an industrial-sized windmill within a few miles of their home they may rethink their position. Concerns including increased energy costs, decreased home values, constant noise, and landscape aesthetic, may dissuade individuals from supporting windmill construction in their city. In 2017, residents living in Lincoln County, South Dakota, successfully used these concerns to convince their legislators to block the creation of a proposed wind farm (McFetridge 2018). If a legislators' primary concern is reelection (Mayhew 1974) and legislators predict strong pushback from their constituents, they are unlikely to suggest or support the construction of local windmills.

While local government cannot be expected to change windmill designs to mitigate these concerns, they can emphasize windmill benefits. Using such framings, legislators can shape public opinion to increase community support for windmills. Argument framing has been widely studied and found to be effective, as individuals' perception of an issue can often have a greater impact than the issue itself (Cohen 1995). By studying which pro-windmill arguments are most effective, this study will help local

legislators and environmental activists know which arguments will generate most support for local windmills, which is likely applicable to many other sources of renewable energy.

In this study, participants in a vignette survey experiment were asked whether they would support an industrial-sized windmill being built near their home with one of four positive framings: environmental benefits, economic benefits, inclusion in the decision-making process, and social desirability of building windmills locally. The economic benefits treatment most increased support in all participants, regardless of political party. Democratic respondents also showed more support in the environmental benefits and social desirability conditions, while Republicans were not as impacted by these treatments.

This study demonstrates the value of issue framing, confirming that public opinion is malleable and can be changed by certain arguments. It also reveals that economic interests are a crosscutting issue for Republicans and Democrats, and arguments highlighting economic benefits can increase bipartisan support for environmental issues. Finally, this study suggests that those attempting to build public support for environmental measures, such as windmills, should focus on informing the public about their personal and community economic benefits.

Literature Review and Conceptual Framework

There are various theories behind the discrepancy between support for wind power and the local construction of windmills. As previously addressed, the NIMBY phenomenon is a frequently cited explanation for public opposition to local wind projects (Smith and Klick 2008). While people may support an idea in theory, they become more hesitant when asked to bear the required costs to implement that idea. For example, while people may support building low-income housing, few support such housing in their communities. Windmills carry various associated costs, including a possibility of increased energy bills, decreased home values, increased deaths of bats and birds, cleared vegetation to make room for the windmills, constant noise from the turbines, and disrupted scenic views (Union of Concerned Scientists 2013; Pasqualetti 2000). Several researchers have studied public perceptions of windmills in an attempt to isolate the impact of this phenomenon, some find that NIMBY does have an affect (van der Horst 2007), while others conclude that NIMBY does not adequately explain local opposition to windmills. Maarten Wolsink (2007, 1191), for instance, argued that attitudes toward wind power in general are positive, while attitudes toward wind farms are negative. In a study of Texans living near wind farms, Swofford and Slattery (2010) also concluded it was the negative attitudes toward wind farms, and not NIMBY, that were the primary reason communities opposed local windmills.

Others have hypothesized that exclusion from the decision-making process may be the primary cause of public opposition to local wind farms. Using examples in Europe, Wolsink (2007) hypothesized that public hostility to new windmills is often triggered by top-down, centralized processes of windmill planning. Such approaches meant voters

had little say in the process, and communities with these processes showed more opposition to the windmills built in their communities than those without such hierarchical approaches. In another study, interviews with a random selection of U.S. citizens who lived within five miles of a wind project indicated an overall positive attitude toward the local windmills. These attitudes highly correlated with several factors, including planning process perceptions (Electricity Markets and Policy Group 2018). When individuals felt more involved in the planning, location, and construction of local windmills, their perceptions of the windmills were more positive.

Like community perceptions of windmills, public opinion is also debated. Philip Converse (2006) held that the public does not have strong opinions about most political issues and, thus, lack coherent or consistent opinions. Public opinion on issues, he argued, was more random than structured and stable. William Riker (1996, 5) likewise contended that public opinion is not consistent but argued that such opinions were malleable by political elites. Achens and Bartel (2004), in their study of New Jersey in 1916, found that events seemingly outside of the government's control, such as shark attacks, could prove costly for legislators. This, they concluded, revealed that voters can act irrationally, punishing or rewarding legislators due to seemingly random events.

Other researchers take a more optimistic view of opinion formation, such as John Zaller (1992), who argued that people have systematic ways of forming and expressing opinions, as their expressed opinions averaged across salient considerations. Previously held opinions can then change when presented with a new argument, rather than changing at random. This theory is utilized when legislators use issue framing or attempts to showcase issues in a specific way by employing certain arguments, as this framing has been found to impact belief opinion and importance (Cohen 1995; Nelson and Oxley 1999; Slothuus and de Vreese 2009). The way issues are presented to individuals, particularly when these individuals do not hold strong opinions on these issues, can influence their opinions and increase or decrease support for the issue.

If community opposition to windmills is due to the personal costs that NIMBY seeks to protect people from, support for local windmills should increase when community members or survey participants are told of benefits they'll be able to experience for themselves. As these benefits would counteract the expected costs, the primary cause of opposition as theorized by the NIMBY phenomenon should hold less sway for the participants. If these positive arguments increase support for windmills, this suggests that public opinion is not completely random. It would suggest that individuals form opinions based on the available information and by salient considerations. An increase of support by both Republican and Democratic respondents would further show the effectiveness of issue framing and the malleability of public opinion, as the Republican Party tends to oppose increasing environmental protections and alternative energy sources. This would

illustrate that public opinion is not only based on partisan concerns and political divides; rather, certain framings can impact members of both parties and increase their support for certain public policies.

Experimental Design

I created a vignette survey to study the impact of different pro-windmill framings. Participants were randomly assigned to one of five groups and received different vignettes:

1. Control (no treatment)
2. Environmental Treatment
3. Economic Treatment
4. Open Process Treatment
5. Social Desirability Treatment

The control group was only told that their city council had recently announced the plan to build three industrial-sized windmills within five miles of the participant's home. Those in the environmental treatment were told that windmills protect the environment by decreasing their town's reliance of fossil fuels and reducing their carbon footprint, while those in the economic treatment group were told local windmills would decrease their monthly energy bill and bring jobs and economic growth to their town. Those in the open process treatment group differed from these concerns in that, instead of focusing on pro-windmill arguments, the treatment focused on the process of building local windmills. Participants were told that the city council wanted a fair and open process, with community input on details such as the windmills' location, measures taken to protect wildlife and the environment, and economic concerns. This draws from the conclusions of a qualitative study that found when community members were asked for their input on windmill construction, their approval for the windmills was markedly higher (Electricity Markets and Policy Group 2018). The social desirability treatment focused on the social desirability of supporting windmills. Participants in this group were told a poll conducted of their town found that 73 percent of the residents supported the windmills. Some studies have found that individuals make the largest and most lasting changes over environmental issues, such as energy usage, when influenced by peer pressure, as opposed to environmental and monetary messages (Schultz et al. 2007). Participants were then asked to rate their support of the proposed windmills on a five-scale opposition spectrum, which ranged from "Strongly Oppose" to "Strongly Support." The full vignettes are provided in the Appendix.

In these scenarios, windmills were specifically described as industrial-sized to reduce misunderstandings over which type of windmill would be built and participants were told they would be built within five miles of their home to address NIMBY concerns. For an elected official to have useful policy recommendations on windmills, they need to have data that accurately reflects the situations they will face.

Data

The data was collected via an Amazon Mechanical Turk (MTurk) survey. This site allows individuals from across the U.S. to take paid surveys online. As MTurk administers surveys in a randomized manner, it has been useful to universities and individuals conducting experiments. While MTurk respondents tend to be younger and more liberal than the general public, they also tend to be much more representative of the general public than convenience samples commonly used by other political science researchers, and their results overwhelmingly match those from ANES (Berinsky et al. 2012).

There were 1,007 MTurkers who filled out the survey on 23 March 2018. The sample overrepresented whites, Asians, and younger individuals while underrepresenting blacks and Hispanics. However, it was relatively close to the partisan makeup of the U.S.—37 percent of respondents were Democrats, compared to a national average of 33 percent; 40 percent were independents, compared to the nation's 37 percent; and 24 percent were Republicans, as opposed to a national average of 26 percent (Pew Research Center 2018A).

When tested for balance, no significant demographic differences were found between three treatment groups and the control group. The fourth treatment group, or Social Desirability group, was significantly more Democratic, liberal, and female. However, given the size of these groups (approximately 190 participants in each group) and the number of demographics tested (six), it is unsurprising that at least one demographic is significantly different. Moreover, as the findings will show, this treatment did not have the largest effect, despite Democrats and liberals being the most likely to support windmill construction, making such a difference relatively unimportant.

Results

Figure 1 shows the mean support of each group, with responses coded from 1 ("Strongly Oppose") to 5 ("Strongly Support"). While all treatments increased support for windmills, the economic treatment clearly had the greatest impact on the levels of support shown by participants. Compared to the control's average support of 3.77, the economic treatment had the largest mean at 4.27, which was significant at the 1 percent level. The second highest was the environment treatment, with a mean of 4.07 and also significant at the 1 percent level. The social desirability treatment was significant only at the 10 percent level, with a mean of 3.94. The open process treatment was not statistically significant, though its mean of 3.86 was slightly higher than the control's mean.

Figure 2 shows the aggregate responses for participants in the control compared to participants in each treatment. Nearly all treatments and the control had a pattern of increasing support but a drop at "Strongly Support." The economic treatment was the only treatment that resulted in a greater number of participants marking "Strongly Support" than any other response. Not only did the mean support for windmills increase the most for the economic treatment but participants' intensity of support increased.

To analyze the relationship between treatment groups and support for local windmills, I used a linear probability model. This model accounts for the different treatment groups while controlling for other important variables including party identification, age, and gender. The linear probability used was the following:

$$\text{Predicted Participant Support for Windmills} = \beta_0 + \beta_1 + \text{Treatment Effect} + \beta_2 \text{Partisanship} + \beta_3 \text{Ideology} + \beta_4 \text{Sex} + \beta_5 \text{Windmill in Town} + \beta_6 \text{Age} + \beta_7 \text{Education} + \beta_8 \text{Income} + \beta_9 \text{Geographic Density} + \delta$$

Figure 1. Mean Support for Windmills, by Treatment

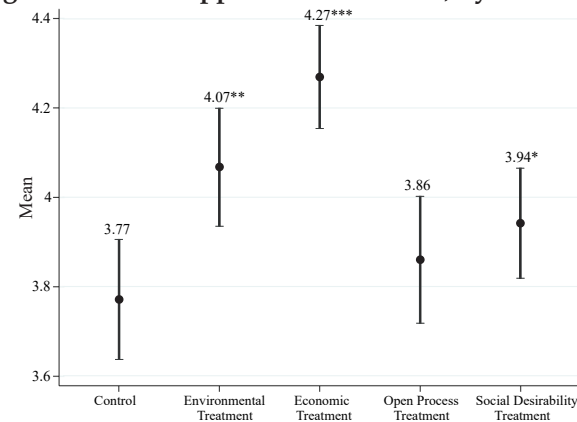


Figure 2. Proportion of Responses for Each Treatment

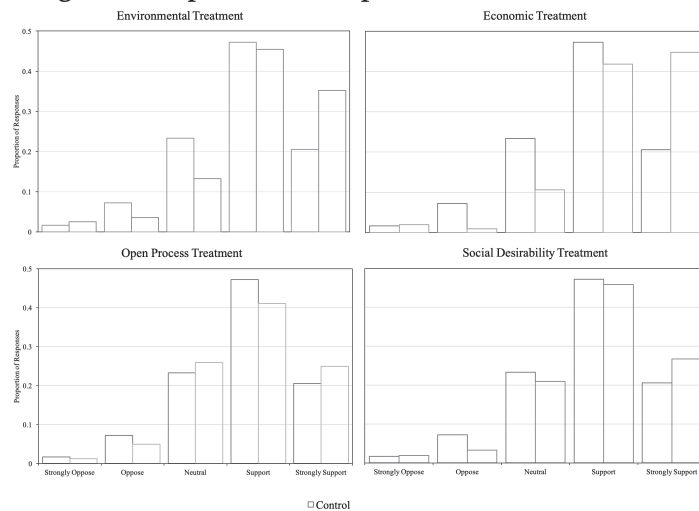


Table 1 gives the results of a linear probability model, showing the effect of each treatment on support with various demographic controls. Party identification and political ideology were measured on a binary scale as Republican or not Republican

and conservative or not conservative. “Male” and “Windmill in Town” were both respective binary variables controlling for gender and whether the participant had a windmill near their home. Education was coded on a five-point scale, age on a six-point scale (each age group included ten years), and income on an eight-point scale. Suburban was a binary variable describing participants’ geographic density.

Table 1. Effect of Treatments on Support for Windmills

Variable	Support
Environmental Treatment	0.323*** (0.089)
Economic Treatment	0.546*** (0.088)
Open Process Treatment	0.108 (0.094)
Social Desirability Treatment	0.232*** (0.088)
Republican	-0.180* (0.107)
Conservative	-0.289*** (0.106)
Male	-0.124** (0.057)
Windmill in Town	0.153* (0.082)
Age	-0.027 (0.022)
Education	-0.056* (0.034)
Income	0.007 (0.015)
Urban	-0.016 (0.056)
Constant	4.194*** (0.150)
Observations	950
R-squared	0.106

Coefficients reported from regression model, with robust standard errors in parentheses.

Significance codes: *** p<0.01, ** p<0.05, * p<0.1.

Out of the treatment groups, the environmental, economic, and social desirability treatments were all statistically significant at the 1 percent level. As previous analysis revealed, the economic treatment predicted the greatest increase of support, followed by the environmental treatment. The open process treatment was not significant. Out

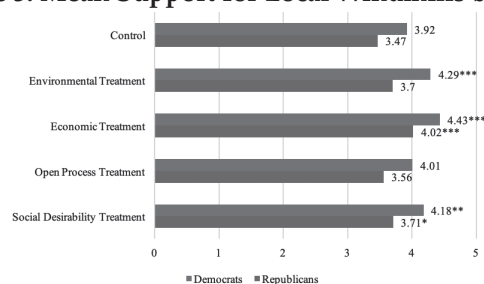
of the demographic controls, Republicans, conservatives, men, and educated individuals were more likely to oppose local windmill construction, while those who already had local windmills were more likely to support windmill construction.

In addition to analyzing which rhetoric was most effective in increasing public support for local windmills, political affiliations appear to effect the reception of these various messages. I divided participants by their partisanship, either Republican or Democrat, excluding individuals who marked themselves as “true independent,” “Other,” or “Don’t Know.” Those who marked themselves as “Strong,” “Not so Strong,” and “Independent Leaning Democrat” or “Independent Leaning Republican” were put into their respective groups. As independent leaners have been found to resemble weak partisans rather than true Independents (Keith et al. 1992), I included them in my analysis in their respective political parties. Table 2 shows the number of participants by treatment, separated by party identification, while Figure 3 shows the mean results for support of local windmills, separated by their political affiliation and treatment group.

Table 2. Number of Participants by Treatment

Treatment	Democrats	Republicans
Control	100	49
Environmental Treatment	102	57
Economic Treatment	109	64
Open Process Treatment	81	46
Social Desirability Treatment	92	82

Figure 3. Mean Support for Local Windmills by Party



Note: This figure shows the mean of the control and each treatment by participants' party identification, whether Republican or Democrat. Significance was determined by a linear probability model as shown in Table 3. Significance codes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The effect of rhetoric changed when broken down by party. The economic treatment was still statistically significant for both Republicans and Democrats. Individuals in both parties best responded to arguments that would benefit their own wallet and their town's well-being as included in the first treatment. The

environment was statistically significant at increasing Democrats' public support for windmills but not for Republicans. This difference on the environmental argument was unsurprising. The Democratic Party is known for their beliefs in environmental protection, which may extend to reducing or eliminating fossil fuels. Consequently, it is unsurprising that their base responded to that argument more than Republicans, whose party has not made a similar environmentally friendly stance to their platform.

Table 3. Effect of Treatments on Support for Windmills, by Party

Variable	Support			
	Democrats	Republicans	Independents	All Respondents
Environmental Treatment	0.382*** (0.112)	0.306 (0.189)	0.270 (0.219)	0.323*** (0.089)
Economic Treatment	0.499*** (0.109)	0.591*** (0.184)	0.413* (0.227)	0.546*** (0.088)
Open Process Treatment	0.00 (0.118)	0.132 (0.199)	0.014 (0.222)	0.108 (0.094)
Social Desirability Treatment	0.254** (0.114)	0.300* (0.175)	0.007 (0.224)	0.232*** (0.088)
Republican				-0.180* (0.107)
Conservative	-0.170 (0.222)	-0.180 (0.091)	-0.401** (0.182)	-0.289*** (0.106)
Male	0.056 (0.074)	-0.181 (0.115)	-0.072 (0.146)	-0.124** (0.057)
Windmill in Town	0.132 (0.111)	0.092 (0.154)	0.349* (0.193)	0.153* (0.082)
Age	-0.006 (0.029)	-0.084* (0.045)	0.000 (0.054)	-0.027 (0.022)
Education	0.007 (0.044)	-0.224*** (0.074)	-0.060 (0.079)	-0.056* (0.034)
Income	-0.040** (0.018)	0.079*** (0.030)	0.027 (0.039)	0.007 (0.015)
Suburban	-0.035 (0.074)	0.122 (0.113)	-0.163 (0.141)	-0.016 (0.056)
Constant	4.080*** (0.188)	4.349*** (0.366)	4.123*** (0.361)	4.194*** (0.150)
Observations	484	298	155	950
R-squared	0.070	0.095	0.105	0.106

Coefficients reported from regression model, with robust standard errors in parentheses.

Significance codes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3 shows the results of a linear probability model run separately on Democrats, Republicans, and independents, compared to results from all participants. The economic treatment had the greatest impact on members of all three groups and was significant at the 1 percent level for both major parties. Even when divided by party, economic arguments clearly increased support for all participants the most. The environment treatment (significant at the 1 percent level) was significant only for Democrats, while the social desirability treatment significantly increased support for participants from both major parties. While income was a statistically significant demographic for both parties, its coefficient reveals it isn't substantially significant. Being conservative was only significant for independents, decreasing their support for local windmills. Further lack of significance on part of independents may be due to low sample size, as each treatment group had approximately thirty-one independents. Finally, education was statistically significant at the 10 percent level for Republicans: More educated Republicans were predicted to have lower approval for windmills.

Discussion

When participants are given various pro-windmill arguments, economic arguments in favor of windmills raised support for local windmills for all participants the most, regardless of political party. These results are strikingly clear: Those who wish to increase public support for windmills should highlight the personal and community economic benefits that windmills bring. Such rhetoric should not be changed due to the city's demographics, as both Republicans and Democrats are most impacted by economic arguments. Windmill proponents should work to improve and highlight the economic benefits of windmills, as this will best increase their popularity and growth in the U.S.

Social desirability, while not as successful as economic arguments, also increased support for local windmills for members of both major parties. Simply telling individuals that a majority of people in their community support a certain policy can increase their own support, buttressing past studies which contended that social pressure could be a major influence in impacting individual decision (Schultz et al. 2007). It's especially noteworthy that participants knew the information in their vignette was incorrect, yet it still had a significant impact on their support levels. True data on participants' community's support of a local policy may increase participants' support even more than this study showed.

This study found further results that explore the impact of framing and the differences between Republicans and Democrats. As shown in Table 1, Republicans' support of local windmills is predicted to decrease as their education increases. This relationship may be due to confirmation bias, in which individuals interpret information to fit their already held beliefs to avoid cognitive dissonance or mental discomfort from holding two conflicting ideas. Zaller (1992) and Tetlock (2005) found that better-educated individuals were more likely to use previous knowledge to prevent contrary considerations from entering into their minds when considering

an issue. As Republicans are known for their opposition to alternative energy, especially at the cost of the economy, it stands to reason that educated Republicans, well aware of the debate surrounding renewable energy and windmills, will dismiss contrary ideas, including the economic benefit of windmills. It is reasonable to assume that well-educated Democrats would respond similarly to common Republican policies, even when middle ground is found. This reveals that even the use of middle ground may not overcome cognitive dissonance experienced by well-educated partisans.

Republicans' and Democrats' support for windmills under certain conditions reveals that support for environmentally friendly policies are not as sharply partisan as we once thought. Polling results indicate this is true—while Republicans and Democrats disagree over the extent to which the government should prioritize the environment, a majority of members of each party support increasing solar panel and wind turbine farms (Pew Research Center 2018B). The primary disagreement between Republicans and Democrats, it appears, is prioritizing the environment or the economy, and even then Democrats are much more likely to support environmental measures that help them economically. If environmental issues can be framed as helping both the environment and the economy, Republicans and Democrats could find themselves on the same side of the argument.

There are specific caveats to this study. While MTurk participants tend to be younger, it is older individuals who are more likely to participate in local politics. Thus, those who are overrepresented as voters in local government are underrepresented in this study. Another limitation is that those confronted with the construction of local windmills are unlikely to hear only positive arguments. Unfortunately, not all arguments could be addressed in this survey. In addition, confirmation bias may influence which arguments individuals hear and agree with, thus it would be difficult to model all the arguments constituents give weight to.

Future studies would do well to focus on an interaction between positive and negative arguments about windmills or similar topics to see how participants weigh these different framings. Such a study, particularly one focused on how partisan differences influence the weight participants give to these various arguments, would greatly contribute to our understanding of issue framing and partisan influence. This same design could also be applied to more polarized topics to see which framing most increases bipartisan support. Finally, future studies could explore the impact political sophistication has on political identity. For instance, analyzing whether greater environmental knowledge impacts partisans' support of certain environmental policies.

Despite its limitations, this project contributes to the current literature on public opinion and issue framing. The change in support variable on the treatment and partisanship shows that individual opinions can be changed, at least in the short term, on issues such as local windmills. The framings legislators and scholars use can impact community support and may be influential in enacting public policy. Finally, issues which may be seen as polarizing may be reconstructed to be viewed as crosscutting

issues, which can increase bipartisan support. Though some may argue that public opinion is inconsistent, this study shows that rhetoric to influence public opinion is much more than just hot air.

APPENDIX

Control	Your city council has recently announced their plan to build three industrial-sized windmills within five miles of your home.
Environmental Treatment	Your city council has recently announced their plan to build three industrial-sized windmills within five miles of your home. The city council and local newspaper have shared several high-quality peer-reviewed scientific studies in top journals which have recently found that windmills protect the environment by decreasing your town's reliance on fossil fuels and reducing your carbon footprint.
Economic Treatment	Your city council has recently announced their plan to build three industrial-sized windmills within five miles of your home. The city council and local newspaper have shared several high-quality peer-reviewed scientific studies in top journals which have recently found that windmills will decrease costs on your monthly energy bill and bring jobs and economic growth to your town.
Open Process Treatment	Your city council has recently announced their proposed plan to build three industrial-sized windmills within five miles of your home. The city council has clearly stated that they desire community input on specific details about the proposed plan, including the windmills' location, measures taken to protect wildlife and the environment, and economic concerns. Their goal is to make this as fair and open a process as possible to cater to the community's wishes.
Social Desirability Treatment	Your city council has recently announced their plan to build three industrial-sized windmills within five miles of your home. The city council has hired a professional survey firm to conduct a poll of the town's support for the plan. They found that 73 percent of the town's citizens supported building local windmills.

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Exploring Predictors of Women's Political Representation in Sub-Saharan Africa

Brynne Townley

Introduction: Sub-Saharan Africa—the Fertile Land of Female MPs

In October, Ethiopia elected its first female president, Sahle-Work Zewde (Campbell 2018). Zewde is currently the only female head of state in Africa; however, women are making gains in ministerial positions across Africa. In fact, women have become increasingly visible in African politics over the past few decades. Rwanda has the highest percentage of women in its national parliament, and Mozambique, Namibia, South Africa, and Uganda are other sub-Saharan African countries that are in the top twenty-five countries with the highest levels of female representation (Bauer and Britton 2006, 2). Despite Western claims of gender equality and women's empowerment, sub-Saharan Africa is beating many industrialized global superpowers, including the U.S., when it comes to women's political representation.

Women's political representation in sub-Saharan Africa presents an interesting area of study for multiple reasons. First, there is vast literature on how women's descriptive representation affects women's status and rights in a country. Thus, there are a variety of political, social, and economic implications for women in sub-Saharan Africa. Second, intense patriarchal norms, low levels of women's education and empowerment, and other factors appear to contradict the high levels of women's political representation. Traditionally, the Western world has viewed Africa as backward due to rigid gender divisions and subordination of women, yet these perceptions have not hindered women's political representation in the legislature. Third, despite the high levels of women's political representation in many sub-Saharan African countries, some countries are still behind. For example, Botswana, Central African Republic, and the Democratic Republic of the Congo all have approximately 9 percent of the seats in their parliaments held by women, and Zambia has 18 percent of the seats held by women (IPU 2017). These

reasons form the beginnings of an intriguing puzzle: Why do sub-Saharan African (SSA) countries have such high levels of women's political representation in their national legislatures? And what accounts for the variation among SSA countries?

I argue that party quotas and conflict are the best predictors of women's political representation, and the diffusion of international norms of women's rights is a weaker predictor. Party quotas are important, since they are a concrete measure to ensure female representation. They are also voluntary, so parties that choose to institute them are also probably doing other things to encourage women's participation in politics. Internal conflict, often in the form of civil wars, break down social hierarchies and create opportunities for women's groups to advocate for their goals.

International norms of women's empowerment and rights are not as strong predictors of women's representation for multiple reasons. There are fewer formal avenues for these norms to travel down to national governments. Membership in regional bodies, like the Southern African Development Community (SADC) and the Economic Community of Western African States (ECOWAS), can recommend that national governments implement measures that will increase women's representation; however, they are less effective at achieving concrete policies that do so. The influence of international bodies like the UN, in the form of worldwide conferences (i.e., the World Conferences on Women), also affect women's representation in national legislatures, although they are not very effective in creating concrete policies that increase women's participation.

There are important recent historical factors that are necessary in order to explain this puzzle. The 1980s and 1990s saw a surge in women's movements and mobilization across sub-Saharan Africa, as well as shifting international norms advocating for more progressive gender policies (Tripp et al. 2009, 2–5). Regime change and democratization occurred as a result of internal conflict for many African countries during this time and created gaps into which women's groups asserted their priorities. A transnational movement advocating for increased women's rights also began to emerge on the international level.

I selected sub-Saharan Africa as the scope of my paper for various reasons. It is an understudied and often overlooked part of the world, although its unique history and current status make it necessary to study as an entity rather than grouping it together with other regions. According to Freedom House, many sub-Saharan African countries are not free or are only partly free. This fragility at the state level has the potential to affect current theories about women's representation in other more stable countries. Sub-Saharan Africa also has implications for women's representation in other parts of the world, because many SSA countries employ some form of gender quota. This offers a unique case study of the effectiveness of quotas. In addition, although Africa has experienced multiple feminist movements (both national and transnational), these movements have differed from Western feminist movements in goals, organization, and results, thus, the area requires separate theories. Figure 1 demonstrates the variation in women's political representation across SSA countries, which also make it an intriguing area of study.

This paper will begin by addressing current theories in the literature that are considered important predictors of women's representation. I will then explain my theory which unites many predictors that are often found in case studies in the literature. I will then describe the methodology I used to test my theory and examine the various results. I will explain additional insights that can be gleaned from my theory and study. I will then conclude by synthesizing my theory and results and by addressing possible research extensions and implications.

Important Predictors of Women's Representation

Scholars have been examining important predictors of women's parliamentary representation; however, they have primarily focused on industrialized countries. Women's participation in the workforce, proportional electoral systems, women's college graduation rates, and culture are predictors that researchers have found are statistically significant in these countries (Yoon 2004, 448). Fewer scholars have looked at representation in sub-Saharan Africa, yet the differences between sub-Saharan African countries and other industrialized nations invalidate an assumption that these predictors would be the same. Sub-Saharan African countries have higher rates of poverty, lower rates of gender equality, and a history of imperialism and colonialism that set them apart from other industrialized nations. Thus, research on the specific region of sub-Saharan Africa requires alternate theories.

Researchers have discovered that quotas are an important predictor of women's representation in SSA. Yoon (2004) measured the effect of both minor quotas (less than 15 percent of seats reserved for women) and substantial quotas (more than 15 percent of seats reserved for women) on representation, and both variables were statistically significant (457). She pointed out that many scholars claim quotas are "the surest way to improve female representation" (450). In the introduction to her seminal work *Women, Quotas, and Politics*, Drude Dahlerup distinguishes the "fast track" and the "incremental track" concerning equal representation of men and women (Dahlerup 2006, 6). She claimed that electoral gender quotas are part of this fast track movement that seeks equality as a result (Dahlerup 2006, 9). Tripp, Konate, and Lowe-Morna claimed that quotas in Uganda gave "women the exposure, political experience, and confidence to run on their own in open electoral races" (129). Increasing numbers of women have run in each consecutive election since the introduction of quotas (129). Bauer and Britton (2006) also argued that quotas are a major predictor of women's high levels of representation in SSA. Quotas are thus an important predictor of women's political representation.

Electoral systems are another variable of interest that has been found to facilitate higher levels of women's representation. Yoon (2004) divides electoral systems into three groups: majority-plurality, proportional representation (PR), and mixed systems, and she found that proportional representation was a statistically significant predictor (457). PR systems may lead to increases in women's representation due to women being allowed to enter as second rank on party lists and gain a seat if the party wins enough seats rather than just campaigning to win a single candidacy (Lindberg 2004, 34).

Lindberg's (2004) research found evidence that the electoral systems which were more proportional had higher levels of female representation in parliament (35). Hughes (2009) identified proportional representation systems as an important predictor affecting demand of women in parliaments (176). Additionally, Tripp, Konate, and Lowe-Morna asserted that PR systems facilitate high levels of women in representation (130).

Recent research has identified internal conflict as another important predictor of women's representation. Hughes and Tripp (2015) found that the ending of armed conflict led to a four to five percentage point boost in women in parliaments (1,531). They also discovered that quotas have greater impact in post-conflict societies (1,531). Hughes (2009) argued that conflict breaks down social barriers and creates new opportunities and spaces for women in the political arena (175). Conflict also creates flows of international aid into countries that could encourage them to adopt policies in line with women's rights (179). The end of a conflict can often lead to constitution building, and women's groups will lobby for provisions of women's rights and women's representations to be included (Tripp et al. 2009, 119). Eight of the twelve African countries with the highest rates of female representation have recently emerged out of civil war or internal conflict (119).

The work done by women's organizations has also contributed to historic high levels of women in parliaments. Tripp et al. (2009) claimed that "autonomous women's movements are one of the most important determinants of the new gender-based policies adopted after 1990 in much of Africa" (xiv). They outline three mechanisms that are important in understanding this claim: 1) international influences and the diffusion of human rights norms, 2) changes in resource bases allowing women to have greater access to the necessary resources, and 3) democratization facilitating the opening up of spaces for women's groups to advocate (62). Women's groups have been instrumental in the introduction of quotas and other policies that have helped women gain ground in national legislatures. For example, women's groups in Rwanda stepped up to fill the vacuum after the brutal genocide and helped with the reconstruction and reconciliation process (Hughes 2009, 191). When asked about the success of the women's organizations, one Rwandan woman said, "We got almost everything we asked for, including the 30 percent quota for women" (Hughes 2009, 191). Thus, the work done by women's organizations both facilitates, complements, and enhances the previously mentioned predictors, such as quotas and the ending of conflict.

International norms have also influenced women's representation, although this predictor has been less emphasized in the literature. Tripp, Konate, and Lowe-Morna (2009) emphasized the pivotal role of "international influences and the diffusion of ideas and tactics across Africa with respect to women's rights" on women's political representation (62). They also highlighted transnational diffusion influences, including UN Conferences on Women and initiatives on the regional level (113). Additionally, they claimed that transnational women's movements influenced the trajectory and goals of smaller regional organizations, as well as national women's organizations that began

to frame women's struggles in a global context of gender equality (63). Hughes (2009) examined the effect of international linkages on women's representation in developing countries, but she did not limit her analysis to SSA. Case studies have also found that women's organizations were inspired and helped by international movements led by the UN (Bauer and Britton 2006; Hughes 2009).

The influence of some factors on women's representation is contested among scholars. Yoon (2001) measured the effect of democratization and found that it lowered women's political representation, although this effect was not statistically significant (177). Lindberg (2004) found that women's legislative representation actually increased with each election cycle after the initial election (45). Hughes and Tripp (2015) recognized the contradictory findings on the role democratization; however, they think the research on its role in Africa (rather than Latin America or Eastern Europe) is too sparse for meaningful conclusions (1,516). Instead, they argued that democratization is a potentially important mechanism that links the ending of a conflict with increases in women's representation (1,515). Additional contested predictors include women's access to education, women's participation in the formal workforce, and cultural factors.

A Convergence of Multiple Factors: Supply and Demand

My theory unites some of the existing predictors of women's representation while also recognizing that some predictors do not have as strong an effect as the literature suggests. The literature argued that the implementation of quotas is a strong predictor, which I also argue. However, I specify that voluntary party quotas are more effective than other forms of quotas. The implementation of voluntary party quotas (which indicate that a nation has high commitment to encouraging women's active political participation) and a history of internal conflict (which breaks down social barriers and creates space and opportunities for local and national women's groups to advocate for their causes) are the core of my theory of why some SSA countries have higher levels of women's political representation in their national legislatures than other countries. I also argue that indicators, such as norm diffusion of transnational women's rights norms, are not as important as have been previously argued, since they merely encourage countries to do better concerning women's rights and lack a strong mechanism.

Despite the multiple theories explaining women's representation that have been addressed so far, an important gap in the literature emerges connecting the various predictors. My theory rests on the concept of supply and demand in women's representation. Supply refers to women having the motivation, training, and resources to run for office, and demand refers to peoples' willingness to support female candidates (Karpowitz, Monson, and Preece 2017, 928–29). I argue that conflict helps increase the supply of women by breaking down barriers about women's political participation, and quotas, especially voluntary party quotas, are integral in the demand side since the political parties are actively supporting women's participation. I also look at international norms as a predictor, which is a less explored variable in the existing literature.

Conflict and Quotas: Supply and Demand

A country's recent experience with conflict is a predictor of women's political representation, because conflict breaks down social, economic, and political barriers. Hughes and Tripp (2015) examined the influence of the ending of civil wars on women's political representation, considering they facilitate changes in political institutions (1,515). These changes then create gaps for women's organizations to emerge and advocate for their goals. Since the system is going through a process of change, it is then easier for women's groups to benefit from these shifting political and constitutional institutions. Not only does the ending of conflict facilitate change, it does so rapidly. Social norms that are traditionally in place often break down as order and chaos ensue and conflict erupts. Some of the social norms that break down are gender divisions, since women are often just as involved in the conflict as men. They may fight side by side, and they become targets of violence just as men do, as evidenced by the Rwandan Civil War (Hughes 2009, 190). The breakdown of social norms creates a greater supply of women to be involved in politics; therefore, more women feel motivated and prepared to become involved. This is largely because there are less social and political barriers that could hinder them. Quotas are an important predictor of the demand for women in government. When political parties or governments implement quotas, they are actively seeking for more women to be involved. This is important in that without demand for more women in government, there would be no need for the supply of women to increase. The supply and demand must work together. There are two main types of quotas: legislated quotas and voluntary party quotas (Dahlerup 2006, 21). Legislated quotas are mandated by the constitution or the electoral rules of a government, and party quotas are voluntary measures that individual political parties can choose to implement (Dahlerup 2006, 21). One major concern with quotas is that it will facilitate the election of unqualified women who then become tokens of the system (Tripp et al. 2006, 124). This fear has been proven to be unfounded in PR electoral systems (Ibid.). In addition, quotas have led to an influx of women in politics, and this visibility has helped shape "popular perceptions of the acceptability of women being active in politics" (Tripp et al. 2006, 129).

The Diffusion of Quotas and Regional Membership

The 1985 UN World Conference on Women in Nairobi, Kenya, was the start of a movement that would infiltrate many African countries and catalyze the emergence of numerous autonomous national and regional women's movements and organizations. More than half of the 13,504 registered participants came from the global South, particularly Africa (Tripp et al. 2009, 63). Fatma Alloo, the leader of the Tanzania Media Women's Association (TAMWA), said the following when reacting to the conference:

The conference emphasized the importance of women's mobilization in addressing the source of women's subjugation to patriarchal norms and in working toward transformation on this front. TAMWA came into existence through our own histories

of pain, and the realization that unless we got together and did something, nothing would change in a patriarchal system. (Tripp et al. 2009, 63)

The diffusion of gender equality norms that encourage women's participation in political, social, and economic spheres influenced the high levels of women in national parliaments in two key ways. First, it gave African women the tools they needed to start their own movements and organizations at the national level by educating them about policies that would encourage gender equality and inspiring them to work toward implementation. In her quote, Fatma Alloo mentioned mobilization, and the diffusion of these norms certainly facilitated mass mobilization on the national and local levels. Second, this norm diffusion occurred through the work of regional bodies that established policy goals for their member countries.

Norms of gender equality and women's empowerment were outlined in documents like CEDAW and reiterated at subsequent World Conferences on Women. In 1995, the conference in Beijing proposed a Platform for Action that addressed women in power and decision-making roles. An excerpt of the platform states:

Women in politics and decision-making positions in governments and legislative bodies contribute to redefining political priorities, placing new items on the political agenda that reflect and address women's gender-specific concerns, values, and experiences, and providing new perspectives on mainstream political issues. (UN Women 1995)

Tripp (2009) claimed "the Beijing conference legitimized key elements of feminist discourse in African NGOs, parties, states, international development agencies, and other fora" (64). This legitimization of feminist discourse from a powerful and influential international actor was tinder for the growing flame within national women's groups in Africa to push for equality in political representation. It also coincided with many African nations emerging out of conflict, which opened up space for these women's groups to advocate for their goals. In fact, most of the gender quotas were introduced in African countries after the 1995 Beijing conference (Tripp, Konate, and Lowe-Morna 2006, 112). Gender quotas were a result of international influences and serve as an important intermediary variable in my argument. They also affected the high percentages of women in national parliaments.

Regional bodies in Africa facilitated the diffusion of norms of gender equality and women's empowerment in the form of quotas. In my analysis, I examine the effect of membership in the Southern African Development Community (SADC) and the Economic Community of West African States (ECOWAS), in view of these organizations being mentioned most frequently in the literature. Regional organizations, like the SADC, helped facilitate the diffusion of international norms by setting specific and concrete goals and timelines for women's empowerment for each of its member states and putting pressure on governments to include the voices of women's organizations in the decision-making processes. This is one major way regional organizations

often articulated goals in line with the goals of transnational feminist movements that were emphasized at world conferences held by the UN. In 1997, representatives from member states' governments and NGOs attended a workshop planned by the SADC to address the creation of a gendered policy framework (Tripp et al. 2009, 113). This document became known as the "Declaration on Gender and Development" and was approved by all SADC heads of government. One of the provisions in the document called for women's representation in national legislatures to be 30 percent by 2005. As a result of this document, the SADC established a Gender Unit to oversee the efforts at implementing these goals. Although not all the SADC member states reached the goal of 30 percent women in the national legislatures, a new goal of women making up 50 percent of the national legislatures was proposed and accepted (Geisler 2004, 214). The SADC also established the SADC Regional Women's Parliamentary Caucus in 2002 to help bring together female members of parliament across party lines to address areas of common interest (Tripp et al. 2009, 159). These concrete policy goals and plans for implementation represent the diffusion of international norms.

The influence of regional bodies in promoting women's empowerment and facilitating norm diffusion from multilateral, international bodies, such as the UN, legitimizes and increases the pressure being put on national governments by local or national women's organizations. This pressure increases the likelihood that national governments will see the advocacy work being done by women's organizations as legitimate and worthy of consideration. It has also removed the stigma that advancing women's rights is a Western cause that will be detrimental to African society (Tripp et al. 2009, 165). However, these bodies also have limited influence in ensuring that governments will implement certain policies. If the governments do not decide to adopt these measures, then the goals of the regional organizations are little more than an empty vision. Because of this, I believe norm diffusion of international women's rights norms through regional bodies will be less of a predictor than quotas and conflict.

Methodology

I chose to run a series of ordinary least square (OLS) regressions to test my hypotheses and measure the effect of multiple independent variables and predictors on women's representation. I selected this type of statistical analysis, considering it enables me to understand broad effects of predictors on women's representation across all SSA countries rather than country-specific effects, which are usually explored in case studies. Currently, much of the literature includes case studies, which makes it difficult to generalize across countries. In addition, the OLS regression method allows me to control for variables that have been important in the literature.

Dependent Variable

My dependent variable is the percentage of women in national legislatures in SSA countries. I retrieved my data from the World Bank Data Indicators and the Inter-Parliamentary Union (IPU).

Independent Variables

I have operationalized norm diffusion of the transnational women's movement by using two measures. First, I examined norm diffusion through the influence of regional membership on women's representation. I used a simple binary variable to indicate membership in the various regional organizations and to test this relationship. The two organizations I chose to focus on are the Southern African Development Community (SADC) and the Economic Community of West African States (ECOWAS), since these organizations are widely mentioned in the literature. To operationalize the norm diffusion of transnational women's rights movements spurred by the UN, I am examining the accession and ratification of the Convention on the Elimination of Discrimination against Women (CEDAW), the CEDAW protocol, and the Maputo protocol. The UN General Assembly adopted the text of the CEDAW in 1979, and this document would become the preeminent international document outlining the goals, standards, and policies in line with women's rights. Along with the provisions included in CEDAW, the UN held various conferences discussing women's rights and women's political, legal, social, and economic empowerment, and some scholars theorized that these conferences helped encourage countries to implement measures to further women's rights, especially their opportunities in the political sphere. I chose these variables because they indicate the openness of a country to the transnational women's movements that advocated for empowerment. The CEDAW protocol followed the passage of the original CEDAW document and expands on women's rights that should be protected in a country's laws. The Maputo Protocol is a document specific to Africa that outlines specific measures governments can take to increase the status of women. I theorized that countries which have ratified CEDAW and the subsequent protocols would have adopted measures (either policies or programs) that would facilitate rising levels of women's representation. I also theorized that countries that are members of regional bodies would experience pressure from these organizations to pass measures to improve women's political representation.

I include a binary quota variable to indicate the presence of quotas in a country. I theorized that the presence of quotas will be a strong predictor of women's political representation. Quotas are a concrete policy option that have been proven in the literature to facilitate women's representation. In addition, I break down the quota variable into types of quotas to run in some of the models. The two types I look at are voluntary party quotas and legislated quotas (such as reserved seats). I theorized that voluntary party quotas will be more effective than legislated quotas, since political parties that choose to implement them will also be implementing other programs or initiatives to increase women's representation. Legislated quotas are often top-down approaches that lack other substantial measures to address the barriers to women's representation.

I also tested the effect of a history of internal conflict on women's representation. This is also a binary variable that is coded based on a country's recent experience with conflict. I coded countries as experiencing conflict if the episodes were violent

and occurred after 1975. Since women's representation in SSA countries began to increase in the 1990s, conflict before 1975 would not directly have affected the change in women's political representation. I theorized that countries which have experienced recent conflict will have higher levels of women in their national legislatures, since conflict breaks down traditional gender norms and makes room for women's groups to organize and demand rights. Conflict often leads to regime changes, which is another opportunity for women's groups and organizations to demand more rights.

Other Variables

I included a variety of other control variables based on the theories presented in the literature, including electoral system, and regime type. I expected that proportional representation will be statistically significant, since the literature claims that women have an easier time being elected in PR systems. I also include regime type, due to SSA countries having a lot of variation in regimes. Much of the literature up until this point has not controlled for regime type, which makes it difficult to confirm their evidence. Regime type could play an important role in women's representation, for the reason that more free societies often have more open societies that allow women's groups to form and advocate. On the other hand, authoritarian regimes sometimes encourage women's rights, because it creates a façade of extending personal freedoms to its citizens. I also included a control variable of GDP per capita to make sure I accounted for potential economic variables.

Discussion of Models

Model 1

The first model demonstrates the results of the basic quota variable, the conflict variable, and the regional organizations membership variables along with all the controls. Quotas and a PR electoral system are statistically significant at the 99 percent confidence level. A history of conflict is statistically significant at the 95 percent level. Membership in ECOWAS and a mixed system are both statistically significant at the 90 percent level. It is interesting to note that membership in ECOWAS has a negative coefficient, indicating that membership in the organization has a negative impact on women's representation. Thus, if a country is a member of ECOWAS, it has a lower probability of having women in its national legislature. This model's R squared was 0.511, meaning that this model explains about 50 percent of the variation in women's political representation in SSA.

Model 2

The second model demonstrates the results of all the CEDAW variables, quotas, and conflict on women's representation. In this model, quotas, conflict, and a PR system are all statistically significant at various levels. None of the CEDAW variables are statistically significant; however, the coefficient for the ratification of CEDAW is negative, meaning that if it were significant, CEDAW ratification would lead to lower levels of women's representation.

Model 3

This model shows the results of the different types of quotas on women's representation. The other control variables with the conflict variable are also included in this model. PR systems, mixed systems, and conflict are all statistically significant. In addition, party quotas are significant while legislated quotas are not.

VARIABLES	(1) % Women in parliament	(2) % Women in parliament	(3) % Women in parliament
CEDAW		-1.367 (7.363)	
CEDAW Protocol		2.232 (4.305)	
Maputo Protocol		1.348 (3.602)	
Quota	7.447** (3.559)	7.562* (3.890)	
PR system	11.56*** (3.821)	9.056** (4.341)	10.73*** (3.938)
Mixed System	7.796* (4.245)	7.478 (4.674)	8.504* (4.810)
Partly Free	0.411 (4.638)	-1.207 (4.967)	-1.883 (4.838)
Not Free	-2.197 (5.553)	1.616 (5.240)	1.315 (5.014)
History of Conflict	7.471** (3.673)	8.443** (3.918)	8.316** (3.896)
Logged GDP	0.426 (1.800)	0.539 (2.177)	0.929 (1.918)
SADC Member	2.011 (4.764)		
ECOWAS member	-9.704* (5.467)		
Voluntary Party Quota			6.573* (3.799)
Legislated Quota			4.811 (3.777)
Constant	8.932 (15.68)	3.447 (20.23)	1.886 (16.22)
Observations	44	44	44
R-squared	0.511	0.456	0.445

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Discussion of Variables

Norm Diffusion from International Bodies

None of the CEDAW variables had statistically significant effects on women's representation, although the coefficients for ratification of the CEDAW Optional Protocol and Maputo Protocol were positive, indicating that they may have a slight influence in increasing women's representation. This leads to two important findings. First, CEDAW ratification may not be the best measure of norm diffusion from international bodies. It also seems that international bodies, such as the UN, can only do so much. They have the power to influence and encourage countries to change, but they cannot infringe on a country's sovereignty by forcing the implementation of certain policies. This finding illustrates that country-specific policies that meet the needs of the women in each country may be more effective at increasing women's representation than broad international recommendations.

Membership in Regional Organizations

Membership in the SADC was statistically significant at the 90 percent level until the controls were added. SADC membership has a positive coefficient indicating that membership in this organization does positively affect women's representation despite the lack of significance. Membership in the ECOWAS is statistically significant. However, the relationship is negative, indicating that membership in the organization decreases women's representation in national legislatures. This opposing evidence is interesting, since membership in regional bodies appears to affect women's representation in different ways depending on the goals and priorities of the regional bodies. As my theory states, membership in regional bodies can facilitate norm diffusion of women's rights and help legitimize the policy goals of local or national women's organizations. The evidence demonstrates that regional bodies may act in different ways that can either have a positive effect on women's representation, such as in the case of the SADC, or a negative impact on women's representation.

As was previously mentioned, the SADC set targets of at least 30 percent of women in the national parliaments by 2005 and then a goal of equal representation of men and women by 2015 for its member states. Rather than setting concrete goals for women's representation, ECOWAS has created networks and implemented capacity-building programs to facilitate women's empowerment (ECOWAS). These differences appear insignificant; however, they may have affected the motivation of the member state governments in striving toward higher levels of women's representation.

Quotas

The implementation of quotas is statistically significant in all of the models, which corroborates the previous research that quotas increase women's representation. One interesting finding is the varied effects that different quota types have on women's representation. I analyzed the effect of voluntary party implemented quotas and legislated candidate or reserved seat quotas. When additional variables and controls were

added, party quotas were statistically significant at the 90 percent level, but legislated quotas lost their statistical significance. This finding has important implications for women's representation, and it demonstrates that some quotas are more effective than others. Voluntary party quotas may be more effective than legislated quotas, because parties that choose to implement them might also choose to initiate other policies or programs that train women to run for office or provide them with tools to be effective candidates. Legislated quotas may not have the same effect as party quotas, since they are not accompanied with other policies that encourage women to become politically involved. Much of the literature has looked at quotas as a whole rather than analyzing the effect of specific quotas, but these findings indicate that future research should consider the different types of quotas and their effects.

Post-Conflict

I included a binary variable for countries that had recently emerged out of civil war or internal conflict. As the literature predicted, this variable is statistically significant across all the models. Countries that have experienced civil war or internal conflict present an interesting dilemma since facilitating conflict is not a viable means of achieving high levels of women's representation. Instead, other changes must be enacted that can mimic the breakdown of rigid social barriers and give women access to greater political opportunities. Perhaps, this comes in the form of social movements. The #MeToo movement is an example of a current social movement that is sweeping across the globe and breaking down social barriers in relation to violence against women. These types of movements are nonviolent ways that social hierarchies can be deconstructed and changed.

Electoral Systems

I also included variables for proportional representation systems and mixed electoral systems. PR systems are statistically significant in all the models, which supports previous research findings. This finding has important implications for nations seeking to increase women's representation. Often, cultural barriers are presented as explanations for women's low representation in the political sphere; however, structural barriers, such as the electoral system, may be more instrumental in explaining barriers to women's representation. Mixed systems were also statistically significant in some of the models, which indicates that future research is needed to understand the effect of these systems on women's representation.

Evaluation of Hypotheses, Recognition of Limitations, and Omitted Variable Bias

Although the norm diffusion variables were not statistically significant, the importance of international and regional organizations in the diffusion process of human rights norms should not be overlooked. Many SADC countries have high levels of women's representation, and quotas (which are a significant predictor of women's representation) that were implemented after the Beijing World Conference on Women in 1995—highlighting these norms' importance. In addition, I found other important variables to be statistically significant, including PR electoral systems.

Like I predicted, quotas and conflicts were both statistically significant. I believe these predictors work in tandem to increase women's representation. Quotas are concrete policy goals that increase the demand for women in politics. Conflict breaks down social hierarchies that might have initially served as barriers to women's involvement in politics, thus increasing the supply of women. When there are less barriers that women face, there will be a natural increase in the number of women in politics. These two predictors are contingent upon each other to be effective predictors of women's political representation.

Further research could include different ways of operationalizing the diffusion of international norms by multilateral and regional organizations. Although the ratification of documents like CEDAW and the Maputo Protocol are helpful measures of international norm diffusion, perhaps there are more robust measures of this theory. In addition, the models could suffer from omitted variable bias. There are some variables that were left out of the model, which may be important predictors of women's political representation. My model did not have a variable that measured local or national women's organizations. These organizations certainly play a role in advocating for changes in government policy, and they would need to be included in the model to lessen the impact of omitted variable bias. I did not include a measure of women's organizations, because operationalizing this predictor is difficult and data is often hard to find. Future research should examine the role this variable plays in influencing women's political representation.

Conclusion

My theory argued that both quotas (especially party quotas) and a history of conflict are important predictors of women's political representation in SSA, as they increase both the supply and demand of women in politics. My theory initially claimed that norm diffusion of international women's rights norms and membership in regional bodies would also be predictors; however, these variables were much weaker predictors of women's political representation. Party quotas increase the demand for women in politics, since they serve as a concrete policy measure to increase women's representation. They are also symbolic of a political party's willingness to engage in other programs to train women for politics. Conflict is a variable that increases the supply of women, due to the breaking down of rigid hierarchies and creating opportunities for women to involve themselves in politics. I also found that membership in regional organizations and the diffusion of international organizations do not have a statistically significant effect on women's representation in national legislatures in SSA. In fact, membership in some regional bodies (e.g., ECOWAS) surprisingly present a negative effect on women's representation. Additionally, I found that a PR system is an important structural factor that increases women's representation.

There are both political and social implications in my research. The evidence questions the UN's effectiveness in encouraging women's rights and providing resources and goals for member states to follow. My findings also questioned the effectiveness of legis-

lated quotas, which lost their statistical significance after other variables were added; however, it asserted the power of voluntary party quotas, which did not lose significance. Further research is needed to look into the mechanisms that explain this effect. My study only looked at countries in sub-Saharan Africa, but these findings can be generalized to other countries, since many of the predictors are structural (e.g., electoral systems and quotas).

Further research concerning additional factors on women's representation in national legislatures is required to understand why sub-Saharan African countries are surpassing industrialized countries in women's political representation, despite the high levels of state fragility and low levels of other gender equality indicators.

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How to Get the Attention of Government Officials: A Test of the Effectiveness of Social Proof Treatments

Aubriana Wolferts

Introduction to General Problem Area

Social proof treatments—informing people about the behavior of their peers—have generally been shown effective in influencing subjects to engage in desired behavior due to a psychological desire to conform (Cialdini et al. 1990; Schultz et al. 2008; Shearman 2007). Social proofs are more effective when they describe what peers typically do rather than what peers generally approve of and when the social proof is more salient and closely related to the desired behavior (Cialdini 2004; Cialdini 1990). Subjects consistently underestimate the power of social proof, crediting changes in their behavior to other, irrelevant factors (Nolan et al. 2008).

However, while studies have shown social proof treatments to be effective in influencing the behavior of the general population, research to date has not yet assessed the impact of social proofs on government officials. In practice, social proof might motivate officials to take up new policy practices that benefit the citizens they serve. This is the hypothesis that motivated the present research. However, it is possible that staff members in government agencies—that are social elites and, therefore, likely outliers compared to normal citizens—may behave differently than the studies on normal subjects indicate. Other research shows that elites are not as easily influenced as their non-elite counterparts. Elites have been found significantly less likely to accept counsel from even intelligent and highly qualified research assistants (See 2011; Tost 2012). This lack of affinity for heeding the advice of others may also indicate that government officials would be less likely to be influenced by the actions of others; therefore, government officials may prove resistant to social proof treatments.

This randomized controlled experiment done in Peru explores the effects of social proof on government officials' interest in learning more about using evidence

to predict what policies and development programs might be effective. The context involved invitations to nearly 3,000 government officials to host a briefing in which researchers provided credentials for and coaching on a new online library reporting rigorous evaluation information on development programs. The library compiles and graphically summarizes results from more than 400 randomized control trials in international development. Such evidence-based reports (EBRs) have so far remained difficult to access for policy-makers without doctorates, despite their usefulness in indicating, using concrete evidence, what policies might be most effective. Any take-up of the invitations, therefore, would also have the practical advantage of promoting government learning of best practices in development programming.

Our study found that social proof affects government officials differently than it has generally been shown to affect average members of society in previous studies. Contrary to our hypotheses and the majority of findings on social proofs, the social proof was not effective in encouraging the desired behavior and even had a negative effect in some instances. Social proof significantly decreased the overall likelihood of receiving a positive response from a government official to the invitation to hold a meeting. Similarly, the likelihood of holding a meeting also significantly decreased with the presence of the social proof treatment.

In what follows, we situate this study in the context of prior research on social proof, elite behavior, and propensity for policy learning. We then describe the research design and estimation procedures, discuss results, and draw conclusions about what the findings indicate about the value of social proof for government uptake of policy-relevant knowledge.

Theoretical Framework and Literature

Social proof treatments have been found successful in influencing behavior in many contexts (Schultz et al. 2007). For example, informing hotel guests that other guests overwhelmingly reused their towels significantly increased towel reuse (Schultz et al. 2008). Additionally, reporting average energy use to homeowners caused high-volume users to decrease usage. However, this same treatment caused energy savers to increase use to match their peers' energy use, unless they received social praise for their conservation. This indicates that social proofs can also influence behaviors in undesired directions if subjects are made aware that others are engaging in an undesirable behavior (Schultz et al. 2007). Therefore, care must be taken when designing a social proof treatment to encourage the normative behavior the researcher desires. In another study seeking to decrease the amount of petrified wood being stolen from national parks, researchers observed that the social proof treatment increased the amount of wood stolen. The social proof treatment stated that a high amount of wood is stolen from national parks, and then encouraged subjects not to steal wood. Because the social proof treatment indicated that others were stealing wood, subjects were more likely to engage in this undesirable behavior (Cialdini 2006).

In summary, previous research indicates a successful social proof must include two elements: 1) the social proof treatment should not normalize undesirable behavior, and 2) the social proof should be a descriptive norm that states what other people do, rather than an injunctive norm, which states what is commonly thought one should do (Cialdini 2006; White 2013). Normalizing bad behavior encourages increased participation in the undesirable behavior, producing results opposite of what was desired, such as in the case of the petrified wood study. The literature suggests people are not affected by normative claims of what one should do—only by what other people are actually doing. No literature has been found indicating that social proof treatments adhering to the standards described above are ineffective.

However, despite the large body of research done to test the general effectiveness of social proof treatments and how to make them more effective, little research has been done on if and how social proof treatments affect various demographics differently. In particular, no research has been done to determine the effectiveness of social proof treatments on government officials. Previous studies indicate that persons classified as elite react differently when receiving advice and making decisions (Galinsky et al. 2008). Elites have been shown to be less likely to listen to the advice of others and more likely to make decisions alone and on impulse (Fast et al. 2012; See et al. 2011). This could indicate that social proof treatments will be less effective on policy-makers than on the general population, as they are included in the class of elites in society. Determining the specific impact of social proof on elites, however, is important because of the disproportionately large influence these individuals have on society.

Hypotheses

Due to the vast body of literature that proclaims the effectiveness of social proof treatments, we anticipated the social proof treatment would incentivize government officials to have increased interest in learning about our web site for accessing and understanding EBRs, despite their elite status.

We hypothesize the social proof will greatly increase the likelihood of a positive response to cold e-mails and phone calls. People are frequently wary of e-mails or calls received from unknown persons; therefore, including the statement that other government officials have also invited a meeting with us will likely encourage government officials to be more trusting and likely to respond to our invitation. We also hypothesize the social proof treatment will make government officials more likely to hold a meeting with a research assistant for similar reasons.

Hypothesis 1: The social proof treatment will have a positive impact on the likelihood of responding positively to the invitation to hold a meeting to learn more about the web site.

Hypothesis 2: The social proof treatment will have a negative impact on the likelihood of responding negatively to the invitation to hold a meeting to learn more about the web site.

Hypothesis 3: The social proof treatment will have a positive impact on the likelihood of holding a meeting with a research assistant.

Hypothesis 4: The social proof treatment will have a positive impact on the average number of people who are trained in a meeting.

Research Design

Government officials are constantly faced with the need to make decisions of high consequence. Having proficient government officials is critical to effective policy-making. However, even the most intelligent government officials can be betrayed by their intuition; the impacts of development policies are often different than expected. Over the past fifteen years, researchers and academics have increasingly conducted randomized controlled trial experiments to address this problem. These experiments and the evidence-based reports (EBRs) that convey the results of these experiments provide causal evidence about which policies are effective and which are not.

Despite the increasing number of EBRs that have been done, government officials are not using these resources. Research shows that “public servants make use of academic resources only in exceptional circumstances” (Head 2015). Government officials’ resistance to using EBRs is likely two-fold: 1) EBRs are difficult to access by non-academics and are often hidden behind paywalls, and 2) government officials are not accustomed to using EBRs when making policy decisions and are hesitant to begin using them because of their academic jargon and lengthy nature.

To address the barriers that government officials face in using EBRs, we created a web site filled with easy-to-read graphics and summaries of over 400 EBRs, taken from premiere research centers on development policy, such as JPAL, CEGA, and DIME (see Appendix). We then used online resources to create a database of nearly 3,000 government officials in Peru with whom we could meet and present the web site.

However, incentivizing government officials to use the web site we created to inform their policy decisions can be a difficult task. Using our extensive database of government officials as subjects, we designed an experiment to discover what impact a social proof treatment (telling someone what others are doing) has on government officials’ willingness to learn about and use our web site resource to make more informed policy decisions. This study addresses the impact of social proof on the likelihood of a government official responding positively to the request to set a meeting and actually holding a meeting to learn more about the web site.

We randomly assigned each government official from our database to either the social proof treatment or to the control treatment. College students from both Brigham Young University in the U.S. and from local universities in Lima, Peru, were hired as research assistants and trained to visit the government officials from our database. Government officials were randomly assigned to be contacted by one of the students. The research assistants from the U.S. traveled to the countries of interest during the summer of 2017 (roughly between June and August) and spent five weeks in Peru attempting

to meet with their assigned government officials. E-mails inviting government officials to schedule a meeting were sent out to the government officials from our database who were assigned to the control group one week before students went to Peru. Just before students departed, e-mails were sent to those who were assigned to the treatment group. The reason for the time difference between the e-mails sent to the control and treatment groups was that the social proof involved telling government officials that others from their ministry had set up a meeting with us. To maintain our integrity, it was necessary to target the control group first and receive responses so we could truthfully tell those assigned to the treatment group that other government officials in their ministry had set up a meeting with us (or that other government officials in their country’s government had expressed interest, if no one in their specific ministry had expressly set up a meeting).

The social proof was given either through e-mail or over the phone by including this paragraph in the invitation to set a meeting:

A number of your colleagues in [YOUR MINISTRY] have already expressed interest and have invited a meeting with us. In a recent survey of 6,750 policy-makers in 126 countries, information about successful public policy programs in other countries was ranked second in importance on a list of fourteen policy inputs.

Up to three rounds of e-mails were sent (e-mails were no longer sent once a response, positive or negative, had been received) soliciting a meeting. Government officials were contacted by phone in the case that an e-mail was found to be invalid or no response was received. Research assistants carefully tracked the number of times the government officials that they were assigned to were e-mailed and called and if and when the government official responded.

Specific training procedures for the research assistants were put into place. Research assistants were instructed to follow a specific script to follow for both e-mails and phone calls to minimize the impact of various factors about research assistants apart from their gender and nationality. These effects were also being tested as another part of this experiment (the factorial design of the experiment prevents these other experiments from interfering with the social proof experiment). Furthermore, a detailed in-person meeting protocol was developed that described in detail what research assistants were to say in meetings. Research assistants received approximately ten hours of training on how to conduct e-mails, phone calls, and in-person meetings. There were abnormalities in a few meetings, such as a meeting where the intended person of contact was not present or where the government official had significantly less time for the meeting than expected, but generally meetings adhered to the protocol. Any abnormalities in meetings were recorded by the research assistants. Furthermore, research assistants were trained on how to accurately report the data and carefully tracked all outcomes of interest. The responses have since been double-blind coded by other research assistants to ensure that they were coded correctly. The criteria for the coding given to the research assistants was as follows:

Positive e-mails clearly affirm some kind of interest in continuing the conversation. The continuance of the conversation could be by referral to someone else or by the sender showing interest. The interest could be minimal, simply consisting of "tell me more," "I don't quite understand," or "is this service really free?" As long as the government official clearly indicated a desire to continue the conversation, the response was coded as positive.

Negative e-mails clearly communicate a disinterest in continuing the conversation.

A Neutral coding means the response was vague, noncommittal, off-topic, or baffling. Examples might be, "Let's talk, Sandra" when the name of the RA was not Sandra. Another common neutral response is, "I am in receipt of your email."

Responses must clearly be created by a human and not be a machine generated response.

Inter-coder reliability for the coding of e-mail responses was 95 percent. Obviously, this same verification of the response could not be completed for phone correspondence; however, research assistants were trained on how to code responses prior to the experiment, and the vast majority of correspondence was done via e-mail, so we are not concerned that the phone call data will skew the results.

Appointment held was coded simply as whether or not the research assistant met with the government official and shared the necessary information for the government official to access the web site. Most meetings lasted around thirty minutes, though in some instances meetings were shorter.

Methods

We measure the effect of the social proof treatment on four outcomes: 1) receiving a positive response to our invitation to hold a meeting, 2) receiving a negative response to our invitation, 3) holding an appointment with a government official, and 4) the number of people trained in the meetings that are held. The outcome measures are estimated and compared based on whether or not the government official received the social proof treatment. Every effort was made in our experiment to ensure that the social proof treatment used in our experiment was valid and adhered to the two characteristics of good social proof treatments specified above: 1) does not normalize undesirable behavior, and 2) states what other people do rather than what people should do.

In order to create the most effective social proof possible to accurately test the effectiveness of social proof treatments on government officials, we carefully selected the language of the social proof to highlight the desirable behavior of other government officials. Government officials were told that information about successful public policy programs was important to other government officials and that other government officials in their ministry were interested in setting a meeting with us, giving a descriptive norm of what other government officials actually do rather than simply describing what one should do.

We attempted to make the social proof as impactful as possible by stating, whenever true, that other policy-makers from one's own ministry had agreed to set up a meeting with us. Studies have shown that the closeness of the social proof comparison to the subject impacts the effect of the social proof treatment. Persons closer to the subject are more likely to impact the subject's behavior than mere acquaintances or strangers (Bond 2012). In cases where we had no scheduled meetings with employees of a certain ministry, we simply stated that other government officials from their country had agreed to set up a meeting with us. This social proof treatment successfully adheres to the two characteristics of good social proofs explained above. Bad behavior, such as the problem of policy-makers not using EBRs to inform their decisions, is not mentioned. Furthermore, the social proof treatment is not an idealistic statement of what policy-makers should do but rather a statement of what other policy-makers actually do—they express interest in learning more about our web site that provides quality summaries of EBRs.

We used difference of means t-tests and probit regression to determine whether there were significant differences in the outcome measures based on the social proof treatment. Difference of means tests are used to estimate average treatment effect to evaluate how the likelihood of positive responses, negative responses, appointments held, and the number of people trained are affected by the social proof treatment. We also used probit regression to evaluate the impact of the social proof treatment as well as other covariates on our outcomes in order to ensure that the differences are truly due to the treatment and robust to alternative specifications. We found the data was heteroskedastic; therefore, we used robust models in all instances.

The covariates used for our regression analysis originally included the social proof treatment, nationality of research assistant, and gender of research assistant. These terms were included in the model in order to control for alternative drivers for the differences in the outcomes we observed. There is a large body of literature suggesting that nationality and gender have a significant impact on how people are accepted and the credibility they are perceived to have; therefore, controlling for these variables is important. For example, different countries have been observed to have different brands (Fetscherin 2010). In general, more developed countries tend to have a brand that is perceived more positively. For this reason, government officials in these developing countries may view the research assistants from the U.S. as more credible. We controlled for this. Additionally, previous research suggests gender can impact up-take rates. The literature, however, is mixed on this subject. Women have been found to be perceived as more trustworthy than men (Buchan et al. 2008). Thus, if social proof is effective in part because it elicits more trust from the recipient of the treatment, it is likely that having a female research assistant will compound this effect and that the social proof will be more positive on those government officials who were contacted by a female research assistant. On the other hand, men have been found to be generally more influential than women, and, therefore, it is possible that

men will have a higher rate of positive responses and meetings held due to this (Carli 2001). We controlled for gender to distinguish the effects of the social proof treatment from the effect of gender. We also used a fixed effect for country in the overall analyses.

Our final probit regression models are written as follows. The first three outcomes use probit analysis, and the final outcome uses OLS regression:

Probability of Positive Response_i = Social Proof Treatment + Research assistant Gender + Research assistant Nationality + ε_i

Probability of Negative Response_i = Social Proof Treatment + Research assistant Gender + Research assistant Nationality + ε_i

Probability of Appointment Held_i = Social Proof Treatment + Research assistant Gender + Research assistant Nationality + ε_i

Number of Government Officials Trained_i = Social Proof Treatment + Research assistant Gender + Research assistant Nationality + ε_i

We used marginal effects transformations to make the results of the first three outcomes more comprehensible. Additionally, our final two-stage regression model uses probit analysis and is written as:

Probability of Appointment Held_i = Social Proof Treatment + Positive Response | (Research assistant Gender + Research assistant Nationality + Social Proof Treatment + ε_i)

Results

Research has consistently shown social proofs to be an effective way to influence the decisions of people (Schultz et al. 2008; Shearman 2007). In our experiment, however, we found that social proof at best had no significant effect on response and web site usage rates and may even have increased the likelihood that government officials responded negatively to the request to hold a meeting to learn more about our web site. Difference of means t-tests showed that the social proof treatment had no significant effect on any of the outcomes. Regression analysis including controls for the nationality and gender of the research assistant who contacted the government official largely support the null results found from the t-tests, with the exception of showing that government officials who received the social proof treatment may have actually been more inclined to respond negatively to our invitation to hold a meeting to learn about the web site. Table 1 shows the results of our regression analysis. The following section details the results of our analysis, as well as providing marginal adjustments that are more easily interpreted than the coefficients found in the regression analysis.

Positive Response

The social proof treatment had no statistically significant impact on the likelihood of receiving a positive response. Analysis of marginal effects shows that

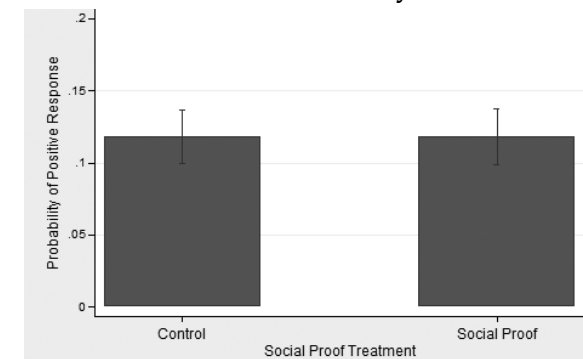
government officials assigned to the control group responded, on average, to 11.78 percent (95 percent confidence interval of 9.94 to 13.63) of invitations to hold an appointment to learn more about using evidence-based reports in their policy work. Those assigned to the social proof treatment responded positively at the rate of 11.84 percent (95 percent confidence interval of 9.91 to 13.76). We illustrated the findings in Figure 1. These results are surprising, as social proofs have generally been found to significantly increase uptake rates for behaviors of peers (Cialdini et al. 1990).

Table 1. Effect of Social Proof Treatment

VARIABLES	Positive Response	Negative Response	Appointment Held	Number of People Trained
Social Proof	0.00270 (0.0698)	0.172* (0.0891)	0.0314 (0.0851)	0.392 (0.598)
RA from U.S.	0.321*** (0.0733)	-0.718*** (0.0991)	0.245*** (0.0904)	1.093** (0.520)
RA Female	0.0453 (0.0722)	-0.907*** (0.120)	0.0735 (0.0890)	-0.365 (0.541)
Constant	-1.387*** (0.0673)	-1.064*** (0.0694)	-1.746*** (0.0818)	2.167*** (0.543)
Observations	2,227	2,227	2,227	131
R-squared				0.024

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Social Proof and Probability of Positive Response

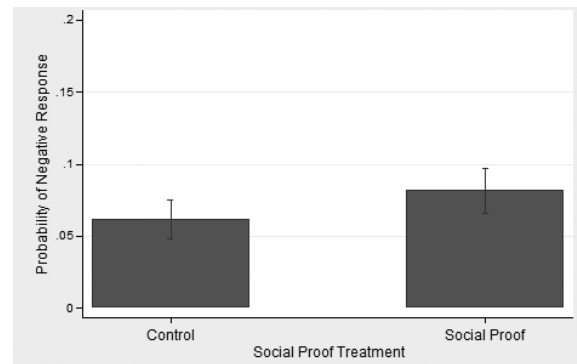


Negative Response

Interestingly, the social proof treatment slightly increased the probability that a government official would respond negatively to our invitation to hold a meeting. Government officials that did not receive the social proof treatment had a predicted 6.15 percent probability (95 percent confidence interval of 4.81 to 7.50) of responding negatively. Those who were randomly assigned to the social proof

treatment, however, had an 8.18 percent probability (95 percent confidence interval of 6.63 to 9.73) of giving a negative response. This difference is significant at the 0.1 level. Results are illustrated in Figure 2.

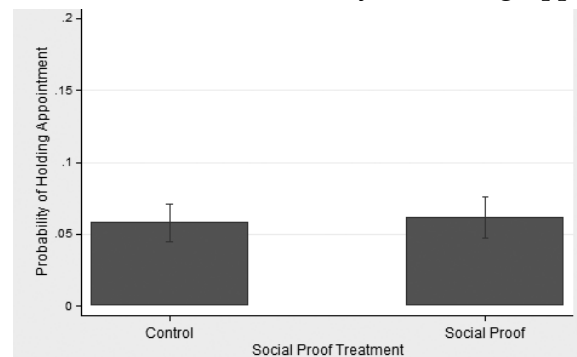
Figure 2. Social Proof and Probability of Negative Response



Appointment Held

The social proof treatment had no significant impact on the likelihood that a government official would hold a meeting with a research assistant to learn more about the web site. Government officials in the control group on average held meetings in 5.79 percent (95 percent confidence interval of 4.45 to 7.14) of researcher contacts, while government officials assigned to the social proof treatment had contacts result in briefings 6.16 percent of the time (95 percent confidence interval of 4.73 to 7.60). Figure 3 graphically presents these results.

Figure 3. Social Proof and Probability of Holding Appointment



Number of Government Officials Trained

The social proof treatment is estimated to have increased the number of government officials trained in a meeting, though this result was not significant statistically.

Discussion and Conclusion

While abundant literature is available on social proofs, little research indicates that social proofs are ineffective. What might explain our findings? The results are especially puzzling when considering that our treatments were quite similar to other social-proof treatments in the literature. In particular, the statement was descriptive (stating what other people do) rather than injunctive (stating what society generally approves or disapproves of). Descriptive norms have been shown to be more effective at influencing behavior (Jacobson, Mortensen, and Cialdini 2011). We were careful not to normalize any undesirable behavior, such as implying that many government officials do not use academic studies, because social proofs that normalize undesirable behavior are often less effective in inspiring the desired action from individuals (Cialdini et al. 2006).

Lastly, studies have shown that knowing similar people are involved in an activity increases one's likeliness of participating (Bond 2012). We attempted to make the social proof as impactful as possible by stating, whenever true, that a policy-makers' colleagues from their own ministry had asked for a meeting with researchers.

One possible explanation of the null result is that elites react differently to social proofs than others might. Few social proof studies focus on elites and even fewer on elites in government positions (Rao 2001). Previous studies indicate that persons classified as elite react differently when receiving advice and making decisions, and this could potentially explain their apparent resistance to the effect of a social proof (Galinsky et al. 2008). Elites have been shown to be less likely to listen to the advice of others and more likely to make decisions alone and on impulse (Fast et al. 2012; See et al. 2011). This could explain why the subjects of our study did not react positively to the social proof treatment. Rather than being motivated by the decisions of others, elites choose to form their own opinions and make their own decisions.

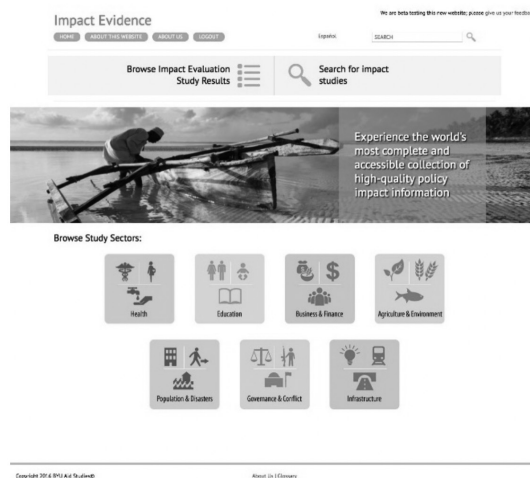
Another possibility is simply that social proof in the workplace induces free-riding. If employees hear that others in their ministry have received the same training, they may think it less important to spend their time doing it. They could rationally believe their coworkers or supervisors will bring the issue to their attention later if it is actually important.

Our research indicates that social proofs, though shown to strongly impact behavior in other settings, do not have a significant impact on the behavior of Peruvian government officials and may actually increase their likelihood of responding negatively to the request to engage in the desired behavior. More research, however, is necessary to understand if this is a result of the social proof or if there are other factors, such as free-riding, that contribute to this result.

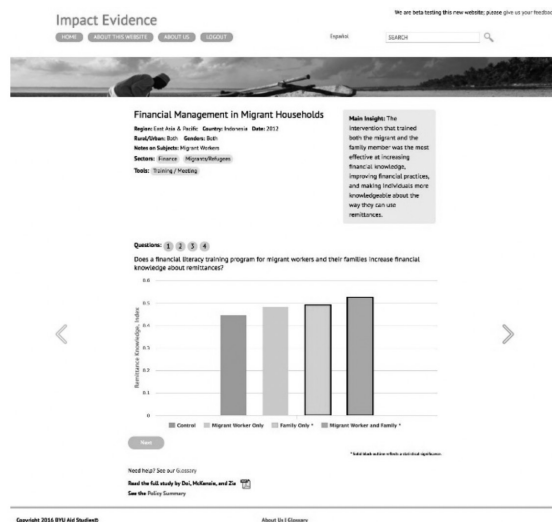
Appendix

Example images of the Impact Evidence web site that was presented to government officials by the research assistants.

The Home Page of the Web Site



Example Study from the Web Site



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