

**A Matter of Life or Death:  
How Racial Representation Shapes Compliance with City Disaster Preparedness Orders**

Eddie Lucero, University of California, Merced

Jessica Trounstine†, University of California, Merced

Jennifer M. Connolly, University of Miami

Casey Klofstad, University of Miami

**Abstract:** To effectively govern, elected and appointed municipal officials rely on the cooperation and compliance of individuals and private actors. Particularly when policy directives lack strong enforcement mechanisms, many citizens choose not to comply. We investigate the extent to which shared ethnic/racial identity between residents and municipal political leaders increases residents' willingness to comply with government issued evacuation orders in the context of an impending natural disaster. Drawing on a large-scale embedded survey experiment of Florida residents who lived through Hurricane Irma in 2017, we provide evidence that descriptive representation increases the likelihood of individual compliance with local government evacuation orders. Additionally, we find that if non-governmental partners encourage evacuation, then resident compliance increases, particularly among people of color who *do not* share the race of their city official. The results speak to the importance of descriptive representation at the local level, especially in settings that can mean the difference between life and death.

†Corresponding Author:

Jessica Trounstine, University of California, Merced, School of Social Sciences, Humanities, and Arts, 5200 North Lake Road, Merced, CA 95343

## **Introduction**

To effectively govern, elected and appointed officials rely on the cooperation and compliance of individuals and private actors (Alm et al., 1992; Dickson et al., 2009; Jenny et al., 2007, Pierre & Peters, 1998; Salamon, 2002; Strach & Sullivan, 2010). This is true at all levels of government, but it is particularly visible at the local level where bureaucrats significantly contribute to the development and implementation of policy (Lipsky, 1980). To collect revenues, municipal governments need property owners to properly report their residency status, comply with land use regulations, and pay their property taxes. To remove waste, cities rely on residents to properly dispose of refuse in garbage cans and then place their cans at the curb on trash day by a certain time. For the police to maintain order, local police departments need residents to report criminal activity, abide by local, state, and national laws, and cooperate with police commands. And, for officials to keep communities safe during emergencies and disasters, local governments need residents to heed directives regarding preparation, mitigation, response, and recovery activities.

Compliance is straightforward when citizens benefit directly from a policy or when they are likely to face severe punishment for non-compliance (Bali, 2003; Dickson et al., 2009; Jenny et al., 2007; Meier & Morgan, 1982). Understanding how residents come to determine such costs and benefits, i.e. how they view their risk or reward, is complex (Mastrofski et al., 1996; Stein et al., 2010). However, as Tyler (1990) explains, society “cannot function if it can influence people only by manipulating rewards and costs” (p22). Citizens comply with government dictates for *both* instrumental and normative reasons. Indeed, scholars have shown citizens’ general trust in government and beliefs about what behavior is right and appropriate play a crucial role in compliance (Braithwaite & Makkai, 1994; Im et al., 2014; Perry & Lindell, 2003).

Individual attitudes toward government are affected by the degree to which citizens feel represented by those selected to govern (Mansbridge, 1999). Racial descriptive representation is a critical component of citizens' perceived legitimacy of their political representation but has lagged for people of color. This gap in descriptive representation has been shown to affect the political attitudes and orientation of underrepresented communities (Barreto, 2007, 2010; Barreto et al., 2005; Gay, 2001, 2002; Stein et al., 2005; Tate, 2001). Crucially, scholars have shown that disadvantaged groups are more willing to accept decisions when they are made by people who share their demographic traits (Arnesen & Peters, 2018).

We build on this work, to analyze the ways in which descriptive representation (or the lack thereof), affects the ability of the government to obtain citizen compliance with policy directives that lack strong enforcement mechanisms. Specifically, we investigate the extent to which shared ethnic/racial identity between residents and municipal leaders increases residents' willingness to comply with government issued evacuation orders in the context of an impending natural disaster. We draw on a large-scale embedded survey experiment of Florida residents who lived through Hurricane Irma in 2017, a category 5 storm,<sup>1</sup> to provide evidence that descriptive representation increases the likelihood of individual compliance with local government evacuation orders. Additionally, we find that if non-governmental partners encourage evacuation, then resident compliance increases, particularly among people of color who *do not* share the race of their city official. The results speak to the importance of descriptive representation in facilitating compliance with policy directives that lack strong enforcement mechanisms – and can be matters of life or death.

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<sup>1</sup>Irma was a category 5 storm at its height. The storm weakened to a category 4 when it made landfall in the Florida Keys. It then weakened to a tropical storm as it passed over the state of Florida.

## Literature Review and Theoretical Predictions

### *Descriptive Representation*

When will residents do what the government asks – particularly when short-term interests conflict with government orders? Philosophers have offered two broad answers: a fear of loss/expectation of gain (Hobbes, 1994[1668]) and a duty to obey (Kant, 1949[1785]). There is substantial evidence that sanctions and inducements generate obedience to authority (Scott & Grasmick, 1981; Zimring and Hawkins, 1973). But, theorists have long noted that such coercive power is costly – even tyrannical regimes rely on some degree of legitimacy (Barker, 1990; Ross, 1994). To operate effectively, governments depend on a belief among the populace that the government has the right to exercise authority. At a fundamental level, constituents will do what the government (or any authority) asks, when they believe that authority to be legitimate; perceptions of legitimacy and trust are integral to producing cooperation with government orders (Dickson et al., 2009; Jenny et al., 2007; Meier & Morgan, 1982).

Empirical scholarship on individual compliance has often focused on compliance with regard to the criminal justice system (Mastrofski et al., 1996) and tax policy (Alm et al., 1992; Scholz & Pinney, 1995).<sup>2</sup> In these settings, compliance is significantly influenced by perceptions of distributive, procedural, and interactional legitimacy (Jenny et al., 2007, p. 240). Distributive legitimacy refers to the way in which the rule in question distributes burdens on those being asked to comply.<sup>3</sup> Procedural legitimacy emphasizes the process by which the rules were created and consented to by the people they affect. Interactional legitimacy entails the

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<sup>2</sup> Compliance has also been extensively studied in the field of international relations with respect to treaties. See J. von Stein (2017) for an overview.

<sup>3</sup> People differ in their view of what distribution they believe is fair. Some demand equality, others prefer proportionality with respect to investment, still others support distribution based on some definition of need. For our experiment we interpret distributive legitimacy as rules that require/recommend that all residents evacuate.

interpersonal aspect of compliance, or the degree of respect that government agents show to constituents being asked to comply with a policy, as well as the informational transparency and adequacy with which rules, policies, or directives are created and delivered. Compliance is most likely when individuals perceive the governing authority to embody the principles of equality, inclusion, and transparency.

We propose that descriptive representation, or the presence of “representatives [who] are in their own persons and lives in some sense typical of the larger class of persons whom they represent,” (Mansbridge, 1999, p. 629) shapes individual evaluations of legitimacy. In practice, descriptive representation can occur when a representative and constituent share any characteristic or shared experience that binds them. For example, descriptive representation could mean a black congressman representing black constituents or a congressman who is a farmer representing constituents who are also farmers. While descriptive representation can take several forms, we focus on race and ethnicity as a well-established (and well-understood) form of descriptive representation.

Descriptive representation induces benefits for constituents because of shared political interests. For instance, legislators of color are more likely to take action, both substantive and symbolic, on race-salient issues in both Congress and the state legislatures (Bratton & Haynie, 1999; Minta, 2009; Owens, 2005; Wallace, 2014; Wilson, 2010), are more responsive to co-ethnic constituents in terms of casework (Butler & Broockman, 2011), and increase co-ethnic trust and perceived legitimacy of American democracy (Gay, 2002; Tate, 2001).

Descriptive representation has also been shown to increase co-ethnic political participation as it signals increased benefits in terms of policy goals and outcomes, relative to the costs of participation (Bobo & Gilliam, 1990). While Bobo and Gilliam (1990) argue that

descriptive representation motivates co-ethnic constituent behavior by increasing the value of participation and retaining co-ethnics in office, Dawson (1994) argues that race, as a heuristic, conveys information that the goals, values, and outcomes of co-ethnic constituents and elites are one and the same. Dawson provides evidence for this argument by showing that perceptions of linked fate<sup>4</sup> and group consciousness<sup>5</sup> explain much of the variation in African American vote choice when a black candidate is on the ballot.

Several Latino politics scholars have shown Latinos also exhibit group consciousness, founded in a shared cultural heritage (e.g. Catholicism, Spanish language, and similar immigration experiences) (Abrajano & Alvarez, 2010; Barreto, 2007; Sanchez, 2006; Sanchez & Masuoka, 2010; Stokes, 2003; Valdez, 2011). Among the Latino electorate, being represented by co-ethnics decreases feelings of political alienation and increases feelings of political efficacy (Pantoja & Segura, 2003), increases voter turnout, and strengthens preference for the Latino candidate on the ballot (Abrajano et al., 2005; Barreto, 2007, 2010; Barreto et al., 2005; Stokes-Brown, 2006; but see Binder et al., 2014). Sanchez and Morin (2011) demonstrate that the presence of a Latino mayor increases the probability that constituents will possess a sense of Latino linked fate.

The role of descriptive representation is also important when considering the extent to which bureaucracies represent the citizens they serve, which public administration scholars refer to as representative bureaucracy. Theoretically, passive representation, or underrepresented groups gaining access to government positions in the bureaucracy, will lead to active representation, defined as policies that help members of the underrepresented group in the

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<sup>4</sup> “Linked Fate” refers to the idea that within an ethnic group, the economic/political fate of an individual is intrinsically tied to the fate of the group at large.

<sup>5</sup> “Group Consciousness” refers to the idea that within an ethnic group, group memberships translate into shared beliefs, values and goals (both political, economic, and social).

broader community (Keiser et al., 2002). For example, increasing the number of female officers in a police force or the number of minority public school teachers (passive representation) may be positively associated, respectively, with sexual assault reporting and arrests, or minority student academic performance (active representation) (Dee, 2004, 2005; Meier & Nicholson-Crotty 2006). One possible mechanism linking passive and active representation is that bureaucrats from underrepresented groups may be more empathetic towards minority individuals while on the job (Gilliard-Matthews et al., 2008; Mitchell et al., 2001), leading the members of the public to have more positive views toward these bureaucrats, and in turn, government.

In addition to facilitating the creation of policies that benefit underrepresented groups, representative bureaucracy may also enhance the overall legitimacy of government and trust in government (Mosher, 1968). For example, recent work suggests that a representative police force (composed of mostly black officers) is associated with higher levels of perceived performance, trust, and fairness among black citizens (Ricucci et al., 2018). In other words, representative bureaucracy improves citizen trust in their government bureaucrats.

Scholars have also examined the impact of a representative bureaucracy on the delivery of public services (Ricucci & Van Ryzin, 2017; Ricucci et al., 2016). Having street level bureaucrats who share demographic characteristics with the citizens they serve may increase citizen willingness to cooperate and comply with government programs. For instance, in an experimental study using a hypothetical recycling program, Ricucci et al. (2016) find that varying the gender of public officials increases female respondents' willingness to voluntarily comply with multiple aspects of the recycling program. Conner (2016) finds that interactions between school officials and Native American nations are more positive when the school officials are also Native American.

The race or ethnic identity of politicians and public administrators can also be a powerful motivator of constituent behavior. Descriptive representation influences candidate preference, motivates turnout, and increases feelings of political efficacy among ethnic minorities. A more representative bureaucracy interacting with the public to enforce public policies and deliver public services increases citizen trust in government and citizen willingness to cooperate with government requests. Building on these findings, we argue that descriptive representation should also impact resident willingness to comply with the requests of local government officials. If shared race/ethnicity enhances trust and legitimacy in government officials, we argue it should also increase individuals' willingness to comply with government directives.

We expect descriptive representation to impact citizen willingness to comply with local government directives in a variety of local contexts, including transportation, parks and recreation, public health, public welfare, and public safety. Here, we empirically test our expectations within the specific context of government-issued evacuation orders designed to protect public safety and public health during hazardous weather. This is an especially important context within which to empirically examine our expectations as the stakes are high and enforcement mechanisms are relatively weak.

### ***Constituent Compliance***

Every city in the United States faces threats from natural and manmade disasters, and local governments are the “first line of official duty” (McLoughlin, 1985) in responding to disasters. Most local governments have established protocols for dealing with emergency situations, though emergency preparedness, capacity, and procedure varies widely from place to place. In some municipalities, an entire department is dedicated to emergency management, in others, emergency response is housed within another public safety unit.



The local government official most likely to issue emergency preparedness directives varies from one municipality to the next and can depend on the form of government. The two most common municipal forms of government in the United States are the mayor-council form and the council-manager form. Mayor-council municipalities are led by an elected city council and an elected mayor. The city council passes ordinances while the mayor serves as the executive, often having the power to veto ordinances, appoint and manage department heads, and filling ceremonial roles. In a mayor-council municipality, the mayor would be the person most likely to announce an evacuation order.

In a council-manager municipality, the elected city council appoints a professional city manager to oversee the day to day operations of the city while the elected mayor (if the city has one) either plays a role that is largely the same as that of an elected city council member, meaning they discuss, vote, and approve legislation, or they act as a ceremonial figurehead. While the council makes policy, the city manager implements policy and manages city departments such as fire, water, parks and recreation, and emergency preparedness. In other words, the council-manager system delegates management authority to a professionally trained technocrat. In council-manager cities, in times of danger, the city manager would be the most likely official to issue orders to minimize harm and damage.

From the constituent's point of view, we should expect compliance when individuals perceive that orders, directives, and policies crafted by governing authorities are distributed evenly across the community (distributive legitimacy), have been generated in a fair and inclusive process (procedural legitimacy), and that the implementation of such orders is transparent and bears constituents' best interests in mind (interactional legitimacy).

The prevalence of linked fate and group consciousness among communities of color suggests that policy crafted by descriptively representative leaders will increase the belief that constituents' best-interests were in mind when the policy was crafted (Hurley & Kuklinski, 1994). The representative bureaucracy literature suggests that when bureaucrats providing public services are more representative of the public, individuals view government as more trustworthy and legitimate. As Riccucci and Van Ryzin (2017) explain, "This happens not only through the channel of administrative discretion, with bureaucrats taking affirmative steps to benefit disadvantaged groups, but also through the channel of symbolic representation, which involves citizens themselves judging administrative agencies as more fair and trustworthy. This enhanced legitimacy, in turn, seems to influence the extent to which clients and citizens cooperate and comply with government, thus coproducing important policy outcomes" (p. 7). We assume that residents view appointed city managers as public leaders and that a city manager's race/ethnicity may serve as a signal to constituents that he or she shares policy goals and outcomes. Thus, we predict that descriptive representation increases compliance by satisfying the procedural legitimacy condition asserted in the compliance literature. More succinctly, our first prediction is:

*H<sub>1</sub>: Constituents who share racial/ethnic identity with the government official issuing an order will be more likely to comply with the order relative to constituents who do not share racial/ethnic identity with the government official.*

In the real world, people of color are often not represented in government by co-ethnics. If people of color are less likely to perceive white officials' directives as procedurally legitimate, governments may still be able to convey interactional legitimacy. Interactional legitimacy requires that citizens feel adequately informed about the governments' directive and are treated with respect. Benjamin (2017) provides evidence that co-ethnic endorsements can encourage

people of color to vote for candidates in local elections who do not share their descriptive traits. Other scholars have found that a shared identity with the person delivering political messages can play an important role in shaping public opinion and political behavior (Bedolla & Michelson, 2012; Boddery & Yates, 2014; Kane & Macaulay, 1993; Shaw et al., 2000). Applying these theories to our context, we expect that residents may be persuaded to comply when the government's directive is endorsed by a trustworthy elite. We operationalize a trustworthy elite as a co-ethnic neighborhood organization leader. Our second prediction is:

*H<sub>2</sub>: Constituents who are not descriptively represented by the government official issuing the order will be more likely to comply with government orders when co-ethnic non-governmental actors add their support for the order compared to scenarios that feature government actors alone.*

## **Methods**

### ***Experimental Rationale***

Hurricanes are inherently uncertain events. Despite advanced weather prediction methods and knowledge of flooding patterns, it is typically difficult to know whether one should bear the cost of evacuating. Hurricane evacuations have long been a focus of scholars of emergencies and disasters (Baker, 1991, 2000), because when a citizen refuses to evacuate they put their own lives (Elder et al., 2007), their pets' lives (Edmonds & Cutter, 2008), and the lives of emergency workers in danger (Osofsky et al., 2013). Further, a refusal to evacuate can lead to the spread of disease and other serious problems (Heath et al., 2001).

Scholars have found that the decision to evacuate is complicated (Edwards et al., 2000; Lindell et al., 2011; Mesa-Arango et al., 2013). Various factors appear to affect real world evacuation decisions, including citizens' perceptions of risk, access to information, access to

resources and supplies, and a social network that facilitates information gathering and individual coordination (Litt, 2008; Perry & Lindell, 2003; Stein et al., 2010; Stivers, 2007).

Many of these factors are related to both the race and class of residents which have also been identified as significant factors in driving evacuation behavior (Barnshaw & Trainor 2007; Brodie et al. 2006; Elder et al., 2007), making it difficult to study the effect of descriptive representation in an observational setting. To account for these confounding factors, and to empirically test our predictions, we design and conduct a survey experiment that allows us to isolate the causal effect of the messenger, while accounting for all other potential factors that affect decisions to evacuate.<sup>6</sup>

### ***Experimental Design***

While municipal governments in Florida (the context of our survey) take a variety of forms, the two most common forms are council-manager and a hybrid system with an appointed manager or administrator (Florida League of Cities, 2013). As a result, our survey experiment features an evacuation order issued by the City Manager.<sup>7</sup> Respondents were randomly assigned to one of 10 treatment conditions where they read a vignette in which their fictional city manager (and in some conditions a neighborhood association leader) warns of the arrival of a potentially devastating hurricane and recommends evacuation for all residents. To test our first hypothesis, that procedural legitimacy induces evacuation, we vary the race of the city manager's name in

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<sup>6</sup> While experiments offer strong internal validity, they can have weak external validity. We sought to minimize this weakness by surveying individuals who had recently experienced a devastating hurricane. Nonetheless, we cannot be sure that responses to our survey questions would actually translate into evacuation behavior in the real world.

<sup>7</sup> Whether or not city managers are actually unbiased professional bureaucrats is a topic of significant debate (Bosworth, 1958; Gay, 2002; Hayes & Chang, 1990; Long, 1965; Stillman, 1977; Svava, 1999; Trounstein, 2009). What matters here is whether constituents believe that city managers who share descriptive characteristics, such as race, also share similar values and goals (as the research on *elected official* descriptive representation would suggest).

each of the treatment conditions so that respondents are assigned to a condition where their city manager has a putatively white, black, or Latino name.<sup>8</sup> To test our second hypothesis, that interactional legitimacy enhances compliance, some respondents were assigned to a condition in which city officials are joined by a neighborhood organization in issuing the evacuation order.<sup>9</sup> In the treatments that include a neighborhood association leader, we also vary the name of the leader to signal that the leader is either white, black, or Latino. To avoid introducing the leader's gender into the compliance decision, we use all male names. We ask all respondents to report their likelihood of evacuating under a given scenario. Table 1 summarizes our expectations and the randomization in our experiment.

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<sup>8</sup> White, Latino, and Black names were selected from the list of names generated by Crowder-Meyer, Gadarian, and Trounstine (2019) who used a combination of Census data, Social Security data, and published work identifying unique African American names. These scholars conducted a pre-test to verify that the names were cueing race/ethnicity as intended. White names were identified as white 90.69% of the time. Latino names were identified as Latino 91.40% of the time. Asian names were identified as Asian 90.87% of the time. Black names were identified as Black 87.34% of the time. Mistakes were nearly always identified as white, which should bias against our finding significant differences in evacuation probabilities by race of leaders. White and Latino names are cued through surnames, while black names are cued through first names. Surnames were selected by determining last names that are very common for a given racial group AND uncommon for other racial groups. First names for Latinos and whites were selected as the most common names given to male children in 1970. First names for blacks were drawn from Bertrand and Mullainathan (2004, p. 995), Lieberman and Bell (1992), and Figlio (2005). Crowder-Meyer, Gadarian, and Trounstine list 10 names each for Black, Latino, and white male candidates. We selected 3 names for our city managers, and 3 different names for our community leaders. Names were randomly assigned within treatment groups. The names are as follows: white city managers – Brian Hansen, Scott Olson, and Todd Kennedy; Latino city managers – Daniel Perez, David Sanchez, and John Diaz; Black city managers – Darnell Jenkins, Jamal Barnes, and Tyrone Washington; white community leaders – Charles Meyer, Donald Cox, and Timothy Snyder; Latino community leaders – Anthony Gomez, Michael Ortiz, and Richard Martinez; Black community leaders – Jermaine Sanders, Leroy Brooks, and Tremayne Griffin. We cue race with names rather than pictures because scholars have found that respondents misidentify Latino photos as white (see Crowder-Meyer, Gadarian, Trounstine, and Vue, 2018). Butler and Homola (2017) conduct an extensive audit study to determine that racially distinctive names *do not* cue socioeconomic status or political resources.

<sup>9</sup> In both of our hypotheses we attempt to hold perceptions of distributive legitimacy constant by asserting that the entire city has been asked (but not forced) to evacuate.

	<b>H<sub>1</sub>: Procedural Legitimacy Condition</b>	<b>H<sub>2</sub>: Interactional Legitimacy Condition</b>
<b>Information Shown</b>	City Manager Only	City Manager + Community Group
<b>Random Assignment</b>	City Manager Race	City Manager Race Community Leader Race

Scholars have found that compliance with government dictates is much more likely when people believe that they will be punished for noncompliance (Bali, 2003; Dickson et al., 2009; Jenny et al., 2007; Mastrofski et al., 1996; Meier & Morgan, 1982). Further, though some states do allow for the use of force to compel evacuation, the large majority of public safety officials have made clear that they will not arrest individuals who do not comply with evacuation orders. Accordingly, the wording of our vignette makes evacuation voluntary. This most closely mirrors real life evacuation orders and allows us to investigate the effect of descriptive representation independent of the legality of respondent’s choice. We designed the wording of our hypothetical evacuation order to be clear and concise but also representative of a typical evacuation order. See Appendix A1 for examples of evacuation orders issued during Hurricane Irma in 2017 that inspired our wording. For residents living in hurricane prone areas, evacuation orders and decisions about whether or not to evacuate in the face of a storm are familiar. It was important that our experimental set-up be both believable and well-understood. Thus, our data come from a survey of Florida residents who experienced Hurricane Irma, a “major” Category 4 storm with the ability to produce “catastrophic” damage as defined by the Saffir-Simpson Hurricane Wind

Scale (National Hurricane Center n.d.). In the days leading up to Hurricane Irma making landfall, essentially all Florida residents were at risk of experiencing some impact from the storm, due to Irma's abnormally large size and unclear trajectory. Irma made landfall on Cudjoe Key, Florida on the morning of September 10th, 2017, with sustained winds of 130 miles per hour. Over 70 Florida residents died as a consequence of the storm (Rabin, 2017). Our experimental text read:

Imagine that it is hurricane season and weather experts predict that a major hurricane will make landfall in your area within the next few days. You read the following statement in your local news media: "As your city manager, [white, Latino, black name], I *am joined by the president of the Local Association of Neighborhoods, [white, Latino, black name]*, to urge you to evacuate. We don't want to take any chances. It is better for us to be safe than sorry. We have a good number of residents and visitors in town at this time and we're asking everyone to finalize their evacuation plans. Do not wait until the last minute. Once the storm makes landfall, some roads may not be passable. Please get an early start." How likely is it that you would evacuate before the storm makes landfall?

The italicized text was included for 70% of our sample. Our treatment conditions included the following combinations: 1) white city manager, 2) Latino city manager, 3) black city manager, 4) white city manager & Latino neighborhood leader, 5) white city manager & Black neighborhood leader, 6) Latino city manager & white neighborhood leader, 7) Latino city manager & Black neighborhood leader, 8) Black city manager & white neighborhood leader, 9) Black city manager & Latino neighborhood leader, 10) white city manager & white neighborhood leader.<sup>10</sup> After reading the vignette, respondents were offered the opportunity to report whether they would be "very likely," "somewhat likely," "somewhat unlikely," or "very unlikely" to evacuate.

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<sup>10</sup> We elected not to include treatment conditions featuring a Black city manager and Black neighborhood leader or Latino city manager and Latino neighborhood leader because of the cost of additional treatment conditions. We had no theoretical expectations about how evacuation decisions would be affected when the city manager and community leader were of the same race. Instead we sought to use our 10 treatment conditions to test our expectations about how *not* sharing the race of the manager could be overcome by sharing the race of the community leader. Because white city managers and white city leaders are the typical case, we use this as our comparison.

## *Data Collection*

The experiment was embedded in a survey of 2085 adults aged 18 or older, residing in the State of Florida. Respondents who said that they did not know if they would evacuate were coded as missing ( $n = 120$ ). We also restrict the analysis to respondents who live in a municipality rather than in unincorporated county land ( $n = 1527$ ) because the vignette specifically references a “city manager.”<sup>11</sup> The sample size used in the analysis is 1,435 respondents.

The survey was conducted by Qualtrics, an online service used to administer questionnaires on the Internet and was fielded between 08/08/2018 and 08/21/2018. For this study Qualtrics partnered with Research Now to recruit a sample of subjects that matched Florida U.S. Census records on sex, age, and income.<sup>12</sup> Based on these quota-based recruitment procedures there is no response or completion rate to report, nor was there any respondent attrition. Respondents were allowed to self-administer the questionnaire in either English or Spanish.

Table 2 displays the descriptive statistics of our sample (and all Florida residents) on a number of covariates. The average *age* of our respondents is 45 years old. A little over half of our sample (53%) is *female*. We measure *ideology* with a standard 7-point scale with 1 being

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<sup>11</sup> Respondents who said that they did not know whether they live in the city or not *are* included as they are unlikely to find the language of the experiment problematic.

<sup>12</sup> Research Now maintains panels of subjects that are only used for research. Individuals voluntarily join a Research Now panel (e.g., through the company’s website, or by responding to a banner advertisement on a different website). Research Now complies fully with European Society for Opinion and Marketing Research (ESOMAR) standards for protecting research subjects’ privacy and information. Subjects received reward points redeemable from Research Now in exchange for voluntary participation in the study. They were invited to participate by email and consented voluntarily to participate by clicking a link to the survey in that email. Subjects were free to end participation at any time by closing their web browser. "Initial approval to conduct research with human subjects, based on the design of the English language survey instrument, was granted by the University of Miami Human Subject Research Office on July 6, 2018 (Protocol #20180594). A modified version of the protocol was approved by the University of Miami Human Subject Research Office on July 16, 2018 (Modification #MOD00023914) to certify use of the Spanish language translation of the survey instrument.



Strong Liberal and 7 Strong Conservative. On average, our sample ideologically identifies as Moderate (3.8). The average respondent has a yearly income between \$50,000-\$75,000 and holds a 2-year college degree. The majority of respondents own their home (62%). Individuals who self-identify as white make up a plurality of our sample (46%), followed by Latinos (29%), and African-Americans (22%).

**Table 2: Descriptive Statistic of Sample**

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Florida Average</i>
<i>Age</i>	1,434	44.893	17.27	18	84	42
<i>Education</i>	1,434	2-Year college degree	1.44	1	6	Some college
<i>Female</i>	1,431	0.530	0.50	0	1	0.511
<i>Ideology</i>	1,435	3.780	1.77	1	7	3.08*
<i>Income</i>	1,435	\$50-000-\$75000	2.31	1	9	\$53,267
<i>Home-Owner</i>	1,433	0.600	0.49	0	1	0.650
<i>Black</i>	1,435	0.222	0.42	0	1	0.169
<i>Latino</i>	1,435	0.288	0.45	0	1	0.261
<i>White</i>	1,435	0.464	0.50	0	1	0.535
<i>Did not evacuate Irma</i>	1,367	0.707	0.46	0	1	0.670

\*calculated from 2018 Cooperative Congressional Election Study

## Results

### *Who Evacuates?*

First, we ask what the demographic correlates are for future likelihood of evacuation in our sample. For this analysis we combine all treatment conditions. Our dependent variable, *Evacuate*, is coded from 0 to 3 with higher values indicating greater likelihood of evacuation. We estimate an OLS regression to examine how respondents' *race, income, educational attainment, age, gender, whether they own their home, have kids at home, whether they have pets at home, whether they live in a flood zone, whether they have flood insurance, and whether they trust their local government* impact their likelihood of evacuating, regardless of which

treatment they were shown.<sup>13</sup> We also include a variable noting if the respondent said that they *Did not evacuate Hurricane Irma* to determine whether some respondents have a higher propensity to evacuate.

**Table 3: Demographic Correlates of Evacuation**

Variable	$\beta$	SE	P> t
Latino	0.202	0.065	0.002
Black	0.292	0.072	0.000
Income	0.002	0.013	0.870
Educ	-0.013	0.020	0.507
Age	0.002	0.002	0.282
Female	0.140	0.054	0.010
Own Home	0.129	0.060	0.033
Kids at home	0.139	0.057	0.015
Pets at home	-0.037	0.053	0.485
Flood zone	-0.031	0.059	0.601
Flood insurance	0.061	0.062	0.325
Trust Local Government	0.191	0.035	0.000
Did not evacuate Irma	-0.340	0.055	0.000
Constant	1.389	0.167	0.000
<b>R<sup>2</sup></b>	0.083		
<b>N</b>	1343		

Table 3 displays the results of our estimation, offering insight into who evacuates natural disasters generally. According to the model, people of color (blacks and Latinos) are, on average, significantly more likely to say they would evacuate in our scenario relative to white respondents, regardless of their assigned treatment group. Respondents who possess higher levels of trust in government are also more likely to say that they would evacuate. This supports the proposition that individuals who have high levels of trust in government are more likely to take their local government’s warning at face value and comply with their dictates. Women are also significantly more likely to say that they would evacuate compared to men. Interestingly,

<sup>13</sup> Note that these survey items were all asked prior to the experiment. We have missing data on several of the survey questions, reducing our sample size to 1,343

living in a flood zone does not increase the likelihood that a respondent says they would evacuate in the event of an approaching hurricane. Not having evacuated for Hurricane Irma is the most important predictor of responses to the evacuation question. Below, we explore the possibility that our experiment faces, a “ceiling effect” (Duncan, 2004, p. 21), among individuals who are *a priori* disposed to evacuate, as evidenced by their behavior during Irma. These respondents may report a high level of willingness to evacuate regardless of the message or messenger encouraging evacuation. Regardless of experimental condition (i.e., the pooled data) survey respondents who evacuated during Hurricane Irma were more likely to state that they would evacuate in response to the ten vignettes compared to respondents who remained ( $t = -8.02, p < .0001$ ).

The data do not allow us to determine why it is that black and Latino respondents are more likely to evacuate relative to whites, even after controlling for income and geographic vulnerability. One possible explanation is that people of color are more vulnerable to the after-effects of natural disasters (Eisenman et al. 2007, Zoraster 2010). Racial minorities are more likely to have lower levels of wealth and be less prepared, both financially and in terms of resources, to stay put and ride out the aftermath of natural disasters. However, we include income in the model, so it is possible that other factors are at play. For instance, there is evidence that governments, at all levels, often fail to rapidly respond and provide relief to communities of color that have been struck by disaster.<sup>14</sup> Knowledge of government non-response in previous disasters may motivate Latino and black respondents to get out of harm’s way rather than stay

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<sup>14</sup> After Hurricane Katrina struck New Orleans in 2005, Black community and national leaders criticized the Bush administration for what they perceived as a failure of the government to rapidly respond to and provide relief for poor, predominately black communities (Stivers, 2007).

put.<sup>15</sup> Further research is needed to better understand this general difference across racial groups in evacuation propensity. Next, we turn to analyzing whether sharing racial characteristics with the local public official announcing the evacuation order increases the likelihood of evacuation.

### ***H<sub>1</sub>: Procedural Legitimacy***

Next, we examine our hypotheses regarding the impact of descriptive representation on willingness to evacuate. Are residents more likely to say that they will evacuate when they share the race of their city manager? We find that they are. But importantly, we only see this result for people who did not evacuate during Hurricane Irma. The second and third columns reveal the effect of having a same race city manager for white respondents and respondents of color separately. In this analysis our dependent variable is the likelihood of evacuation and our independent variable is a dummy variable, *SameRace*, coded 1 if the respondent shares the same race as our fictitious city manager. In this first model, we pool respondents who are shown the vignette with and without community leaders in order maximize our sample size. Table 4 presents the results.

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<sup>15</sup> On the other hand, evacuating an area that is about to be hit by a disaster is itself an expensive and difficult process. Evacuees require resources to sustain themselves while away from their home and they must have information regarding what areas are safe for evacuation. Wealthier Americans may be more likely evacuate prior to a hurricane as a result of having more financial resources on hand. However, the data does not support this prediction; income is not significantly associated with the likelihood of evacuating once notified that a hurricane is imminent, and the local government has advised evacuation.

Table 4: Effect of Having a Co-Ethnic City Manager on Likelihood of Evacuating

Variable	Model 1(All)			Model 2(POC)			Model 3 (White)		
	$\beta$	SE	P> t	$\beta$	SE	P> t	$\beta$	SE	P> t
<i>Same Race CM</i>	-0.136	0.103	0.189	-0.120	0.155	0.438	-0.169	0.143	0.235
<i>Did not Evac Irma</i>	-0.444	0.066	0.000	-0.272	0.082	0.001	-0.669	0.104	0.000
<i>Same Race*No Evac</i>	0.282	0.122	0.021	0.328	0.177	0.064	0.296	0.171	0.084
<i>Constant</i>	2.295	0.055	0.000	2.266	0.068	0.000	2.336	0.087	0.000
$R^2$	0.035			0.018			0.073		
$N$	1367			733			634		

Model 1, shown in Table 4, includes all of the respondents within the parameters specified above and regresses our dependent variable, the likelihood of our respondent evacuating in our scenario, on our binary independent variable, *Same Race*, which indicates whether the respondent is exposed to the treatment in which they are represented by a co-ethnic city manager. We also include a dummy variable, *Did not Evacuate Irma*, indicating respondents who chose not to leave during the hurricane. We interact the *Same Race* and *No Evacuation* variables to understand how our treatment operated for those who evacuated Irma versus those who did not. What we find is that sharing the race of the city manager significantly increases the likelihood that *non* evacuator would evacuate. For those who *did* evacuate Hurricane Irma, the race of the city manager has no effect.

Models 2 and 3 conduct the same analysis as Model 1 but splits the sample by race of respondent. Model 2 shows the results for respondents who identify as people of color (blacks and Latinos) and Model 3 shows the results for whites. We find that descriptive representation increases citizen compliance with government directives for both whites and people of color – but, again, only among non-evacuators. Predicting effects from Model 2, we find that people of

color who are not represented by a co-ethnic city manager and who did not evacuate Irma report being somewhat unlikely to evacuate when told of an arriving hurricane (1.99). However, treating respondents with a co-ethnic city manager significantly increases their estimated likelihood of evacuating to being somewhat likely (2.20).<sup>16</sup>

The marginal effects of our model indicate that being represented by a co-ethnic city manager moves respondents from answering that they are somewhat unlikely to evacuate to somewhat likely, which in the context of an arriving natural disaster is a compelling result; this could mean the difference between life and death in an especially dangerous storm.

### ***H2: Interactional Legitimacy***

Given that respondents are less likely to comply with government requests when they are represented by different race officials, we next turn to assessing whether managers can compensate for this lack of legitimacy and increase willingness to comply with the government order by adding non-governmental community leaders to our hypothetical scenario. Our dependent variable, *Evacuate*, is the same as above, coded from 0-3 with higher values indicating a higher likelihood of evacuation. We have two primary independent variables. The first, *Diff Race Mgr.*, measures whether the respondent lacks co-ethnic representation by the city manager in the scenario (in other words, respondents are coded as a 1 if they are of a different race than the city manager in the scenario). The second, *Same Race Comm Ldr*, measures whether the respondent shares the race of the community leader (in other words, respondents are coded as a 1 if they are of the same race as the community leader in the scenario). We interact these two variables to estimate the effect of co-ethnic endorsement on evacuation decisions among respondents who are not descriptively represented by their city managers. As in Table 4,

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<sup>16</sup> Estimates generated using margins command in Stata 14.

we also interact both variables with the dummy indicator for *Not Evacuating Hurricane Irma*. We split the sample by people of color and white respondents and estimate separate models for each racial group. Figure 1 presents the results only for respondents who did not evacuate Irma given our finding of ceiling effects in Table 4.<sup>17</sup>

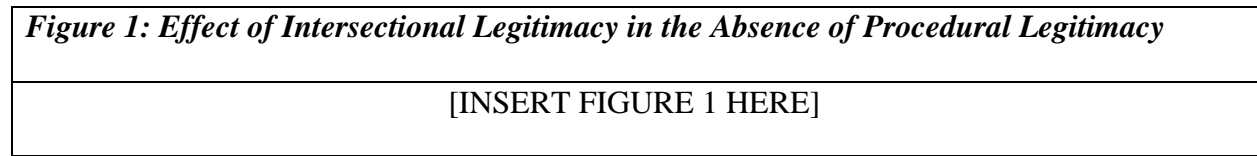


Figure 1 plots the estimated coefficients for both of our models in a single graph where the x-axis is the estimated coefficient and the y-axis denotes our two independent variables and their interaction. Consistent with our results in Table 4, people of color are less likely to evacuate when they are not descriptively represented. Among our white respondents, lack of descriptive representation has a statistically insignificant effect on the likelihood of evacuating. The presence of a co-ethnic community leader endorsement, on its own, has no statistically significant effect on an individual’s likelihood of complying with the city manager’s order to evacuate for either people of color or white respondents. The interaction term in our models indicates that among respondents of color who lack descriptive representation, the presence of an endorsing co-ethnic community leader significantly increases respondents’ likelihood of evacuation. The interaction term has no significant effect on white respondents’ likelihood of evacuating. Estimating the predicted effects for our model on the respondents of color shows effects similar to those from Table 4. When respondents of color are not treated with a co-ethnic community leader and are not descriptively represented by their city manager, they are somewhat unlikely to evacuate (1.92). When respondents of color are not descriptively represented by their fictitious city managers but there is an endorsing co-ethnic community leader present,

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<sup>17</sup> Full regression models are available in Appendix Table A2.

respondents are somewhat likely to evacuate (2.16). Clearly, the presence of a co-ethnic community leader can motivate people of color to evacuate and get themselves out of harm's way in our hypothetical scenario.

Our analysis suggests that in the absence of descriptive racial representation, people of color will confer some institutional legitimacy to government directives seeking their compliance if a co-ethnic non-governmental partner is perceived to be part of the decision-making and communication process. These results are consistent with previous literature showing when citizens perceived intersectional legitimacy increases so too does their compliance with government authority. Our experiment provides evidence that including community members that descriptively represent blacks and Latinos in government communications about emergency preparedness can convey a sense of intersectional legitimacy, especially when government officials are requesting compliance from their citizens. However, we find no support for our hypotheses among white respondents in the sample.

## **Discussion**

When do citizens comply with their local government's orders? We have theorized that descriptive representation, on the basis of race, is a powerful motivator, particularly among people of color. We predicted an increase in citizen compliance with local government evacuation orders in the context of an impending natural disaster. We have situated our argument within the broader framework of citizen compliance and institutional legitimacy. Specifically, we have shown that when city leaders are descriptively representative (invoking procedural legitimacy) of their constituents, citizens are more likely to follow directives asking them to evacuate. When city leaders are not descriptively representative of their constituents they can generate institutional legitimacy by involving descriptively representative community leaders in the decision-making process (invoking intersectional legitimacy), thereby increasing likelihood



of evacuation among citizens of color.<sup>18</sup> Our study highlights the importance of descriptive representation in American politics not just for the inclusion of all peoples within the policy making process but also, as we have shown here, potentially saving lives during times of extreme danger by increasing compliance with the directives of local public administrators. We have shown that the increased trust between citizens of color and their co-ethnic government representatives does more than foster good will between racial minorities and political institutions.

The results of this experiment also lead to specific policy recommendations for local officials. During times of natural disaster, it is important for city leaders to involve community leaders that represent various minority groups within the city. City officials should actively communicate disaster preparedness information with residents through multiple individuals, including those community leaders who represent racial or ethnic groups different than that of the city manager. By doing so, city officials can broaden the impact of their natural disaster directives, increasing citizen willingness to comply with these directives, and potentially saving lives.

Our experimental research design has strong internal validity as the random assignment of leader demographics allows us to determine how co-ethnicity affects willingness to evacuate. Although experiments often suffer from external validity concerns, we have reason to believe that our results are generalizable to important subpopulations. Our research subjects, Florida residents responding to questions about tropical cyclones less than a year after the impact of catastrophic Hurricane Irma, are a "crucial case" (Gerring, 2001; Seawright & Gerring, 2008) of

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<sup>18</sup> We find that white respondents in our sample are not affected by the presence of any community leader sharing in the city manager's call for evacuation. The underlying mechanism driving this result is unclear and would be difficult if not impossible to determine based on our experimental design and the available data from the survey. Further research is needed to better understand this result.

the broader question of how the public responds to imperative government directives during a time of crisis, both timely and illustrative of the phenomenon. Natural disasters are not distributed evenly across the United States (Griggs, 2017; NOAA, 2020; Smith, 2020). Data aggregated by the United States National Oceanographic and Atmospheric Administration (NOAA, 2020) show that between 1980-2019 "billion dollar" weather and climate disasters (i.e., events leading to total losses exceeding one billion USD) clustered in the South, Southeast, and Central states. The tropical cyclone sub-set of the billion dollar dataset shows that twenty-one of the 44 storms occurring between 1980-2019 impacted the State of Florida (the most of any states impacted; also see Griggs (2017)). The billion dollar data also show that tropical cyclones are the most costly disasters faced by Americans, accounting for 54% of financial losses and 49% of deaths (Smith, 2020). Importantly, a growing body of research suggests that the future portends increase in the frequency and intensity of these highly costly storms in Florida due, at least in part, to climate change and contaminant increases in sea water temperature (Melillo et al., 2014).

That said, we recognize that our respondents are asked to express their willingness to evacuate in a hypothetical scenario. It is possible that in a real-life emergency scenario, respondents may react somewhat differently to local government messaging about an impending hurricane due to a heightened sense of urgency. Further, our experimental design only asks about hurricane evacuations. Hurricanes are one type of natural disaster, and hurricane forecasting methods typically allow governments and citizens several days of advance notice and time to prepare. Other types of natural disasters, such as tornadoes or earthquakes, strike more quickly, and local government officials may need to act more swiftly and emphatically in communicating preparedness directives to residents.

Given the importance of this kind of communication for societal well-being, future research should examine how descriptive representation among government officials impacts residents willingness to comply with policy directives amid other types of natural disasters, in other public safety contexts such as in the aftermath of terrorism or active shooter situations, and in other public health contexts such as disease prevention (e.g., measles or other highly contagious viruses).

## **Appendix A1: Evacuation Orders from Hurricane Irma (2017)**

Monroe County Administrator Roman Gastesi:<sup>19</sup>

"We value our visitors and want them to be safe. This is the reason why we need them to calmly leave the Keys with plenty of advance notice before the storm may reach our shores." (Sept. 5, 2017)

Florida Governor Rick Scott:<sup>20</sup>

"The National Hurricane Center is reporting that Hurricane Irma is a dangerous and life threatening category 5 storm with winds up to 185 miles per hour. 185 miles per hour. Just think about that. The storm is massive and the storm surge is predicted to go for miles and miles. In some instances, it could cover homes and go very far inland." (Sept. 7, 2017)

Miami Beach, FL Mayor Philip Levine:<sup>21</sup>

"We have organized buses, trolleys, everything to make sure we can evacuate everybody from Miami Beach... I make a special appeal to our residents or any visitors that happen to be here. Get out of Miami Beach. We don't need heroes. We're all about safety, your safety. Leave Miami Beach... We need people to leave the beach." (Sept. 8, 2017)

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<sup>19</sup> <https://www.miaminewtimes.com/news/florida-keys-issues-hurricane-irma-visitor-evacuation-order-9647958>

<sup>20</sup> <https://abcnews.go.com/US/florida-governor-urges-residents-ahead-hurricane-irma-youve/story?id=49698869>

<sup>21</sup> <https://www.youtube.com/watch?v=CoQNzEkLp-4>

**Appendix A2:**

<i>Variable</i>	<i>Model 2(POC)</i>			<i>Model 3 (White)</i>		
	$\beta$	SE	P> t	$\beta$	SE	P> t
<i>No Same Race CM</i>	0.264	0.131	0.045	0.193	0.164	0.240
<i>Did not Evac Irma</i>	0.052	0.011	0.635	-0.350	0.149	0.019
<i>No Same Race CM *No Evac</i>	-0.508	0.156	0.001	-0.305	0.198	0.124
<i>Same Race Comm</i>	0.285	0.295	0.335	-0.100	0.302	0.741
<i>No Same Race CM *Same Race Comm</i>	-0.608	0.373	0.103	-0.015	0.353	0.967
<i>No Evac*Same Race Comm</i>	-0.513	0.338	0.130	-0.168	0.371	0.651
<i>No Same Race CM*No Evac*Same Race Comm</i>	1.075	0.437	0.014	0.142	0.430	0.742
<i>Constant</i>	2.115	0.095	0.000	2.183	0.123	0.000
<i>R<sup>2</sup></i>	0.029			0.078		
<i>N</i>	733			634		

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