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Tweeting for Latinos? Legislative Communication in the 115th U.S. House of Representatives

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ABSTRACT

This article explores whether legislators in the U.S. House of Representatives talk about the issues important to Latinos on Twitter. Other work has emphasized the importance of descriptive representation for the substantive advancement of the interests of minority constituents. Building on that work, I argue that Latino legislators are more likely than their non-Latino peers to discuss issues important to the Latino community. In addition, given majoritarian constraints and work showing how minority legislators are marginalized in the legislative process, I argue that minority legislators – Latinos included – are more likely to post symbolic messages than their colleagues because they are not able to change the status quo and advance the interests of their co-ethnic/racial constituents. I explore these hypotheses using data collected from the Twitter profiles of members of the 115th U.S. House of Representatives. After accounting for other factors, I find that Latino legislators are more likely to post about immigration and Hurricane Maria during the 115th Congress. I also find that Latino legislators are more likely to post symbolic messages when communicating with the public. Both of these findings corroborate the notion of minority distinctiveness and add to our understanding of Latino representation, minority behavior, and legislative communication.

Introduction

To what extent are the interests of Latinos represented in the Twitter activity of their representatives in Congress? Twitter has blossomed as a communicative platform, something evident in its adoption, usage, and amplification by members of the public and the elites that represent them (Lassen and Brown 2011; Straus et al. 2013, 2014; Williams and Gulati 2010). How legislators use the platform and what they choose to post on it can give us some insight into the priorities and motivations of those individuals. Latinos, as the largest minority group in the U.S., have commanded the attention of the media, pundits, and candidates for public

office in recent elections. Given the centrality of communication for the constituent–legislator relationship, this work explores whether the interests of Latinos are reflected in what members of Congress (MCs) are discussing on the platform. I find that Latino legislators in the House are more responsive than their non-Latino counterparts on immigration and Hurricane Maria during the 115th Congress (2017–2018). I also find that Latino legislators are no less likely than their non-Latino counterparts to post policy-related messages, but they are more likely to post symbolic tweets on the platform. In line with the literature on minority representation, this work supports the idea that descriptive representation is important for the substantive representation of minority groups.

In the sections that follow, I first explore what we know about Latino interests and representation in Congress. I then discuss legislative communication and its role in representation before transitioning to what we know about Twitter and my methodological approach. The last things I explore are the results and discussion stemming from them.

Theoretical foundation

Latino representation

The Latino population in the U.S. has experienced significant growth since the 1970s, something that has not gone unnoticed by the American public or scholars. Welch and Hibbing (1984) explored the question of the substantive representation of the Hispanic population in Congress at a time when Latinos made up less than seven percent of the overall population and held only a handful of seats in the House of Representatives. Things have significantly changed since then, with forty-six members¹ in the House and close to nineteen percent of the total population identified as Hispanic in the present day.

However, even in the face of increased descriptive representation (i.e., more Latino representatives in office), the core question motivating earlier work remains: to what extent are the interests of the Latino population (i.e., substantive representation) reflected in the behavior of their representatives in office? Much work has been devoted to that core question, and the collective results of those different inquiries are simultaneously concerning and a source of inspiration for future generations. On the one hand, work consistently shows that Latinos are at a representational deficit compared to non-Latinos (Casellas 2010; Hero and Tolbert 1995; Griffin and Newman 2008; Knoll 2009; Pleites-Hernandez 2019). Not only does descriptive representation in state legislatures and Congress lag behind the size of the Latino population, so does the substantive representation afforded to them by their elected officials, which means that Latinos in the public are less likely to have representatives that are close to them

ideologically but also that they are less likely than non-Latinos to have their preferences reflected in the voting behavior and other legislative activity of their MCs. On the other hand, though analyses have been significantly limited by the number of Latino legislators to draw inferences from, the available work suggests that descriptive representation can serve as a mechanism to lessen (or close) that gap in the representation afforded to the Hispanic population. Indeed, work at various stages in the legislative process [e.g., agenda setting (Bratton 2006; Rocca and Sanchez 2008; Wilson 2010); committee work (Minta 2013; Rouse 2013); roll call votes (Casellas 2010; Griffin and Newman 2008)] has documented the distinctiveness of Latino legislators and their dedication to advancing the interests of their co-ethnic constituents in Congress.

As it currently stands, Latinos – even with the largest congressional Hispanic membership in our nation’s history – are still a numerical minority within the legislature and within the respective parties in it. This means that in the absence of cross-racial/ethnic coalitions, the issues of Latinos are less likely to be reflected in the outputs of Congress, as evidenced in recent scholarship on roll-call, ideological, and policy congruence (Griffin and Newman 2008; Pleites-Hernandez 2019). Though important, this research on roll call votes is inherently limited – not only by the historically low numbers of Latino legislators available to draw inferences from, but also by the institutional realities that influence the lawmaking process and the things those individuals vote on in Congress. The work of legislators, Latinos and otherwise, extends beyond those votes, however; it encapsulates other behavior, relationships, and dynamics that we can and should study (see Pitkin 1967). Indeed, scholars have demonstrated that there are plenty of non-roll call voting responsibilities and activities that come with the job, such as district casework, oversight in committees, legislative communication, and community outreach, which are all places where we can gain some insight into how legislators are (or are not) working for their constituents. The present work focuses on one aspect of how legislators represent their constituents: in their communication. On this front, this work explores legislative communication as a tool used for: communicating legislative productivity with constituents, connecting with those communities on more than a superficial level, and trying to influence the legislative agenda in a way that substantively advances the interests of their constituents.

Latino public opinion and interests

Research on Latino public opinion has demonstrated that there are differences between the Latino and non-Latino populations (Barreto and Segura 2014; Griffin and Newman 2008; Leal 2007) and that there’s also

a divergence in the issues that both groups prioritize (Barreto et al. 2018; Leal et al. 2008; Rouse 2013). In addition to immigration, there are others, such as bilingual education, health care, the economy, crime, and income inequality, that have been identified as those more important to Latinos relative to other groups (Barreto et al. 2002; de la Garza et al. 1992; Martinez-Ebers et al. 2000; Wallace 2014).² None of those issues are of concern *only* to Latinos, but they are amongst those that this segment of the population would like to see addressed and, as alluded to above, in many instances, the positions taken by Latinos – relative to non-Latinos – are fundamentally different. We know that these differences in opinion also make their way into the policy arena, with Latinos less likely to accumulate “policy wins” than their non-Latino white counterparts (Griffin and Newman 2008; Pleites-Hernandez 2019).

Latinos, as a result of the size of the immigrant population and their ties to the U.S.-born Latino population, have a vested interest in the advancement of these issues, even if they are not issues only important to them. On immigration, for example, undocumented immigrants of Latino origins constitute the largest segment of the unauthorized population (Zong, Batalova, and Burrows 2019), which means that they have plenty of reasons to want to see this issue addressed by the government. Education is another issue important to Latinos because they are more likely to have English as a second language than their non-Latino Anglo counterparts and are also more likely to be on the negative end of school funding disparities (see Baker et al. 2020). As for health care, Latinos tend to be lower on the socioeconomic spectrum than non-Latino whites (Fontenot et al. 2018) and are also dealing with an aging undocumented population (Martinez-Ebers et al. 2000; Trevelyan et al. 2016), which helps explain their prioritization of the issue relative to whites and other non-Latinos. There are also other issues that are not fixtures on the agenda that also command the attention of Latinos in the electorate. For example, amongst other developments during the 115th Congress, the disaster wrought on Puerto Rico by Hurricane Maria, and arguably the federal government’s inaction, gave the issue a place on the agenda (Shah, Ko, and Peinado 2017). This is one issue that might be particularly important for the Hispanic community at large, if not a subset of it that has a more direct connection to Puerto Rico (Barreto and Manzano 2018). Irrespective of why an issue is more salient to Latinos, there are clearly several issues that are prioritized relative to non-Latinos, and whether those issues get addressed or not can have an impact on the quality of representation afforded to Latinos.

Representation via legislative communication

Substantive representation, as defined in the scholarship, refers to the advancement of the interests of others – here, constituents (Pitkin 1967). Though some conflate this with other types of representation, given their interconnectedness in practice, they are theoretically distinct concepts. Advancing the interests of constituents does not require descriptive representation, and neither does offering symbolic representation – defined here as “legislative activity undertaken with the objective of giving psychological reassurance to constituents that representatives are working in their interests and are responsive to their needs without the condition that measurable policy outcomes be an immediate goal” (Sinclair-Chapman 2002, p. 11). Both substantive and symbolic action can exist without descriptive representation, at least in theory. However, decades of scholarship on minority representation, in different parts of the legislative process point to the importance of descriptive representation for substantive representation and the use of symbolic responsiveness in the place of substantive action. Here, I explore the relationship between these different types of representation with respect to the Latino population.

As mentioned above, research has documented the various ways in which Latino legislators represent their co-ethnic constituents in office. Whether it’s on the front-end of the process in bill introduction and (co-) sponsorship (Wilson 2017), in the committee process (Rouse 2013), in roll call voting (Pleites-Hernandez 2019), or oversight (Minta 2013), the consistent message that comes out is that Latino legislators work on behalf of their Latino constituencies. While these efforts do not, on their own, guarantee that the lives of Latinos will improve, these efforts bring forth different voices, perspectives, and dynamics into the legislative process that likely would not be present in the absence of these minority legislators (Mansbridge 1999). Without these voices in the process, given what we know about the representational deficit faced by Latinos in the public, it is unlikely that these perspectives and issues important to Latinos would be part of the process in the first place (Wilson 2017). By taking a more expansive view of substantive representation that encompasses more of what legislators do to represent their constituents beyond roll call voting, this work explores whether Latino legislators actually “talk the talk”.

Communication is an essential part of the constituent–legislator relationship. The extent to which legislators are attuned to the interests of the communities they represent can impact the quality of representation afforded to those groups. Legislators are limited in their time, resources, and cognitive capacity, which means that what they choose (e.g., a tweet on an important vote, a picture of their pet, or a meeting with the president) to communicate with constituents is what they view as important

and/or they perceive it to be important to constituents. This work is in the vein of Mayhew (1974) and Fenno (1978), that views members of Congress as very motivated to gain and keep the favor of their constituents, almost to the point of seemingly self-induced paranoia and distress, and though a lot has changed, particularly on the technological front, since those works were published, more recent work confirms the same behaviors and dynamics discussed then [e.g., communication: on the internet (Adler, Gent, and Overmeyer 1998; Gulati 2004) and on Twitter in the present day (Russell 2021)].

Communication can also serve another purpose, it can serve as symbolic representation (see Edelman 1964; Eulau and Karps 1978; Hill and Hurley 2002).

While symbolic representation can include a multitude of actions, here it is referring to – as Sinclair-Chapman (2002) puts it – actions that are taken to show constituents their representatives are aware of their interests even if the policy outcomes do not reflect those actions or commitment in turn (p. 11).³

Legislators can use communication as a tool to keep constituents in the loop on their efforts, but those efforts are often either intentionally sidelined (e.g., Hawkesworth 2003; Pearson and Dancy 2011; Peay 2021) or succumb to the institutional realities of the day and the nuances of the political process (Aldrich and Rohde 2000; Cox and McCubbins 2005; Lebo, McGlynn, and Koger 2007). Irrespective of why many of the bills introduced, (co-)sponsored, and worked on by Latino and other minority legislators do not make it to, or off of, the president's desk does not change the reality that is the status quo. While some legislators might use symbolic behavior as part of a variety of strategies to connect with constituents, or mere gesturing, based on the available work, it seems as if many might use it as a means to cover for their general inability to turn all of the public and behind-the-scenes work into tangible policy wins (Barnett 1975; Sinclair-Chapman 2002; Wilson 2017; Tate 2001). Indeed, the following quote by Brown, Jackson, and Strawbridge (2021) on the Congressional Black Caucus' (CBC) efforts supports this idea:

As a caucus made up of Democrats who were the minority party in government during the 116th Congress, the CBC members lacked institutional power to push their policy preferences into law. Thus, their discussion of the disparate impact COVID-19 is having/has had on Black communities is a symbolic form of political representation as they were unable to alter legislation to effectively address racial disparities in COVID-19 relief legislation (p. 77).

The members of the 116th Congress' CBC are not alone in their positionality within the legislature, nor is this behavior confined to that legislative session (see Tillery 2021). Although some might question the sincerity of,

or motivations behind, these symbolic acts, plenty of work demonstrates how prevalent they are in legislative communication and the positive impacts that they can have on constituents' attitudes about representatives and government more broadly (Banducci, Donovan, and Karp 2004; Hayes and Hibbing 2017; Sinclair-Chapman 2002; Stokes-Brown and Dolan 2010; Tate 2001).⁴

So, we see that legislative communication can serve as a tool to advance the interests of Latinos in the broader legislative process and push the public discourse, as well as a tool for demonstrating a commitment to the interests of Latinos in the electorate. Whether this actually manifests itself (or not) in practice is an empirical question – one that I explore by looking at legislator communication on Twitter.

Why Twitter?

While there is variation in how (and how often) the platform is used by members of Congress, all representatives in both chambers have a Twitter account and, as a result, the means to reach out to constituents and the American public in an instant (Kessel 2020). Not only can they reach those on Twitter [close to a quarter of the adult population (see Odabas 2022)], but they can also reach individuals outside of it.⁵ Several recent works highlight the role that Twitter plays for reporters and news outlets as a source of journalistic reporting (see Kapidzic et al. 2022; Oschatz, Steir, and Meier 2021). Furthermore, it is not uncommon in the present day for a tweet to make the evening news or to be reposted on other social media platforms; illustrating its reach beyond the confines of its frequent users. In addition, Twitter discourse – while detached from the formal legislative and policy-making process – can influence what makes it on the political agenda, which speaks to its importance more broadly (Shapiro and Hemphill 2017; Straus and Williams 2019). For better or for worse, what happens on Twitter does not always stay on Twitter.

We also know that a significant number of those who are on Twitter use the platform for politics. Twitter is unquestionably first, and foremost, a social media platform. Some may use it for viewing memes or posting cat pictures, but it is also used for political purposes [e.g., activism (Tillery 2021); political messaging (Hemphill and Roback 2014); as a news consumption source (Mitchell, Shearer, and Stocking 2021)]. For example, as scholars looking at the development of the Black Lives Matter movement have noted (e.g., Dancy and Masand 2019; Tillery 2021), Twitter has become a key venue for political discourse and organizing in the electorate, and, arguably more importantly for the purposes of this work, a place that puts legislators amidst that discourse and development of social policy.

Twitter is a place described by Tillery (2021) as “a space where African Americans are deeply engaged in a truly national conversation about both the meaning of race and race relations” (p. 3). We have some sense, rooted in the literature, that this platform is a space for politics, but our understanding of how legislators use this platform to communicate with constituents is significantly limited, especially as it relates to the Latino population. Given the size of the population at large, and the presence they maintain on the platform⁶, it seems like a prime venue for engagement by members of Congress and other politicians that represent – or are interested in representing – Latinos in the electorate.

Determinants of behavior on Twitter

Different variables are used to explore whether individual characteristics, district demographics, or a mixture of both are driving legislative communication on Twitter. Whether the focus is on explaining variation in the type of tweets (i.e., policy, symbolic) or issue areas (i.e., immigration, education) that legislators are posting about on Twitter, there is a need to account for both the ethnicity of a given legislator and the size of the Latino population. Latino legislators – because of their own backgrounds, constituent interactions, and shared experiences with the Latino constituents they represent – may be more likely to speak about the issues pertinent to the broader Latino population (Mansbridge 1999). Work on Latino legislator behavior on Twitter (e.g., Gervais and Wilson (2017) finds that Latinos were more likely to post Spanish tweets and messages that directly referenced the Latino population than their non-Latino peers) and evidence outside of it supports this idea (e.g., Wilson (2017) shows Latino congresspersons were more likely than their colleagues to introduce and sponsor bills on immigration, education, and other issues salient to Latinos in the electorate). Similarly, for the reasons mentioned above (e.g., majoritarian dynamics), Latino (and other minority) legislators should be more likely to resort to symbolic representation than their white colleagues in the legislature (Sinclair-Chapman 2002; Tillery 2021; Wilson 2017). Speaking to the issues salient to the Latino population, or even working to give psychological reassurance to Latino constituents via symbolic representation, does not require shared ethnicity. Indeed, at least theoretically, Latino and non-Latino legislators should both be able to advance the interests of Latinos, and the analytical approach here allows for that exploration. Though the key focus here is on legislator ethnicity, prior work has also noted that there are other legislator characteristics (e.g., gender and partisan identification; see Ardoin 2013; Evans, Cordova, and Sipole 2014; Stout, Coulter, and Edwards 2017; Wagner, Gainous, and Holman

2017) and district-level factors (e.g., size of the minority population; Ardoin 2013; Gervais and Wilson 2017; Stout, Coulter, and Edwards 2017; Tillery 2021) that affect legislative behavior on Twitter and are incorporated as a result.

Hypotheses

The following hypotheses are informed by the literature on minority legislative behavior and that on legislative behavior on Twitter.

Hypothesis 1: *Latino legislators are more likely than non-Latino legislators to tweet about issues important to Latinos.*

Hypothesis 2: *Minority⁷ legislators are more likely than non-Latino legislators to post symbolic tweets.*

Research design and methodology

Data

Given the focus of the paper, I chose to study the U.S. House during the 115th Congress (2017–2018), as it has the higher number of Latino legislators of the two chambers in Congress, and plenty of variation in district demographics to explore.⁸ In terms of legislative productivity, at least on paper, the 115th Congress surpassed many of the recent congresses that preceded it, with almost four hundred and fifty laws passed (DeSilver 2021). This legislative session was one in which the Republican party held a majority in both chambers and had control over the presidency; a feature that is particularly important for this work, as it is one where we would expect different dynamics and behavior between the parties and their members (e.g., members of the minority party relying on different messaging tactics). This session was marked by key issues such as: tax reform, the repeal of the Affordable Care Act, hurricane disaster relief, and the opioid epidemic (Mayhew 2019). There were also plenty of other relevant issues, but for which there was no substantive congressional action, such as gun control, immigration, health care affordability, and climate policy, to name a few (Jackson and Lohr 2018).

To explore legislative behavior on Twitter, I collected almost two years' worth of tweets for each member of the 115th U.S. House of Representatives using Python and the Twitter application programming interface (API). I scraped tweets from the official profiles (i.e., those linked to legislators' websites) from the start of the legislative session until the first week of November in 2018.^{9 10} That span of almost 2 years yielded over 493,000 tweets, with an average of over 1,100 per legislator (see [Table A1](#) in

Appendix).¹¹ Though tweets are not as long as press releases or newsletters, coding almost half a million tweets is no easy feat. Instead of coding each one of those tweets by hand, I chose to rely on a method that is increasingly used by scholars in the field: supervised machine learning (see Grimmer and Stewart 2013; Grimmer 2016; Lassen and Bode 2017). This method, though computationally intensive, is useful for large-scale projects (like those being tackled by researchers in this new era of big data) and fairly intuitive. The method relies on researchers to train algorithms on a subset of the data, which then allows the software to code the rest of the data using the different trained algorithms. Using this technique, I hand-coded a random sample of over 5,000 tweets, which I then used to train three algorithms (i.e., maximum entropy, support vector machine, and glmnet; see Jurka et al. 2013, 2015). Those algorithms were then used to code the rest of the tweets using an R program called *RTextTools* (see Jurka et al. 2013), which has been used to take on projects like this one (see Hemphill, Otterbacher, and Shapiro 2013; Lassen and Bode 2017). Pre-analysis data processing techniques (e.g., stemming, removal of unnecessary information.) were modeled after existing procedures in the literature (see Grimmer and Stewart 2013; Welbers, van Atteveldt, and Benoit 2017 for a more nuanced discussion on data processing; see also Lassen and Bode 2017).^{12,13}

The procedures outlined above allowed me to code each tweet based on whether it was policy-oriented, event-related, or otherwise, a categorization scheme I will discuss below. However, I am not only concerned with the nature of the tweets posted by legislators, but I also want to know what they are tweeting about, which entails a different coding strategy. To explore whether legislators are tweeting about issues important to Latinos, I go back to the unprocessed master list of tweets and use keywords to identify tweets for each of the three issue areas: immigration, health care, education, and Hurricane Maria. On immigration, for example, I use the following keywords to find tweets regarding this topic: “immig,” “daca,” “undoc,” “dreamer,” and “green card,” amongst others. I also, for comparison purposes, computed variables for other relevant issues and events that took place over the 115th Congress (i.e., the 2017 tax reform, the opioid crisis, and Supreme Court nominations). Here, I am solely concerned with what legislators are talking about, which is why such a simple categorization scheme is useful.¹⁴

Variables

The main categorization scheme¹⁵ used here for the non-issue-specific dependent variables is adapted from Lassen and Bode’s (2017) work (see also Golbeck, Grimes, and Rogers 2010; Tillery 2019). The *policy* category

captures explicit mentions of roll call votes and/or pieces of legislation. The *symbolic* category captures tweets where MCs demonstrate an awareness of the issues important to minorities without an explicit reference to policy or a roll call vote. The *partisan* category captures tweets that use partisan language and (or) the explicit reference to either of the political parties. The *appeal to action* category captures tweets where legislators attempt to get viewers to do something, be it repost a tweet, read a newsletter, or call a hotline. The *events* category has tweets that explicitly mention an upcoming event, campaign-related or otherwise. The *media* category houses tweets where legislators share general information and media (e.g., pictures, articles, videos, and links) and messages that do not fall into any of the other categories (see [Appendix A](#) for the text of sample tweets).¹⁶

With the tweets identified and categorized, I use the raw number of tweets to compute the proportion of tweets in each category (or issue area) for each legislator, and these proportions serve as the dependent variables for this study (see [Table A2](#) for descriptive statistics). For the issue areas, I compute the proportion of tweets in each policy area described above.¹⁷ The key explanatory variables are legislator race/ethnicity and the size of the Latino population in each legislator's district. The former is a binary variable (*Latino/Black/Asian*) that takes a value of one when the legislator is Latino (Black, or Asian, respectively), and the latter is the percentage of the Latino population (*% Latino*) in each district.¹⁸ In addition to ethnicity, other legislator characteristics included in the models as controls are *age*, gender (*female*), and partisan identification (*Democrat*).¹⁹ At the district level, the size of the foreign-born population is also included where appropriate (i.e., immigration)²⁰ in the modeling, as it can potentially help explain variance in legislative behavior.

Modeling

As mentioned above, legislators vary in their propensity to post on Twitter. While operationalizing the dependent variables as proportions helps account for this methodologically – when paired with the presence of zeros (i.e., no tweets in a particular category) for certain legislators – it also creates the need for specialized modeling (see Ferrari and Cribari-Nieto 2004).²¹ A fractional response generalized linear model (Williams 2019; see also Papke and Wooldridge 1996; Wooldridge 2011) is used here because it allows for the proper modeling of proportions that include zeros without the imposition of assumptions that come with a zero-one inflated beta distribution model or other issues with count models (Buis 2010).^{22,23}

Results

The purpose of this paper, as mentioned above, is twofold: finding out whether the interests of Latinos are reflected in the messages posted by legislators and whether there are differences in how legislators choose to communicate with constituents attributable to their race/ethnicity. In the following section, I will look at this with respect to the issues (e.g., immigration), and then I will explore legislator distinctiveness in how they post on Twitter. This work operates under the assumption that the issues legislators are discussing on Twitter provides constituents with an idea of the priorities of the individuals that represent them. This does not capture whether legislators are speaking in support (or opposition) of these issues, but it does provide us with a basic idea of what is being brought to the discussion of ideas, which is generally a precursor to more substantive action in the legislative process.

Unlike ordinary least squares estimation, the coefficients from the fractional response generalized linear models are not readily interpretable (see Williams 2019). Therefore, the results show the marginal effects of the independent variables on the dependent variables, and the figures display the predicted proportion of tweets in a given category at different levels of the independent variables. Therefore, the focus here is on explaining the effects of the independent variables on the dependent variables by looking at the direction and size of those effects and not solely the number of tweets when moving from one level to another of a given independent variable.

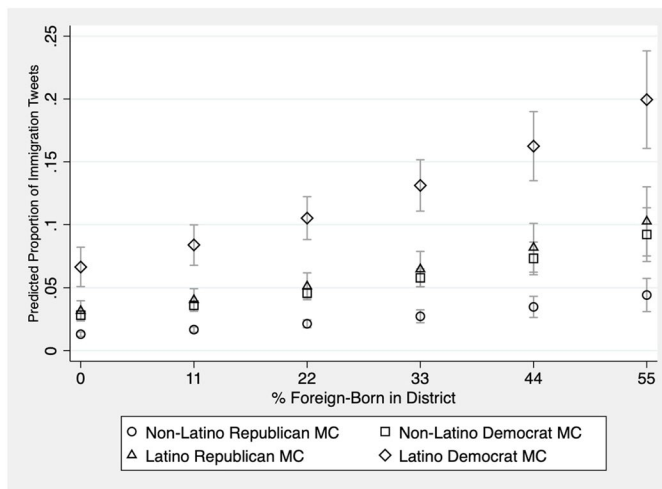


Figure 1. Predicted immigration tweets based on legislator ethnicity and party.

Table 1. Fractional regression models.

Independent variables	Proportional dependent variables					Symbolic
	Immigration	Education	Health Care	Maria	Policy	
Latino#	0.0308*** (0.0047)	0.0024 (0.0044)	0.0005 (0.0074)	0.0048* (0.0024)	0.0062 (0.0123)	0.00096* (0.00057)
Black#	0.0011 (0.0037)	-0.0048 (0.0040)	-0.0095*** (0.0033)	0.0011 (0.0012)	-0.0404*** (0.0068)	-0.00003 (0.00039)
Asian#	0.0055 (0.0069)	-0.0031 (0.0058)	0.0047 (0.0084)	0.0038* (0.0022)	-0.0010 (0.0113)	0.0002 (0.0006)
Age	0.0002 (0.0001)	-0.000002 (0.00009)	0.0002* (0.0001)	0.00003 (0.00005)	0.0001 (0.0002)	0.00002* (0.00001)
Female#	-0.0016 (0.0029)	0.0085*** (0.0028)	0.0031 (0.0028)	-0.0003 (0.0011)	0.0145*** (0.0055)	0.0014*** (0.0003)
Democrat#	0.0242*** (0.0033)	0.0041* (0.0024)	0.0339*** (0.0031)	0.0006 (0.0010)	-0.0117* (0.0056)	0.0052*** (0.0005)
% Latino	-	-0.00006 (0.00007)	-0.0002 (0.0001)	0.00006* (0.00002)	-0.0002 (0.0002)	-0.000001 (0.00001)
% Foreign Born	0.0007*** (0.0001)	-	-	-	-	-
Constant	-4.6087*** (0.2200)	-3.0586*** (0.1293)	-3.9569*** (0.1946)	-5.3852*** (0.3595)	-1.9158*** (0.1102)	-7.8417*** (0.2867)
N	428	428	428	428	428	428
Pseudo R ²	0.0646	0.0010	0.0220	0.0120	0.0026	0.0596

The estimates shown are marginal effects and the standard errors are in parentheses.

#Estimate denotes a discrete change of binary variable from zero to one.

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

On the issues: substantive representation

In line with expectations, Latino legislators are more likely to post about immigration than their non-Latino colleagues – within both parties. [Figure 1](#) shows the expected proportion of immigration tweets by legislator ethnicity and partisan affiliation (see also [Table 1](#) for regression results²⁴). Here we can see that Latino legislators, particularly Democrat Latino legislators are more likely to post more immigration tweets than their non-Latino Democrat and non-Latino Republican colleagues, respectively – and this is across different proportions of the foreign-born population in each legislator’s district. In a district where the foreign-born population makes up more than half of the population, we would expect about a threefold difference between non-Latino Republican legislators and their Latino Democratic peers. For an average legislator that tweets about 1,100 times in the period studied, that expected proportion would amount to 220 tweets on immigration.²⁵ However, it’s not solely Latinos or Democrats; though they are the lowest group on the figure, non-Latino Republican MCs are also more likely to tweet about immigration in districts with larger foreign-born populations. In a similar fashion, the results from the regression on the proportion of Hurricane Maria tweets ([Table 1](#); column 4) show that legislator ethnicity is an important predictor of legislator behavior. Though the proportion of expected Hurricane Maria tweets rises as the percent of Latinos increases in a district, it is generally higher for Latino legislators than their non-Latino peers (see [Figure 2](#)). It should also be noted that of all the different regressions, it is only in the one for Hurricane Maria that partisanship does not seem to factor into the propensity to post on the issue. Indeed, here ethnicity alone appears to

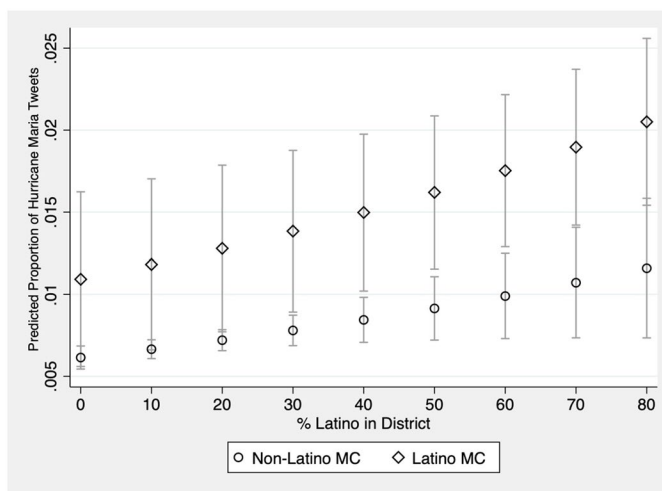


Figure 2. Predicted hurricane Maria tweets based on legislator ethnicity.

be the central explanatory factor. This responsiveness demonstrates just how important descriptive representation and district composition are for understanding individual legislative behavior.

That distinctiveness between Latino legislators and their non-Latino colleagues is not present when looking at tweets about health care or education, however. The regressions in [Table 1](#) show no discernable differences in legislators' propensity to post on those issues attributable to individual ethnicity – which goes against the first hypothesis. Neither Latinos nor any other group was distinctive in their propensity to post on education-related matters. Democrats overall were slightly more likely to post about education than Republicans – with 0.049 and 0.045 being the predicted proportion of tweets for members in each of the two parties, respectively, a difference that for the average legislator²⁶ amounts to about four-and-a-half tweets. Latinos were also not more (or less) likely than their co-partisans to post about health care. Both of these results were different from what other work looking at Latinos in Congress would lead us to expect. Along with immigration, according to Wilson's (2017) exploration of Latino-interests bills during the 109th and 110th Congresses, health care and education were in the top five topics of bills introduced during each of those sessions (p. 139). Wallace (2014) also shows that Latino representatives during the 111th Congress were more likely to co-sponsor immigration and education bills when compared to their non-Latino colleagues. We do see that Democrats on the whole were a lot more likely (a difference of almost forty tweets for the average legislator) to post about health care than Republicans (see column 4). Some of these tweets could have been reactionary or a means to call attention to the Republican efforts to repeal the Affordable Care Act, a cornerstone of the Republican party's agenda going into the 2016 elections.

Part of the results that are present could be attributed to the relatively pressing nature of the issues over that time period and the limited capacity of legislators. Take immigration, for example. It was one where even though no substantive action was taking place in Congress, there were significant changes and tangible threats to the foreign-born community through executive actions (e.g., the “Zero Tolerance” policy, the attempted dissolution of the Deferred Action for Childhood Arrivals program). In July of 2018, immigration was identified as the most important problem by Americans – a double-digit high-point that eclipsed that of the 2006 immigration protests in response to the “Sensenbrenner Bill” and other proposed policies (Newport 2018).²⁷ Similarly, Hurricane Maria – and all the havoc it wrought on the people of Puerto Rico and its infrastructure – was likely more pressing than some of the other problems and challenges on the horizon affecting Latinos. The results could also be attributed to the limited time and resources at the disposal of legislators. Although

Twitter communication is viewed as important here, it is not all MCs do as part of their jobs or other legislative-related efforts.

Differences in the nature of posting on twitter

The analyses above provide some support for the idea that Latinos may be more responsive to key issues facing the Latino community than their non-Latino counterparts. However, looking at the issues explored gives us an incomplete picture of legislative behavior. Indeed, if, as the literature shows, there is distinctiveness in how minority legislators approach the lawmaking process, then that may also extend to their communicative efforts. No difference in the likelihood of posting policy-related tweets is present, however, which goes against what would be expected given majoritarian dynamics. Indeed Rocca and Sanchez (2008) show that Latino and Black legislators were less likely to introduce bills when their party was not in control, which should, logically, extend to their communicative efforts.²⁸ Wilson's (2017) work also shows that Latinos were less likely to introduce bills on substantive Latino interests during the 109th and 110th, and more likely to introduce symbolic legislation by comparison – again, leading to the expectation that policy might be less central to their communication efforts. While there's no difference in Latino legislators' propensity to post policy-related messages, both Black and Democrat MCs were less likely to post these types of messages (see Table 1; column 5). The former is consistent with recent work, which shows that legislation was one of the lowest (i.e., 7% of all tweets) topics discussed by the Congressional Black Caucus during the 113th Congress (see Tillery 2021,

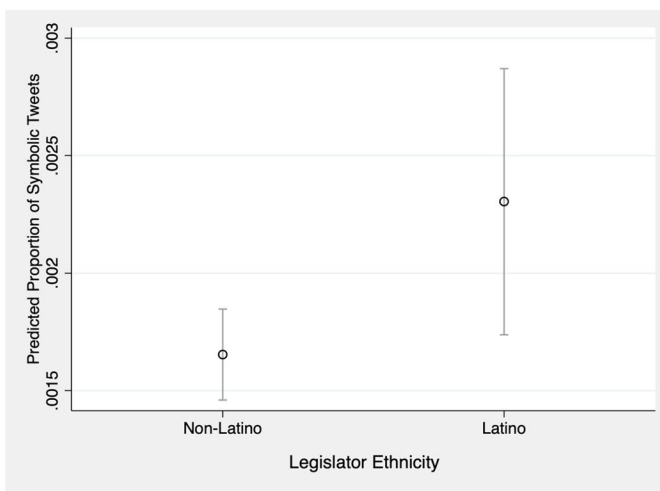


Figure 3. Predicted symbolic tweets based on legislator ethnicity.v

p. 10). The latter might be attributable to the fact that Democrats were the minority party under a Republican trifecta (i.e., control of both chambers of Congress and the presidency).²⁹

When compared to the other categories, symbolic tweets were unexpectedly low given estimates from recent work.³⁰ Nevertheless, I find that Latino legislators are more likely than their non-Latino peers to post symbolic messages on Twitter (see [Figure 3](#)). Latino MCs are expected to post about 2.5 more symbolic tweets than their non-Latino peers. Though this pales in comparison to other findings like those for immigration above, it is close to what other researchers exploring minority activity on Twitter have found. For example, Stout, Coulter, and Edwards (2017) find that, on average, Black legislators used the “#blacklivesmatter” hashtag about 2.7 times over a period of close to a year and a half (p. 500). Similarly, Gervais and Wilson (2017) find an average of 2.4 tweets on immigration by MCs during the 112th Congress. Consistent with other work on Latino legislative behavior, and that on minority behavior more broadly, we see that Latino legislators use symbolic tweets as part of their representational toolkit and, in doing so, add to the symbolic representation afforded to their co-ethnic constituents.

Of note is the finding that both female and Democrat legislators were also more likely to post symbolic messages than their respective peers on Twitter (see [Table 1](#)). Whereas women are historical minorities in the legislature, in the 115th Congress, a majority of them – by being part of the Democratic party – were also a minority in the partisan sense (Congressional Research Service 2018).³¹ Those two realities may have compounded to a heavier reliance on symbolic communication by female legislators in this time period. By similar logic, Democratic legislators in the minority party may have felt more pressure to reassure constituents that they were aware and fighting for their interests, especially because of fewer victories to lay claim on the policy front (see [Table 1](#)). These dynamics are something that should be explored in future work more directly.

Conclusion and discussion

The results here provide some support for the notion that Latino representatives are more responsive than their non-Latino colleagues, highlighting the importance of descriptive representation for the advancement of issues important to their co-ethnics in the public. On the topics of immigration and Hurricane Maria, Latino legislators seemed to be the most responsive, even after accounting for other factors like partisanship and district composition. However, that responsiveness was not present on two other issues that are also particularly important to the Latino public: education and health care. Though the exact reason why these issues were

not discussed more by Latinos than their colleagues is beyond the scope of this work, it does seem like part of that null result could be attributed to the relatively pressing nature of immigration and the disaster in Puerto Rico in comparison. Future work should explore more directly what accounts for variation in legislator attention to issues before Congress.

Though the relatively low number of Latino legislators in Congress was expected, the lack of symbolic tweets was not. The former is something that seems to be progressively rising in each subsequent congressional session; whether the latter also increases is yet to be seen. This work is limited in the inferences that can be made with the current analytical approach, as it merely captures attention and style, not the sentiment of those messages. Future work can build on the current approach through the expansion to more legislative sessions and the inclusion of sentiment and visual analysis. Nevertheless, even in the face of those limitations, this work advances our understanding of Latino representation, minority behavior in Congress, and legislative communication more broadly.

The style analysis demonstrates that not only are there differences in the issues that minority legislators focus on, but there are also some differences in how they approach that messaging. Indeed, the results above show that Black legislators are less likely to post policy-related messages than their non-Black colleagues, which likely speaks to the inter- and intra-party majoritarian dynamics that work to stunt their formal legislative efforts (see Peay 2021). The results also show that Latino legislators were more likely than their non-Latino colleagues to post symbolic messages, which comports with other work on minority behavior in Congress, demonstrating a different way of navigating the legislative process as a numerical minority – irrespective of whether one party is in control of Congress or the other. The lower propensity of Black legislators to post policy-based tweets along with other work on Black MCs on Twitter (e.g., Dancey and Masand 2019; Tillery 2021) both lead to the expectation that these individuals would also be more likely to post symbolic messages than their non-minority counterparts, but that does not manifest itself here. Future work incorporating more issues and legislative sessions might be better suited for addressing these unexpected results. Still, the core idea that minorities behave differently than their non-minority colleagues has some support in this work, and the findings here add to our understanding of legislative behavior more broadly.

Notes

1. Thirty-seven in the House during the 115th Congress.
2. Both Latino Decisions polls (Baretto et al. 2018; Barreto 2019) and Latino interest group ((Sanchez 2016; Vargas 2016) publications (i.e., the National Association of

Latino Elected Officials and the National Hispanic Leadership Agenda) demonstrate that certain issues (e.g., immigration, education, etc.) are important to Latinos.

3. See verbatim quote in section above.
4. Whether or not symbolic communication is truly valued by minority constituents is arguably less important within the context of this work because irrespective of that, we still see many legislators engage in various symbolic acts. If nothing else, the ways in which legislators choose to split their time and communicative efforts suggests that they view it as important or necessary, as it is otherwise difficult to explain why they would go through the trouble of doing so.
5. In addition, we know that political figures make up about a fifth of the accounts that have large followings on Twitter (Bestvater et al. 2022) and that a non-trivial number of online users follow at least one member of Congress (Barbera 2014).
6. According to recent estimates, Latinos make up around a third of all individuals on Twitter (Beniflah 2018; see also Wojcik and Hughes 2019).
7. This paper is focused on Latino representation, but the expected behavior is something that should be apparent in other minority groups in Congress, according to prior work.
8. Only four Latino legislators served in the U.S. Senate during the 115th Congress.
9. Tweets were collected from the start of the session until the week of the U.S. national elections in 2018.
10. I supplement this data with legislator characteristics from legislator profiles (and online sources) and the U.S. Census Bureau's 2017, 1-year American Community Survey (ACS) estimates.
11. A total of 7 legislators were excluded from the analyses documented below: five members (Clay Higgins (LA-3rd), Jim Bridenstine (OK-1st), Pat Meehan (PA-7th), Rob Bishop (UT-1st), and Evan Jenkins (WV-3rd)) were excluded for a lack of total tweets and two more members (Reps. Markwayne Mullen (OK-2nd) and Tom Cole (OK-4th)) were excluded because they were the lone Native American members in the House at the time and well below what would be needed for sub-group analyses.
12. Once the algorithms were trained, a fivefold cross-validation method was used to test the algorithms. This means that the trained data was tested by partitioning it into five random sub-sets and those different configurations were tested for accuracy with the hand-coded data (see Lassen and Bode 2017). Individually, no algorithm performed better than 62%, but when at least two were in agreement, they coded about 99% of the data.
13. I also translated the tweets not posted in English. The majority of these tweets were presenting distinct messages, not simply translating a similar tweet in English.
14. There are issues that never get addressed in the formal legislative process, which likely speaks to the majoritarian and partisan processes that take place in the institution. However, on Twitter legislators have the ability to address any issues they want. A failure to do so can be viewed as a strong signal to constituents that those issues aren't important or relevant.
15. Any given tweet under this scheme can only fall into one of the six, mutually exclusive categories.
16. While not all of these categories for types of tweets discussed here are used for the analyses, collectively, they provide a better sense for how legislators used the platform and better help contextualize their communicative efforts.
17. Each of those dependent variables, for immigration, education, health care, and Hurricane Maria are calculated by identifying how many tweets of the total count

fall into those individual areas. These issue area dependent variables were constructed independent of those by tweet type (i.e., policy, symbolic, etc.). The codes for issues are not mutually exclusive.

18. Legislator characteristics (i.e., race/ethnicity, age, party identification) were taken from a data set composed by Stephen Wolf (2017).
19. Party identification is a binary variable that takes the value of 1 when the MC is a Democrat and 0 when the MC is a Republican.
20. Due to multicollinearity between foreign-born and the size of the Latino population, only the immigration model includes the foreign-born population as a control. The other models all have the percent of the district that is Latino as a predictor. The models are substantively the same when the two are population estimates are swapped across all of the models.
21. Proportions, especially those with distributions skewed towards the extremes (i.e., 0 and 1), make ordinary least squares regression problematic.
22. This is done using the *fracglm* command in Stata 16 from Williams' (2019) user-written package.
23. A zero-one inflated beta (ZOIB) distribution model (Buis 2010) is not appropriate because it rests on the assumption that there are different processes – and as a result, different independent variables – influencing legislators that have no tweets in a given category (or issue area) when compared to those with some tweets in those same variables (Buis 2010; Williams 2019). The operating assumption here is that all legislators have the same capability (or freedom) to post whatever they want on the platform, so the zeros present in the data come from a lack of desire or motivation to post about a particular issue.
24. In addition to the standard models, where 428 of the MCs were included, two other matching models were employed as robustness checks given the reality that there were only 37 Latino legislators in the 115th U.S. House.

The first approach used was coarsened exact matching (CEM), where Latino legislators were matched with non-Latino legislators in similar districts through Blackwell et al.'s (2009) *cem* package in Stata 16. This process led to subset of legislators (22 Latino and 22 non-Latino) to test the hypotheses (see appendix for matching procedure statistics). The other approach was to look at (non-)Latino legislators with an above average Latino and foreign-born population and compare legislators in that manner. This less stringent approach led to a subset of 142 total MCs, with 31 (of 37) Latino MCs available for analyses. The results (see appendix for regression tables) are substantively the same as the full, unmatched models.

25. This is a substantive difference, especially when considering that recent papers have found tweet differences that are a fraction of that predicted amount. For example, Gervais and Wilson (2019) find when looking at the 112th Congress that the expected difference in Spanish tweets between a Latino and non-Latino legislator is less than four – over the entire two-year session (p. 12; see also Stout, Coulter, and Edwards 2017 and Tillery 2021 for similar effect sizes).
26. This estimate is computed using the average number of tweets across the chamber, which is about 1,100 over the 2-year period. There are, of course, various individuals that posted far less and far more over the course of that time period.
27. A Google Trends news analysis from July 2017 to November 2018 (not shown) with “immigration,” “Hurricane Maria,” “Affordable Care Act,” “tax reform,” and “Supreme Court” as search terms, confirms the heavy hold that immigration and Hurricane Maria had in the U.S. relative to some of those other areas.
28. If legislators are expected to present fewer bills and also less likely to get said bills

passed, then the expectation is that their communication would be less likely to center on legislation directly.

29. Of the bills (4,248) introduced by House Democrats during the 115th Congress, only 305 made it to the floor and of that 84 became law when compared to the House Republicans' passage of 218 (of 4,628 introduced) bills of over a thousand that made it to the floor for consideration (Library of Congress 2022).
30. Tillery (2021) identified 19% of all of the CBC tweets as symbolic (p. 9).
31. Women held 92 seats in the House, and 67 of those were held by Democratic women.

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Data availability statement

Data is available upon request.

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Appendix A: Example Tweets from Representative Lucille Roybal-Allard (CA 40th)

Policy: “I voted today for the STOP School Violence Act, but this bill is just a small first step in the fight against gun violence. If we want to prevent more shootings like Parkland, we need strong, sensible, bipartisan #GunSafety policies that do more to protect our kids and communities.” on March 14, 2018.

Symbolic: “It is simply shameful that our society pays #Latinas 47% less than white, non-Hispanic men. This #LatinaEqualPayDay, I stand as a proud #Latina and the first #MexicanAmerican congresswoman, and recommit to fighting for policies to promote #EqualPay!” on November 1, 2018.

Media: “Happy to meet with @EastLACollege (#ELAC) President Marvin Martinez and ELAC Dean/ELAC Foundation Executive Director Paul de La Cerda to discuss some of the college’s many outstanding programs!” on October 12, 2018.

Appeal for Action: “Non-Alcoholic Steatohepatitis (#NASH) is a severe liver disease that quietly afflicts up to 30 million U.S. adults. This #NASHDay, I urge you to learn more about it and how to treat it by visiting bit.ly/2nfy5gF. @intNASHday” on June 12, 2018.

Event: “Want to share your views on how to improve #BellGardens’ streets? Then come to the Complete Streets Community Workshop this Thursday, October 18th, from 10 AM to 12 PM at Veterans Park’s Ross Hall (6662 Loveland St.) on October 16, 2018.

Immigration: “We will never be able to address our #immigration challenges by treating the millions of undocumented people in America as criminals” on July 27, 2017.

Health Care: “Gave House speech calling for increased research, health care, and long-term support for those living with #DownSyndrome” on November 1, 2017.

Education: “Questioned experts today about ensuring that our workforce has the education and training it needs to do the jobs of the 21st century” on April 4, 2017.

Hurricane Maria: “One year after #HurricaneMaria, #PuertoRico still faces food and water shortages, an unstable power supply, and inadequate medical services. Our federal government, including @FEMA, must do much more to address this crisis and to reduce the island’s vulnerability to future disasters” on September 20, 2018.

Table A1. Tweet topics.

Topic	Minimum	Mean	Std. dev.	Maximum	Observations
Media	41	901.76	743.32	5859	428
Policy	1	137.42	126.79	1581	428
Symbolic	0	3.79	6.05	40	428
Partisan	0	59.39	103.72	1150	428
Appeal	0	29.05	29.38	265	428
Event	0	5.54	7.14	67	428
Education	0	54.69	58.49	768	428
Immigration	0	45.86	72.82	695	428
Health care	0	48.15	56.82	345	428
Opioid crisis	0	13.36	18.93	153	428
Tax reform	0	80.31	90.55	990	428
Supreme court	0	9.75	11.93	100	428
Hurricane Maria	0	9.34	15.89	209	428
Total MC tweets	48	1151.06	942.06	6755	428

Table A2. Descriptive statistics legislators in 115th U.S. House.

	Minimum	Mean	Std. dev.	Maximum	Observations
Proportion variables:	0.0007	0.1253	0.0469	0.3103	428
Policy					
Symbolic	0	0.0028	0.0039	0.0214	428
Education	0	0.0470	0.0222	0.1579	428
Immigration	0	0.0343	0.0400	0.3317	428
Health care	0	0.0388	0.0304	0.1845	428
Hurricane Maria	0	0.0079	0.010	0.0859	428
Legislator characteristics:	0	0.0864	0.2814	1	428
Latino					
Black	0	0.1075	0.3100	1	428
Asian	0	0.0281	0.1653	1	428
Age	33	58.5724	10.8937	88	428
Female	0	0.1986	0.3994	1	428
Democrat	0	0.4579	0.4988	1	428
District characteristics:	0.8	18.0572	18.2837	88.1	428
% Latino					
%Foreign born	0.9	13.4270	11.0789	56.1	428

Table A3. Matching procedures statistics.

Balance type	Matching procedure						
	Automatically generated*		User generated				
	Non-Latino MC	Latino MC	Non-Latino MC	Latino MC			
# of MCs	393	37	393	37			
# of Matched MCs	22	22	109	33			
# of Unmatched MCs	371	15	284	4			
Multivariate L1 distance (pre-matching)	0.7590		0.7590				
Multivariate L1 distance (post-matching)	0.0		0.6989				
# of strata	9		-				
# of matched strata	9		-				
Univariate imbalance statistics for % Latino in district							
	L1	Mean	Min	25%	50%	75%	Max
Base (pre-matching)	0.7590	41.195	1	36.7	52.8	51.5	7.1
Coarsened (post-matching)	0	0.5182	0.3	-3.1	2.2	2.6	4

*Using the Scott break method for imbalance (see Blackwell et al. 2009).

Table A4. Coarsened exact matching regressions.

Independent variables	Proportional dependent variables					
	Immigration	Education	Health care	Maria	Policy	Symbolic
Latino#	0.0574*** (0.0157)	-0.0062 (0.0064)	-0.0013 (0.0099)	0.0129* (0.0066)	-0.0014 (0.0166)	0.0029* (0.0013)
Black#	-0.0396 (0.0249)	-0.0261* (0.0157)	-0.0466*** (0.0175)	-0.00681 (0.0095)	-0.0894* (0.0374)	0.0003 (0.002)
Asian#	0.0132 (0.0267)	0.0036 (0.0116)	0.0049 (0.0197)	0.0092 (0.0084)	-0.0207 (0.0179)	0.0044*** (0.0014)
Age	0.0007 (0.0005)	-0.0002 (0.0002)	0.00005 (0.00030)	0.0002 (0.0002)	-0.0007 (0.0006)	0.00005 (0.00003)
Female#	-0.0083 (0.0132)	0.0056 (0.0077)	-0.0059 (0.0140)	-0.0013 (0.0066)	-0.0087 (0.0231)	-0.0004 (0.0008)
Democrat#	0.0537*** (0.0182)	0.0154* (0.0070)	0.0451*** (0.0135)	0.0028 (0.0071)	0.0027 (0.0165)	0.0090*** (0.0021)
% Latino	-	0.00002 (0.00013)	0.00006 (0.00021)	0.00004 (0.00012)	-0.0002 (0.0004)	-0.0000001 (0.0000300)
% Foreign born	0.0017*** (0.0005)	-	-	-	-	-
Constant	-4.5736*** (0.5048)	-3.3515*** (0.3582)	-3.4046*** (0.6322)	-5.0914*** (1.2169)	-0.9986*** (0.3335)	-8.1582*** (0.7915)
N	70	44	44	44	44	44
Pseudo R ²	0.0444	0.0028	0.0211	0.0138	0.0102	0.0398

The estimates shown are marginal effects and the standard errors are in parentheses.

*Estimate denotes a discrete change of binary variable from zero to one.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A5. Alternate matching regressions.

Independent variables	Proportional dependent variables					
	Immigration	Education	Health care	Maria	Policy	Symbolic
Latino#	0.0498*** (0.0086)	-0.0032 (0.0053)	-0.0063 (0.0090)	0.0098* (0.0047)	-0.0112 (0.0143)	0.0019* (0.0009)
Black#	-0.0025 (0.0084)	-0.0135* (0.0063)	-0.0214*** (0.0059)	0.0022 (0.0023)	-0.0570*** (0.0142)	-0.0006 (0.0010)
Asian#	0.0054 (0.0113)	0.0005 (0.0058)	0.0128 (0.0107)	0.0043 (0.0046)	0.0037 (0.0111)	0.0011 (0.0010)
Age	0.0003 (0.0002)	0.00001 (0.00014)	0.0002 (0.0001)	0.00005 (0.00011)	-0.00008 (0.00035)	0.00008*** (0.00003)
Female#	0.0009 (0.0057)	0.0083* (0.0036)	-0.0019 (0.0047)	0.0003 (0.0023)	0.0025 (0.0091)	0.0012* (0.0006)
Democrat#	0.0510*** (0.0101)	0.0094* (0.0039)	0.0452*** (0.0062)	-0.00001 (0.00215)	-0.0101 (0.0091)	0.0083*** (0.0012)
% Latino	-	0.00014 (0.00011)	-0.00006 (0.00019)	-0.00004 (0.00008)	0.0001 (0.0003)	-0.00001 (0.00002)
% Foreign born	0.0008*** (0.0003)	-	-	-	-	-
Constant	-4.613*** (0.3884)	-3.3324*** (0.2180)	-4.2050*** (0.3744)	-4.9309*** (0.7137)	-1.8669*** (0.2313)	-8.5863*** (0.3876)
N	164	142	142	142	142	142
Pseudo R ²	0.0482	0.0031	0.0272	0.0106	0.0037	0.0464

The estimates shown are marginal effects and the standard errors are in parentheses.

#Estimate denotes a discrete change of binary variable from zero to one.

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