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The power of commemorative policies

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The power of commemorative policies

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Abstract

Naming streets and public spaces after prominent figures and national symbols following a cultural and political agenda is a widespread practice of governments throughout the world. We study whether these commemorative policies actually influence people. Street names are ubiquitous urban elements; subtle pieces of information embedded with cultural and political meanings to which individuals are exposed on a daily basis. Through in-person and online surveys, we find that respondents have more knowledge about the figures commemorated in their streets and give more importance to them, compared to similarly relevant figures. We also find suggestive but inconclusive evidence of the influence of street names on gender and religious attitudes. These results have implications for urban commemorative policies around the world as well as for debates about the efficacy of interventions conducive to socially desirable outcomes. They also inform how people acquire knowledge, form their opinions and attitudes, and construct their identities.

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1. Introduction

Governments and societies all over the world name streets and public spaces after prominent figures and national symbols with the hope that such commemoration and public recognition reach and inspire people. States promoting nation-building processes and new political regimes often instrumentalize place names to foster national values and certain ideologies (Azaryahu, 1996; Rose-Redwood et al., 2010; Drozdzewski, 2014). Do these policies achieve their goals? Do street names -a paradigmatic case of commemorative policy- influence people? These questions relate to how people acquire knowledge, form their opinions and attitudes, and -ultimately- how they construct their identities, which are central issues in economics and social sciences (Hassin et al., 2007; Oxley et al., 2008; Akerlof and Kranton, 2010; Enke, 2024).

The messages conveyed by the representation of certain identities and values through books, movies, sports and other means, have the potential to influence people (Alrababa'h et al., 2021; Adukia et al., 2023; Riley, 2024). Street names are one of these means. We study whether this ubiquitous element of our cities influences people's knowledge, opinion, and attitudes. Street names represent a form of passive information often embedded with cultural and political meanings, to which individuals are exposed on a daily basis. Human geographers and other social scientists have long emphasized the strong symbolic power of street names, which lies in the naturalization of their meanings by incorporating them into the common space of daily life. They are considered to exert a subtle but constant influence, contributing to the reproduction of the narrative they transmit (Azaryahu, 1996).

Analyzing the effect of street names combines the benefit of a real-world important phenomenon with a quasi-experimental empirical setting, given the exogenous nature of street names. We conduct a door-to-door survey of individuals residing on streets named after 10 relevant political and cultural figures in Spain, along with an online survey. We ask respondents for the profession of the figures commemorated in the streets of the sample, for their opinion about which figure was the most important in different domains, and for their attitudes in questions related to gender, religion, and politics. We find that respondents have more knowledge about the figures commemorated in their streets and give more importance to them, relative to similarly relevant figures. We also find suggestive but inconclusive evidence of an effect on attitudes towards gender roles and religious symbols.

An important assumption in our analytical approach is that people do not choose to live on streets named after figures they like or admire. The street name is a second-order characteristic that does not drive the decision of choosing residence. To reinforce this point, we first show that there is a good balance in the socio-demographic variables of respondents across the streets of the sample. Second, we leverage electoral district-level data to show that people do not vote consistently with the ideology of the figure commemorated in their streets, corroborating that people do not self-select into street names related to their personal values. Third, we include municipality fixed-effects in the regressions to neutralize the possibility of people moving to municipalities culturally and politically aligned with them. Fourth, and importantly, we also exploit within-respondent

variation by comparing the answers to the battery of questions asked to each participant. Across specifications, we consistently observe a strong effect of street names on knowledge and opinion: people tend to know better the professions of the figures commemorated in their streets and to judge them as the most important compared to other figures.

Our study contributes to recent work in economics and political science analyzing the effects of commemorative policies in general and street names in particular. In the US, the causes and consequences of Confederate memorials (monuments and place names) have attracted significant attention. Green et al (2024) investigate their impact on housing preferences and prices. They find that Black, Democrat, and highly educated people are less likely to own a house on streets with Confederate names, which generates a lower demand that produces a price penalty of 3%.

Henderson et al. (2021) find a robust correlation between the number of lynching victims in a county and the number of Confederate memorials. Bazzi et al. (2023) document that white migration out of the postbellum South spread and entrenched Confederate memorials across the country along with racist social norms. According to the authors, symbolic commemoration is a key mechanism for transmitting Confederate memory and racial norms. Williams (2021) documents that Blacks residing in areas with more Confederate streets suffer a labor market penalty in terms of employment and wages. The underlying (hypothesized) mechanism is that the cultural narratives expressed by Confederate symbols strengthen bonds among members of the dominant group who may exercise power over a minority group, thereby affecting their social and labor conditions.

Focusing on the consequences for political and social attitudes, Rahnama (2025) finds that the removal of Confederate symbols led to a decrease in racial resentment and anti-Black hate crimes, and an increase in support for affirmative action and warm feelings toward Blacks. This result is consistent with a norm-shifting effect, by which sudden and visible changes in symbols provide information about evolving societal views about those symbols, leading to changes in public opinion, perceptions of social norms, and behavior (Rahnama, 2025). However, this encouraging effect of removing offensive symbols has not been found in the European context. Villamil and Balcells (2021) show that the removal of Francoist street names produced a backlash effect in Spain, increasing the electoral support for the new far-right party VOX. Similarly, Rozenas and Vlasenko (2022) find that the demolition of Soviet monuments in Ukraine promoted the mobilization of the pro-Russian vote. Also relatedly, Ochsner and Roesel (2024) reveal how a far-right party in Austria gained more votes after connecting Muslims with the Ottoman Siege of Vienna, especially in places with more monuments and streets commemorating those past events. Beyond political and racial issues, Becker et al (2024) study the exposure to religious symbols and find that exposure to a saint symbolizing a strong commitment to education is positively related to the share of high school graduates across French Brittany municipalities.

We expand this novel literature on the consequences of symbolic commemorative policies by hypothesizing and testing an effect on knowledge, opinion, and attitudes of the population. While the extant literature focuses on the relationship between

commemorative policies and differences in behavior (labor market, housing, voting) and cultural norms (racial attitudes), we shed light on the mechanisms behind these relationships, that is, the previous steps within the cognitive process that help explain why symbolic policies matter for social norms and behavior. Moreover, our focus on ordinary street names, rather than highly ideologically charged names, makes our analysis more informative for understanding the effects of commemorative policies in general.

Our results of a strong effect of street names on knowledge and opinion have far-reaching implications for urban naming and commemorative policies, particularly in the current "name game" moment in countries such as the US, where place names become political tools (Kannarr et al., 2025). Just as what is represented in movies, textbooks, sports and politics matters (Ladam et al., 2018; Alrababa'h et al., 2021; Adukia et al., 2023; Riley, 2024), so does what street and other place names convey.

Our findings also relate to debates about the efficacy of interventions conducive to socially desirable outcomes (Mertens et al., 2022; Szaszi et al., 2022). Like nudging, street names can be thought of as a non-invasive, low-cost intervention that may shape people's attitudes and ultimately behavior. While we do not find consistent evidence supporting an effect on attitudes, the results leave the door open, encouraging further research. We show that there is a clear influence on knowledge, and knowledge is a driver of attitude formation. Relatedly, attachment or affection to a name may also shape attitudes (Vogel and Wanke, 2002; Crano and Prislin, 2006) and ultimately identity (Akerlof and Kranton, 2010). Overall, this paper informs debates in economics and social sciences about knowledge and opinion formation, as well as the power and role of symbolic and commemorative policies (Villamil and Balcells, 2021; Williams, 2021; Rahnama, 2024; Rozenas and Vlasenko, 2022; Ochsner and Roesel, 2024).

2. Conceptual framework

Street names constitute ubiquitous urban elements of our everyday lives that can be understood as passive information, often perceived at the preconscious level (as we do not normally pay attention to -and think about- them) but sometimes also perceived and retrieved consciously (e.g., when making an order, filling a form, etc.) (Dehaene et al., 2006).

First, we hypothesize that street names exert an effect on the individual's knowledge about the figure or personage commemorated. People develop a strong sense of familiarity with the name of their street of residence. This is reflected, for example, in very long-term memory retention, as people can remember the names of their childhood neighborhoods' streets (Schmidt et al., 2000). The familiarity with street names may lead to higher knowledge by prompting a conscious process of information seeking to satisfy curiosity or by facilitating retention when encountering information related to the element or personage commemorated in the street. Repetition and familiarity priming may thus result in greater memory retention of both the name and other stimuli associated with it (Hall, 1991; Schendan, 2012).

Second, we also hypothesize an effect on judgment or opinion. The availability

heuristic suggests that individuals will tend to overestimate the importance of the figure commemorated in their streets, as it is highly accessible in their minds (Tversky et al., 1973). Moreover, our street name of residence can shape our self or identity, with implications for information processing and norms (Markus and Wurf, 1987; Akerlof and Kranton, 2010).

Third, street names may also affect attitudes through their effect on knowledge and identity. For instance, living on a street named after a women's rights advocate can make people gain knowledge about her biography and identify with her cause, which could influence their gender role attitudes. Besides, mere exposure to a name can make us like it more, thereby shaping our attitudes (Vogel and Wanke, 2002; Crano and Prislin, 2006).

3. Survey design and analytical approach:

3.1 Survey design

We conduct an in-person survey through a specialized company to 500 individuals residing in specific streets in several municipalities in southern Spain (Andalusia) in May 2023. We select 23 streets containing 10 names commemorating relevant political and cultural figures. Streets were selected based on the following criteria: i) to be named after an illustrious figure (but avoiding very well-known ones such as Cervantes), ii) to exist in at least two municipalities, iii) to be geographically close to increase similarity, iv) to belong to middle-class (widely defined) neighborhoods, v) good accessibility to conduct interviews, vi) to have enough number of residents, and vii) without street name change since 2001 (when data on street names is first available). Besides, we try to select streets in the minimum possible number of municipalities in order to exploit within municipality variation. Our sample of streets is geographically distributed in two clusters, one in the Seville metropolitan area and the other in Cordoba city. Figure 1 summarizes the survey sample design, including the geographic location of the sample points. It further shows that the selected streets are in neighborhoods with comparable income levels as they are not in the rich (yellow) or poor (dark blue) areas.

Within each street, we apply a sweep sampling technique. Generally, only one individual per household responded (445), but there are also cases of more than one questionnaire per household (45 cases). Interviews are conducted door-to-door as we need certainty about the street of residence of each respondent. The questionnaire contains one question at the end to double-check that the residence of the respondent is actually the one where the interview was conducted. Importantly, the participant does not know the purpose of the study. We introduce it as a survey about cultural knowledge and values.

The questionnaire contains items to test the three categories of hypotheses about the influence of street names. Considering knowledge, we ask respondents whether they know the profession of the 10 figures commemorated in the streets of the sample. Regarding opinion or judgment, we ask three questions for their opinion about which figure was the most important in politics, culture, and women's rights. Finally, with respect to attitudes,

we ask them for their opinion on questions related to gender roles, politics, and regional identity.[1]

Besides the in-person survey, we conduct a complementary online survey to analyze the influence of street names on religious attitudes.[2] We employ several channels of distribution for this survey, including the network of interviewers of the company who conducted the in-person survey, *Facebook* advertisement, and a panel of 1000 Spaniards by *Netquest*. The number of valid questionnaires completed through each channel is 314, 649, and 1031, respectively. For consistency, we focus on respondents residing in Andalusia, which is the geographic region of the in-person survey. The resulting sample size is 639, although the results are very similar for the whole sample. The survey asks for the respondents' opinion about the presence of religious symbols in the public space, showing them images 1 and 2 of Fig. 4. As in the in-person survey, participants did not know our research hypotheses.[3]

3.2 Analytical approach

3.2.1 Regression models

To study the effect of street names, we estimate the following equation through ordinary least squares:

$$\gamma_{i,m} = \alpha + \beta \cdot St_{i,m} + \delta \cdot X_{i,m} + \eta_m + \varepsilon_{i,m} \qquad (Eq.\ 1)$$

where $y_{i,m}$ is the dependent variable for respondent i who resides in municipality m, α is a constant term, $St_{i,m}$ is a binary variable capturing whether the respondent resides in a specific street, $X_{i,m}$ is a vector of socio-demographic variables, η_m is a set of municipality dummies,[4] and $\varepsilon_{i,m}$ is the error term. The coefficient of interest is β, which captures the effect of street names on either knowledge, judgment, or attitudes. We report heteroskedasticity-robust standard errors.

For survey questions related to knowledge about the figures as well as to judgment about their importance, we pool questions together to exploit the within-respondent variation. The resulting equation looks as follows:

[1] The Supplementary Materials provide more details about the structure of the sample as well as the transcriptions of the questionnaires and the operationalization of the main variables. Moreover, it includes details about a pilot survey conducted by the research team. Table S1 in the Supplementary Materials reports the descriptive statistics of the variables employed in the analysis.

[2] An online survey enables this analysis because religious streets are common in Spain, amounting to 11.8% on average across municipalities (Oto-Peralías; 2018). Therefore, drawing a random sample of, say, 1000 individuals, should result in about 110 religious streets. In practice, the percentage turned out to be lower, although still enough to execute the analysis.

[3] Table S2 in the Supplementary Materials reports the descriptive statistics of the online survey as well as the translated version of the questionnaire.

[4] From 9 municipalities in the sample we create 6 dummy variables, as municipalities belonging to the Aljarafe district (in Seville) are grouped together. We do it because they are very similar and geographically close, and to keep enough variation within groups.

$$y_{i,f} = \alpha + \beta St_{i,f} + \eta_f + \rho_i + \varepsilon_{i,f} \qquad (Eq.\ 2)$$

where $y_{i,f}$ is the dependent variable for respondent i concerning figure f, α is a constant term, $St_{i,f}$ is a binary variable capturing whether the respondent resides on a street named after figure f, η_f is a vector of figure fixed-effects, ρ_i is a vector of individual fixed effects, and $\varepsilon_{i,f}$ is the error term. The coefficient of interest is again β, which captures the effect of street names. We report standard errors clustered at the respondent level.

The key difference between models 1 and 2 is that the former performs a cross-individual analysis. It tests, for example, whether respondents residing in Miguel de Unamuno Street know this figure better than respondents residing in other streets. In contrast, model 2 performs a within-individual analysis by testing, for instance, whether individuals living in Miguel de Unamuno Street know this figure better than the other figures. The latter model allows us to check whether unobserved differences in the characteristics of respondents across streets drive the results. *Eq. 2* is employed in the regressions reported in Panels A.2 and B.2 of Figure 3, while *Eq. 1* in the rest.

3.2.2 Selection into street names

A key assumption in our empirical approach is that people do not select to live on streets named after figures they like or admire. Arguably, the street name is an attribute of little importance when deciding the home location. It is very unlikely that people who know better or give more importance to some figures select to live, based on this, in a street commemorating them. Only very extremist or offensive names may deter the selection of a location as a residence, as is the case of Confederate memorial streets in the U.S. (Green et al., 2024). But ordinary or neutral names should not affect a major decision such as the home location, involving so many factors and variables. Importantly, the street names comprising our sample are largely neutral, except Dolores Ibarruri, a communist leader during and after the Spanish Civil War. We have checked that our results do not change when excluding this street name.

A related identification challenge would be that neighbors might request a change in their street name after a figure they consider worthy of it. While this might happen, it is uncommon, and we have checked that it does not apply to our sample of streets. Finally, it is possible that certain street names are in well-off areas, where neighbors have a higher educational and socio-economic status. We have tried to minimize differences in income and building' construction years when designing the sample. Besides, we include control variables to neutralize this source of bias (mainly, level of education and general knowledge). On top of this, the within-individual analysis holds constant all respondents' characteristics.

Panel A in Table 1 shows that there is a good balance across street names in respondents' characteristics such as age, gender, civil status, education, interest in politics, and ideology. Considering the latter, it is noteworthy to observe that there is no correspondence between the ideology of the figure and that of the street's residents. As mentioned, Dolores Ibarruri was a communist leader but the coefficient on ideology is close to zero. Similarly, Clara Campoamor and Victoria Kent were left-wing politicians

(although better known today for their role in promoting women's rights), but this is not reflected in the residents' ideology, rendering insignificant coefficients. Only the coefficient on Rosa Chacel is significant and positive, but she did not have a conservative ideology at all. Therefore, people do not seem to choose to live on streets named after figures aligned with their values.

Next, we leverage on section-level data from the last Spanish parliamentary election (July 2023) to further analyze the possibility that people select to live in areas with street names aligned with their values. To do so, we collect the list of politicians most frequently honored in Spanish street names. We focus on 20th century politicians, where their party affiliation can be better aligned with the current ideological cleavage. Panel B in Table 1 reports results from regressions taking the following form:

$$\gamma_{s,m} = \alpha + \beta \cdot St_{s,m} + \eta_m + \varepsilon_{s,m} \qquad (Eq.\ 3)$$

where $y_{s,m}$ is the turnout or electoral support of a political party in census section s located in municipality m, α is a constant term, $St_{s,m}$ is a binary variable capturing whether the census section contains a street named after the politician indicated in the row label of the table, η_m is a set of municipality dummies, and $\varepsilon_{s,m}$ is the error term. The unit of observation is the electoral census section, which is made up of several street blocks. The sample includes all sections with at least one street named after any of the 11 politicians listed on the table.

Reassuringly, there is no evidence of an association between street names and voting behavior, as most of the coefficients are insignificant. For example, Pablo Iglesias (2nd row) was the founder of the socialist party (PSOE). However, residents of sections with streets named after him are not more likely to vote for that party than for others.

We have also checked that there is no association between streets named after the 10 figures of our survey and voting behavior. Again, most of the coefficients are insignificant. Out of the 10 figures, only in one case (Antonio Maura) there is some consistency between the ideology of the figure and electoral support for some parties (negative for PSOE and positive for PP).[5]

Overall, the results indicate that people do not choose to live on certain streets based on their names. Recent experimental evidence by Celse and Grolleau (2024) backs this conclusion. Through a scenario-based experiment, they find no impact of the gender of street names on the likelihood of choosing a flat, the price willing to pay, and the perceptions of life quality.[6]

4. Results

[5] The results are provided in Table S7 in the Supplementary Material.

[6] An alternative reading of this section's results is that street names do not affect people's behavior, going against our hypotheses. However, one cannot expect such a strong effect from street names. Otherwise, it would be extremely easy to manipulate people to perpetuate political power. We hypothesize that street names exert a subtle influence on people's knowledge and attitudes, but not so strong as to be visible in voting patterns.

4.1 Street names and knowledge

Figure 2 depicts the relationship between street names and knowledge. It summarizes the results from survey questions where we ask the respondents for the professions of the 10 figures named in the streets of the sample. We code that a respondent knows a figure if he/she correctly answers the figure's profession. Each grid-cell shows the percentage of residents in each street who know the profession of the figure indicated in the column heading, relative to the average knowledge in each street (to control for differences in general knowledge across streets). The relevant comparison is across rows within each column. The maximum value of each column is highlighted in the main matrix to facilitate this comparison.[7]

Remarkably, figures are much better known in the streets named after them. For instance, column 1 shows that Alcalá-Zamora is known 20 percentage points (pps.) above the street average in the streets named after him (cell value equal to 1.2), while in the rest of the streets the figure is known below the street average (as cell values are lower than 1). Column 2 shows that the next figure (Maura) is better known in the streets named after him (cell value of 0.92) than in the rest. Only for one figure this pattern does not hold (Blas Infante).

Panel A.1 of Fig. 3 presents the results from regressions of the knowledge of each figure on the street names where the respondents live (*Eq. 1*). We report three estimates: i) with a basic set of control variables (sex, age, age squared, marital status, educational level, and years residing at the current address); ii) with extended controls 1 (adding general knowledge, interest in politics, and ideology); and iii) with extended controls 2 (the former plus six municipality dummies). Notably, the graph shows a strong influence of street names on respondents' knowledge. For instance, the percentage of respondents knowing the profession of Alcalá-Zamora is about 30 pps. higher for those living on streets named after him. This is a substantial effect given that, on average, 41% of respondents know him. The effect is lower for Unamuno, J.R.J., and Blas Infante, who are the three best-known figures (see bottom bar of Fig. 2). Arguably, when personages are very well known, streets named after them hardly increase their already high popularity.

Panel A.2 reports the results from the within-individual analysis (*Eq. 2*). Here we introduce a full set of individual dummies that sweep away all observable and unobservable characteristics of respondents. The first row of the graph shows that, on average, respondents know much better (21 pps.) the figure commemorated in their streets than the other figures. This value is close to the average of the estimated coefficients reported in Panel A.1 (18 pps.). The rest of the rows in the figure analyze the heterogeneity of the effect by level of education and sex, finding no significant

[7] The bottom bar shows the percentage of respondents that know each figure in the whole sample. Thus, Alcalá-Zamora is known by 41% of the respondents, a percentage much lower than Juan Ramón Jiménez, known by 89% of the respondents. The right bar reports the percentage of figures that the residents of each street know. For instance, residents on streets named after Alcalá-Zamora (first row) know on average 64% of the figures.

differences.[8]

4.2 Street names and opinion

Panels B.1 and B.2 in Figure 3 report the effect of street names on respondents' view on who was the most important figure in three different domains, namely, politics, culture, and the fight for women's rights. Again, street names exert a notable influence on this cognitive dimension. For example, Panel B.1 shows that respondents living on streets named after Clara Campoamor and Alcalá-Zamora are about 15-20 and 23-29 pps. more likely to answer that these figures were the most important in politics, respectively. This is a substantial effect against sample averages of 22 and 20%. For the other two figures the influence of street names is also clear although less pronounced, with coefficients ranging between 12-15 and 7-10 pps. vs. sample averages of 28 and 6.2%.

Considering the cultural sphere, the effect is clear in all cases except for Rosalía de Castro. With respect to women's rights, the influence of street names is very strong for Campoamor and Victoria Kent, while nonexistent for Dolores Ibarruri (who is mostly associated with left-wing politics rather than with women's rights). The fourth name, Concepción Arenal, is not present in the sample of street names and therefore not relevant here.

Panel B.2 reports the results from the within-individual analysis. According to the baseline model (without interactions), respondents give on average more importance in each domain to the figure commemorated in their streets. When differentiating the effect by the respondent's education level and sex, the level of heterogeneity is generally small for politics and culture, although higher for women's rights. Interestingly, in the latter the coefficient is insignificant for women, suggesting that they may be better informed on this subject than men, who are therefore more susceptible to being influenced by street names.

4.3 Street names and attitudes

We include several questions in the survey to check whether respondents living on streets named after women have more egalitarian views. Concerning religious attitudes, we run an online survey to test whether respondents living on streets with religious names have more tolerance regarding the presence of religious symbols in public spaces. Related to politics, we ask for the respondents' opinion about the political regime of the Spanish Republic (1931-36) to check whether those living on streets commemorating Alcalá-Zamora, president of the Republic, have more positive views. We further test whether respondents living on streets commemorating Blas Infante, "father" of the Andalusian regional identity, have a stronger Andalusian identity.

Figure 4 summarizes the results. The dependent variables are standardized to facilitate the comparison of the coefficients. First, we focus on attitudes about gender roles. Panel A reports the respondents' views about how much progress in gender equality has been

[8] The full regression results are reported in the Supplementary Materials.

made in several dimensions, such as social rights, labor market opportunities, and housework and care. While differences are less clear-cut for social rights (the dimension achieving the highest progress in gender equality), the coefficient is consistently negative for the other two dimensions, and the largest for housework and care (the dimension witnessing the smallest progress). This means that residents on streets named after female figures are more aware of the still ongoing gender differences in housework and care. The next two rows of Panel A report analogous regressions where the coefficient of interest is split by the sex of the respondent, finding little heterogeneity.

Panel B focuses on the respondents' agreement with several possible reasons for the predominance of men as mayors in city councils. Interestingly, for these questions there appears to be an effect, mainly for women. Thus, women but not men residing on streets named after female figures disagree with "women are less interested in politics" and "women prefer to avoid jobs with high responsibility" and agree with "difficult work-family balance".

Panel C addresses a different subject, religion. It reports the respondents' views about the presence of religious symbols in two contexts, namely, a crucifix in a council town hall (image 1) and an image of the Virgin Mary in a town square (image 2). These questions were asked through an online survey where both images were shown to a sample of about 700 respondents. Those living on streets with religious names agree more with the presence of religious symbols (hence the negative coefficient), particularly in the case of crucifixes, although the difference is not statistically significant. Remarkably, when interacting religious streets with a binary indicator on whether the respondent is a believer or not, an interesting heterogeneity arises: there is an effect only when the respondent is a believer.

Finally, Panels D and E focus on political attitudes. The former shows that residents in Alcalá-Zamora Street, who was the president of the 2nd Republic, have similar views about this political regime as the rest of the respondents. The latter shows that residents in Blas Infante Street have less regional identity, going against expectations, although the coefficient is insignificant. A limitation of the last two panels is that they compare residents on streets named after a single figure with the rest, while in the previous panels the samples are better balanced.

Overall, Fig. 4 provides inconclusive but suggestive evidence regarding the influence of street names on attitudes. The coefficients tend to have the expected sign and are sometimes significant or close to significant. In Panel A, the influence of street names is more visible in the dimension where less progress has been made (housework and care). Similarly, Panel B shows a higher effect in the most controversial and sensitive statements, being the coefficient significant for women respondents for all but one item. Along the same line, Panel C shows a similar pattern as coefficients bear the expected sign, with a theoretically compelling heterogeneity. By contrast, Panels D and E are less supportive of an effect of street names, but they hinge on the comparison of one street

name (50 observations) with the rest.

5. Discussion and conclusions

Our findings provide strong evidence supporting the influence of street names on knowledge and judgment. Respondents know notably better and judge more important the figures commemorated in their streets than other similarly relevant figures. We do not find conclusive evidence supporting an effect on attitudes. However, this does not rule out a possible influence of street names on attitudes. First, for some questions there seems to exist an influence, particularly when taking into account the characteristics of respondents. For instance, exposure to religious street names seems to affect only religious people, which is consistent with research suggesting that mere exposure only affects attitude formation, not change (Crano and Prislin, 2006). Second, the effect on attitudes is arguably expected to be of moderate size. To accurately estimate a small effect, it is necessary to have strong statistical power, which implies a large sample. All this leaves the door open to further investigate this important question, with the potential to affect urban naming and commemorative policies all over the world.

Furthermore, the strong effect of street names on knowledge and judgment is, on their own, encouraging for using commemorative policies for educational purposes, which resembles the idea of nudges (Mertens et al., 2022; Szaszi et al., 2022). Street and other place names are non-invasive, low-cost interventions that can increase people's knowledge about certain figures and values that society considers worthy of it, which is particularly convenient to make progress in some key areas such as gender and racial equality. Ultimately, the results suggest that street names and other toponyms might contribute to shape our identity, therefore affecting norms and behaviors (Akerlof and Kranton, 2010).

References

Adukia, A., Eble, A., Harrison, E., Runesha, H. B., & Szasz, T. 2023. "What we teach about race and gender: Representation in images and text of children's books." *The Quarterly Journal of Economics*, 138(4): 2225-2285.

Akerlof, G.A. and Kranton, R.E., 2010. *Identity economics: How our identities shape our work, wages, and well-being*. Princeton University Press.

Alrababa'h, A., Marble, W., Mousa, S., and Siegel, A. A. 2021. "Can Exposure to Celebrities Reduce Prejudice? The Effect of Mohamed Salah on Islamophobic Behaviors and Attitudes." *American Political Science Review*, 115(4), 1111–1128.

Azaryahu, M. 1996. "The power of commemorative street names." *Environment and Planning D: Society and Space* 14 (3), 311–330.

Bazzi, Samuel, Andreas Ferrara, Martin Fiszbein, Thomas P. Pearson, and Patrick A. Testa. 2023. "The Confederate Diaspora." NBER WP No. w31331.

Becker, Sascha, le Bris, David, and Gergaud, Olivier. 2024. "Religious Symbol. The Effect

of Ste Anne on Education in Britanny". Mimeo

Celse, J. and Grolleau, G. (2024). "The influence of street name gender on perceptions of location quality and rental decisions." *Review of Behavioral Economics*, forthcoming.

Crano W. D., and R. Prislin. 2006. "Attitudes and persuasion." *Annual Review of Psychology* 57, 345-374.

Dehaene, S., J. P. Changeux, L. Naccache, J. Sackur, C. Sergent. 2006. "Conscious, preconscious, and subliminal processing: a testable taxonomy." *Trends in Cognitive Sciences* 10 (5), 204-211.

Drozdzewski, D. 2014. "Using history in the streetscape to affirm geopolitics of memory." *Political Geography* 42, 66–78.

Enke, Benjamin. 2024. "The cognitive turn in behavioral economics." Mimeo.

Green, T. Clifton, Jame, Russell, Lee, Jaemin and Lee, Jaeyeon, 2024. "Confederate Memorials and the Housing Market". Mimeo

Hall, G. 1991. *Perceptual and Associative Learning*. Oxford University Press.

Hassin, M. J. Ferguson, D. Shidlovski, T. Gross. 2007. "Subliminal exposure to national flags affects political thought and behavior." *PNAS* 104 (50), 19757-19761.

Henderson, Kyshia, Samuel Powers, Michele Claibourn, Jazmin L. Brown-Iannuzzi, and Sophie Trawalter. 2021. "Confederate monuments and the history of lynching in the American South: An empirical examination." *PNAS* 118, no. 42: e2103519118.

Kannarr, S. T., Alderman, D., and Brasher, J. 2025. "From Greenland to Fort Bragg, America is caught in a name game where place names become political tools". The Conversation, March 26, 2025.

Ladam, C., Harden, J. J., Windett, J. H. 2018. "Prominent role models: high-profile female politicians and the emergence of women as candidates for public office." *American Journal of Political Science*, *62*(2): 369-381.

Markus H., and E. Wurf. 1987. "The dynamic self-concept: A social psychological perspective." *Annual Review of Psychology* 38 (1), 299-337.

Mertens S., M. Herberz, U. J. J. Hahnel, and T. Brosch. 2022. "The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains." *PNAS* 119, e2107346118.

Ochsner, Christian, and Felix Roesel. 2024. "Activated History: The Case of the Turkish Sieges of Vienna." *American Economic Journal: Applied Economics*, 16 (3): 76–112.

Oto-Peralías, D. 2018. "What do street names tell us? The 'city-text' as socio-cultural data." *Journal of Economic Geography* 18 (1), 187–211.

Oxley, Douglas R., Kevin B. Smith, John R. Alford, Matthew V. Hibbing, Jennifer L. Miller, Mario Scalora, Peter K. Hatemi, and John R. Hibbing. 2008. "Political attitudes

vary with physiological traits." Science 321, no. 5896: 1667-1670.

Rahnama, Roxanne. 2025. "Monumental Changes: Confederate Symbol Removals and Racial Attitudes in the United States." *The Journal of Politics* 87:1: 158-171.

Riley. E. 2024. "Role Models in Movies: The Impact of Queen of Katwe on Students' Educational Attainment." *The Review of Economics and Statistics* 106 (2): 334–351.

Rose-Redwood, R., D. Alderman, M. Azaryahu. 2010. "Geographies of toponymic inscription: new directions in critical place-name studies." *Progress in Human Geography* 34, 453–470.

Rozenas, A. and Vlasenko, A. 2022. "The Real Consequences of Symbolic Politics: Breaking the Soviet Past in Ukraine," *The Journal of Politics* 84:3, 1263-1277

Schendan, H. E. 2012. "Implicit Memory", in *Encyclopedia of Human Behavior* (Elsevier), pp. 400–409.

Schmidt, H.G., Peeck, V. H., Paas, and F. Van Breukelen, G. J. P. 2000. "Remembering the street names of one's childhood neighbourhood: A study of very long-term retention." *Memory* 8 (1), 37–49.

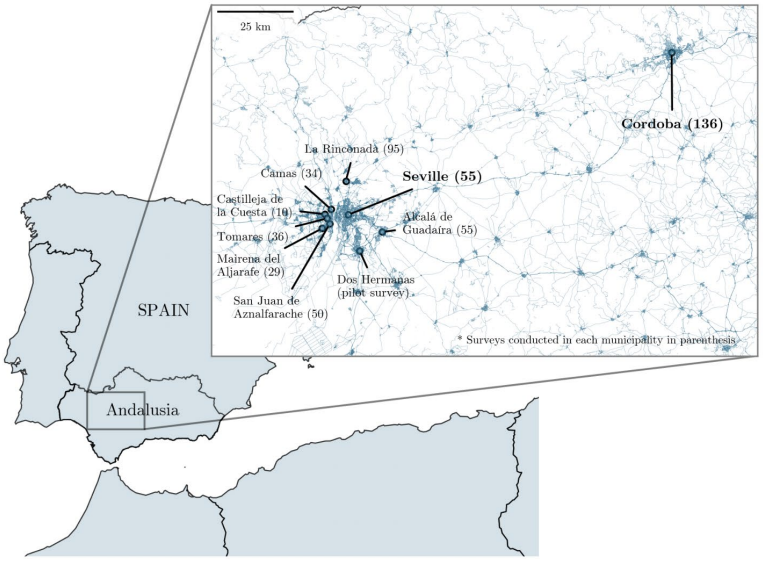
Szaszi B. et al. 2022. "No reason to expect large and consistent effects of nudge interventions." *PNAS* 119, e2200732119.

Tversky A., and D. Kahneman. 1973. "Availability: A heuristic for judging frequency and probability." *Cognitive Psychology* 5, 207–232.

Villamil, Francisco, and Laia Balcells. 2021. "Do TJ policies cause backlash? Evidence from street name changes in Spain." *Research & Politics* 8.4: 20531680211058550.

Vogel T., and M. Wanke. 2002. *Attitudes and Attitude Change*. Psychology Press.

Williams, Jhacova A. 2021. "Confederate Streets and Black-White Labor Market Differentials." *AEA Papers and Proceedings*, 111: 27–31.



STREET NAMES IN THE SAMPLE:

Street name	Best known for	Sex
Niceto Alcalá-Zamora	President of the Second Republic	Man
Rosalía De Castro	Writer	Woman
Antonio Maura	Prime Minister (1900-10s)	Man
Victoria Kent	Politician and women's rights advocate	Woman
Miguel De Unamuno	Writer	Man
Rosa Chacel	Writer	Woman
Blas Infante	"Father" of Andalusian regional identity	Man
Clara Campoamor	Politician and women's rights advocate	Woman
Juan Ramón Jiménez	Writer	Man
Dolores Ibarruri	Left-wing politician	Woman

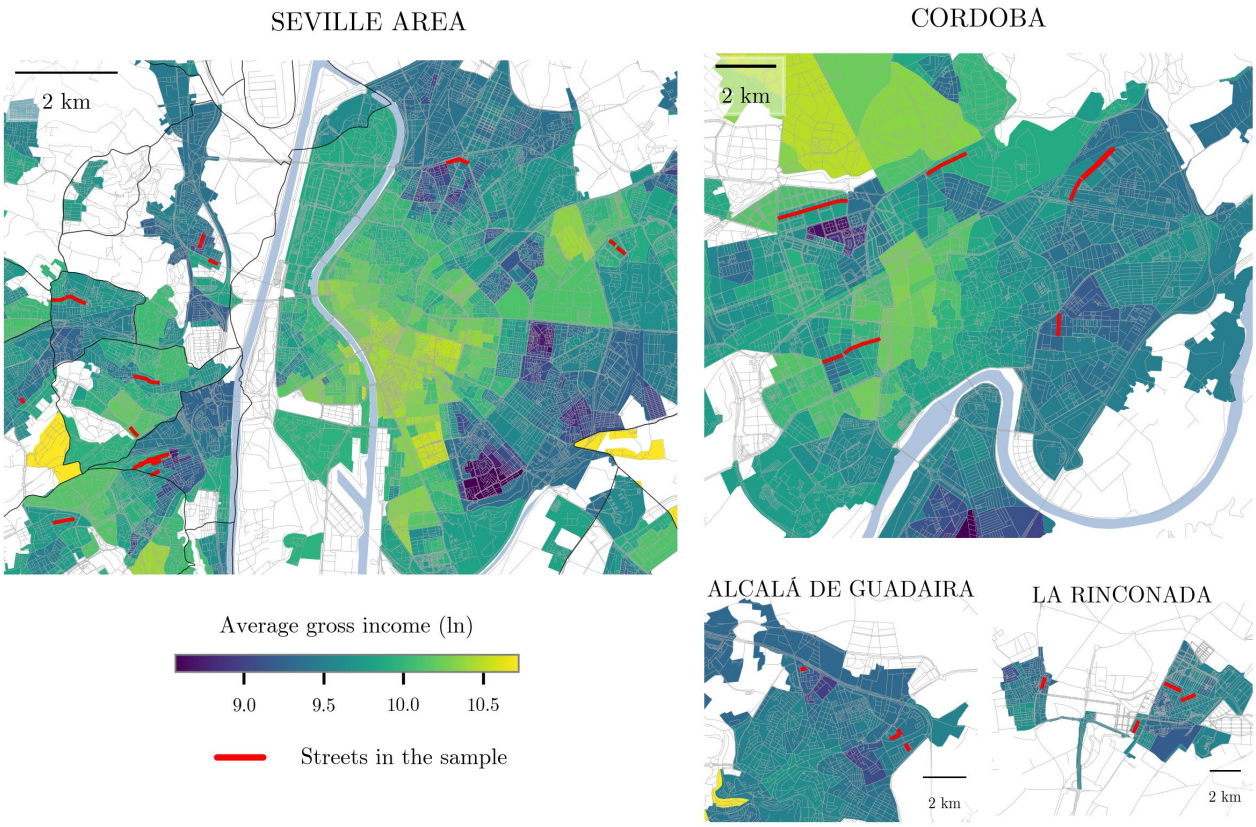


Fig. 1. Survey sample design

Notes: The top map shows the location of the municipalities where the survey is conducted, with the number of observations in each one in parenthesis. The bottom maps show the precise location of each street within the street map of each city along with the average gross income of city neighborhoods (electoral sections) in 2023. Streets were selected based on the following criteria: i) named after an illustrious figure, avoiding very well-known ones, ii) street name exists in at least two municipalities, iii) geographic proximity, iv) middle-class economic neighborhoods, v) accessibility for interviews, vi) enough sample size (number of residents), and vii) no street name change since 2001.

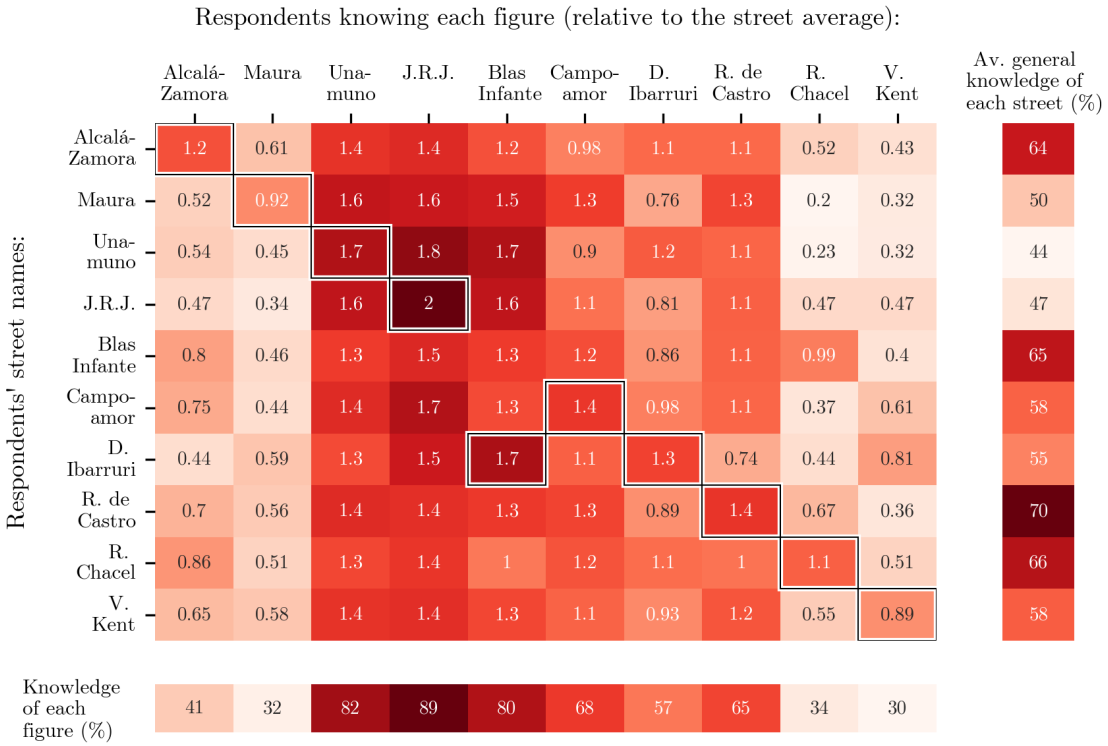


Fig. 2. Street names and knowledge

Notes: This figure shows the knowledge of each figure depending on the street name. Each cell in the main matrix reports the percentage of respondents knowing the profession of the figure, divided by the average general knowledge of residents in each street. The latter is shown on the right bar (the percentage of figures that respondents know on average in each street). The bottom bar shows the percentage of respondents in the whole sample that know each figure. The maximum value of each column is highlighted in the main matrix.

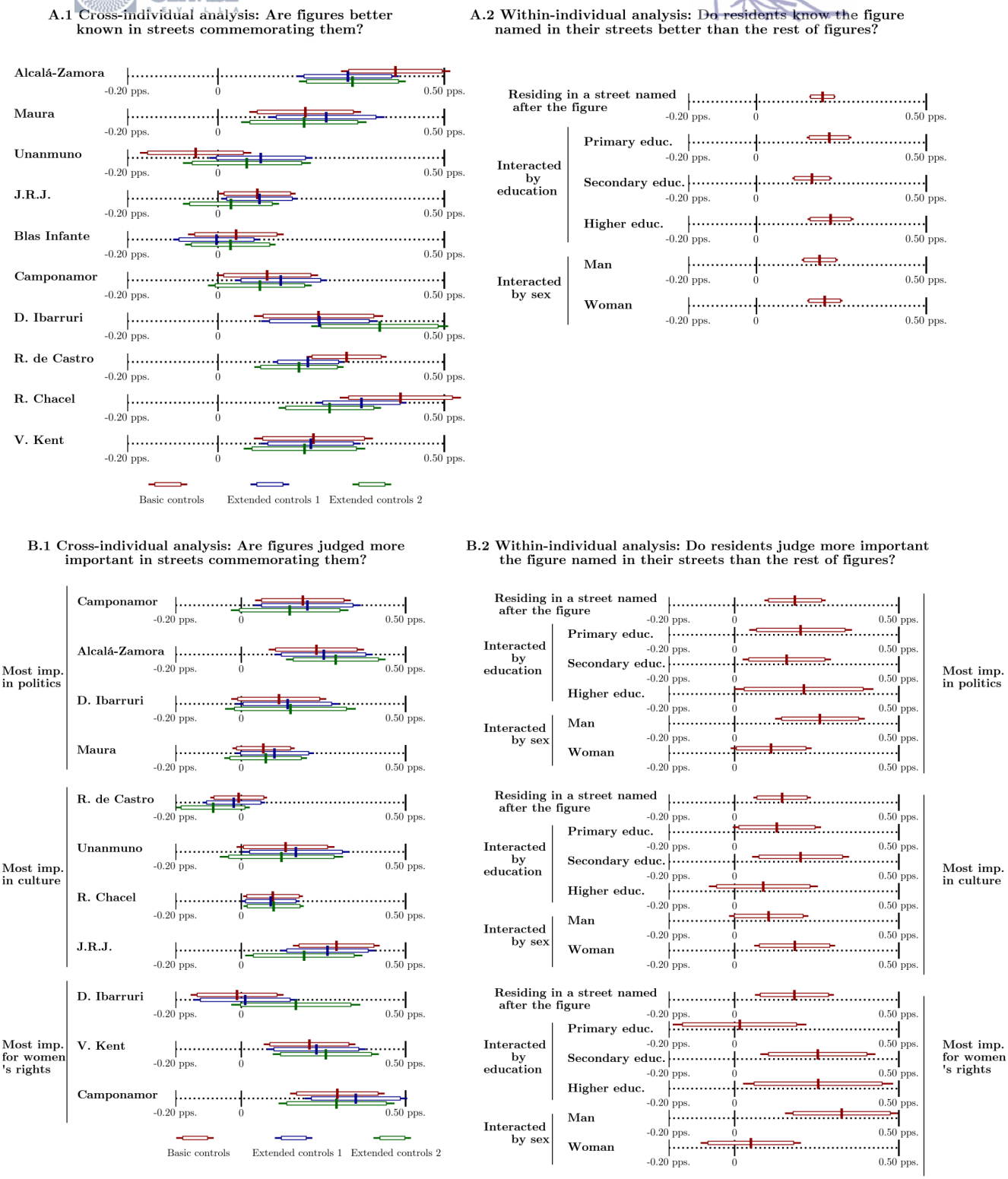


Fig. 3. The effect of street names on knowledge and judgment

Notes: Panel A.1 depicts the coefficients from 10 regressions (N~500) where the dependent variable is whether the respondent knows the profession of each of these figures whereas the independent variable is whether he/she resides in a street named after the figure. Panel A.2 represents the coefficients from within-individual models that show whether the respondent has better knowledge about the figure commemorated in his/her street than about the rest of figures (N=5000). Panel B.1 depicts the coefficients from 11 regressions (N~500) where the dependent variable is whether the respondent judges each of these figures as the most important whereas the independent variable is whether he/she resides in a street named after the figure. Panel B.2 represents the coefficients from within-individual models that show whether the respondent judges more important the figure of his/her street than the rest of figures (N= 2000). The basic set of control variables includes sex, age, age squared, marital status, educational level, and years residing at the current address; extended controls 1 includes the former plus general knowledge, interest in politics, and ideology; and extended controls 2 the former plus six municipality dummies. The 90 and 95% confidence intervals based on heteroskedasticity-robust standard errors (Panels A1 and B1) or clustered at the respondent level (Panel A2 and b2) are reported, along with the point estimates.

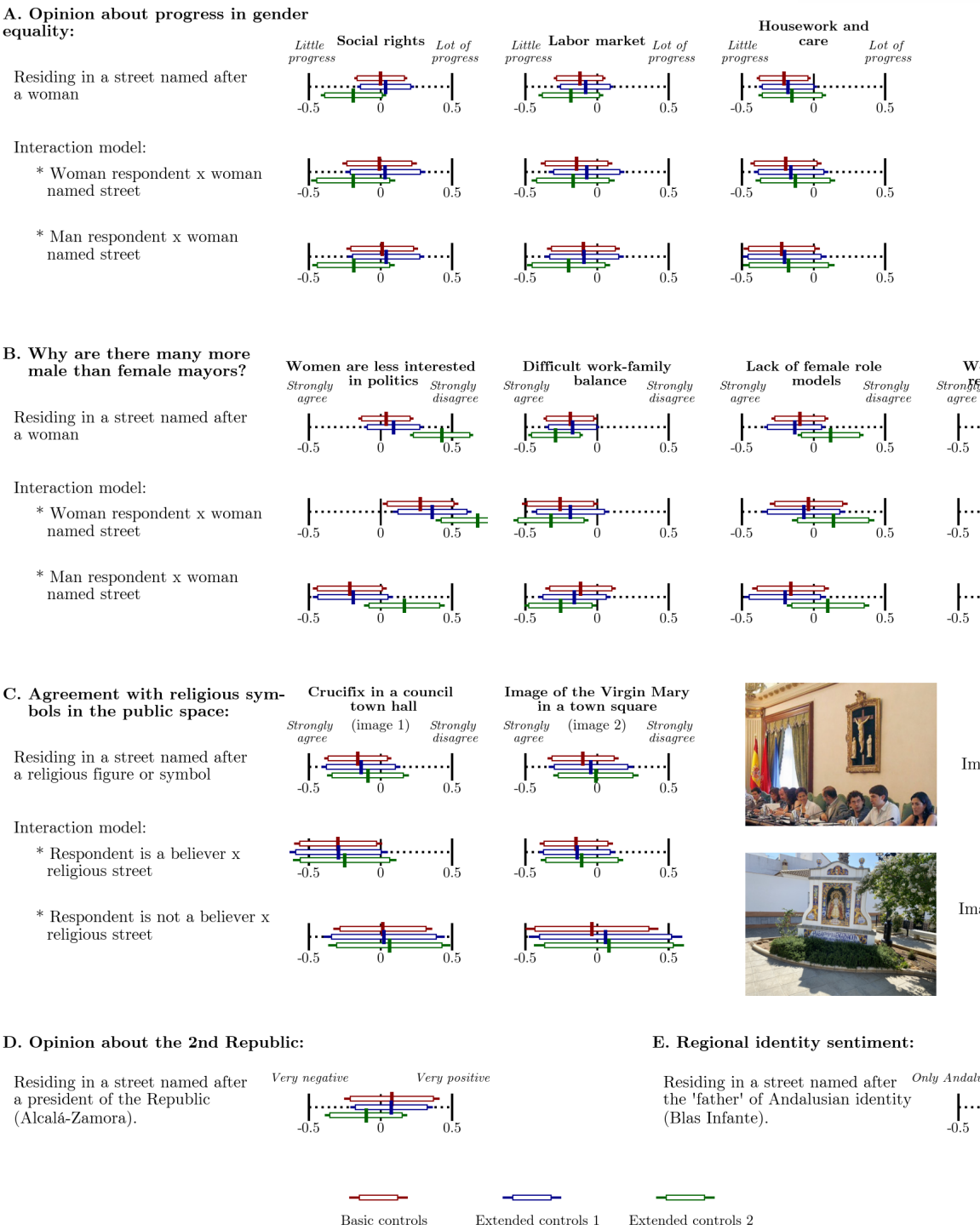


Fig. 4. Street names and attitudes

Notes: This figure shows the coefficients from regressions of variables measuring gender roles, religious, and political attitudes on the street names of the respondents. Panels A, B, D, and E report results from the in-person survey (N~500), whereas Panel C from the online survey (N~600), where images 1 and 2 were shown to the respondents. The dependent variables in the regressions are standardized to a mean of zero and a standard deviation of one. The basic set of control variables includes sex, age, age squared, marital status, educational level, and years residing at the current address; extended controls 1 includes the former plus general knowledge, interest in politics, and ideology; and extended controls 2 the former plus six municipality dummies. Regressions in Panel C do not include general knowledge and municipality dummies (which are not available in the online survey) but additionally include dummy variables capturing the method of distribution of the survey, religiosity (non-believer, non-practicing catholic, practicing catholic, and other religion), and province dummies. The 90 and 95% confidence intervals based on heteroskedasticity-robust standard errors are reported, along with the point estimates.

Table 1. Analyzing selection into street names

Panel A. Survey participants' characteristics by street names

			Civil status			Education				
	Age	Woman	Separated, divorced	Married	Single	Primary, secondary (1st level)	Secondary (2nd level)	Higher educ.	Interest in politics	Ideology
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Niceto Alcalá-Zamora	1.487	-0.027	-0.017	0.04	-0.023	-0.101	0.084	0.017	0.302*	-0.675*
	(2.795)	(0.079)	(0.053)	(0.076)	(0.072)	(0.071)	(0.079)	(0.06)	(0.178)	(0.363)
Antonio Maura	-2.147	-0.019	-0.071	-0.029	0.1	-0.071	0.11	-0.039	0.084	0.312
	(3.161)	(0.083)	(0.056)	(0.084)	(0.081)	(0.077)	(0.083)	(0.06)	(0.211)	(0.365)
Miguel de Unamuno	2.834	0.041	0.119*	0.015	-0.134*	0.128	-0.116	-0.012	-0.105	0.439
	(3.293)	(0.086)	(0.068)	(0.086)	(0.078)	(0.08)	(0.084)	(0.067)	(0.221)	(0.358)
Juan Ramón Jiménez	0.534	0.005	0.094	-0.128	0.034	0.074	-0.015	-0.058	-0.227	-0.891*
	(3.884)	(0.099)	(0.067)	(0.098)	(0.096)	(0.095)	(0.096)	(0.071)	(0.262)	(0.496)
Blas Infante	0.518	0.007	0.026	0.132*	-0.158**	0.152*	-0.034	-0.118*	-0.247	-0.42
	(2.631)	(0.079)	(0.05)	(0.074)	(0.063)	(0.078)	(0.077)	(0.064)	(0.187)	(0.385)
Clara Campoamor	1.42	0.03	0.033	-0.008	-0.025	0.027	0.067	-0.094	-0.283	0.242
	(3.146)	(0.085)	(0.048)	(0.085)	(0.083)	(0.075)	(0.083)	(0.077)	(0.214)	(0.399)
Dolores Ibarruri	-3.154	0.005	0.05	-0.074	0.024	-0.08	-0.03	0.11	0.149	0.068
	(3.56)	(0.096)	(0.067)	(0.095)	(0.093)	(0.087)	(0.094)	(0.081)	(0.237)	(0.408)
Rosalía de Castro	2.258	-0.033	-0.074**	0.031	0.042	-0.107	-0.012	0.119	0.562***	-0.098
	(2.758)	(0.088)	(0.034)	(0.083)	(0.08)	(0.073)	(0.087)	(0.082)	(0.199)	(0.513)
Rosa Chacel	-2.935	0.023	-0.041	-0.009	0.05	-0.003	-0.062	0.065	-0.119	1.076**
	(2.888)	(0.082)	(0.036)	(0.079)	(0.077)	(0.073)	(0.078)	(0.079)	(0.179)	(0.473)
Victoria Kent	-1.325	-0.033	-0.094**	-0.051	0.145	-0.031	-0.016	0.047	-0.131	-0.251
	(2.954)	(0.091)	(0.042)	(0.091)	(0.089)	(0.061)	(0.089)	(0.09)	(0.222)	(0.393)

Panel B. Street names and voting behavior (section-level data from July 2023 General Election)

	# sections honoring the politician	Turnout (%)	Socialist party (PSOE %)	Popular party (PP %)	Left-wing party (SUMAR %)	Far-right party (VOX %)	Left-wing Catalonian Indep. Party (ERC %)
		(1)	(2)	(3)	(4)	(5)	(6)
Clara Campoamor (left wing)	421	-0.993	-0.023	-0.631	0.15	0.308	0.023
		(1.698)	(1.521)	(1.716)	(0.508)	(0.415)	(0.056)
Pablo Iglesias (left wing)	302	0.272	1.022	0.239	-0.429	-0.325	-0.26
		(1.556)	(1.492)	(1.51)	(0.584)	(0.443)	(0.349)
Lluis Companys (left wing, Catal.)	245	0.571	-0.796	-3.173*	1.57	-1.706	1.964
		(3.752)	(4.599)	(1.684)	(1.296)	(1.41)	(2.101)
Calvo Sotelo (right wing)	209	2.028	-2.587	4.674	-1.32	-0.196	-
		(2.035)	(2.938)	(4.037)	(1.19)	(0.785)	
Adolfo Suarez (center-right wing)	193	1.799	-3.373	4.02	-1.186	0.554	-
		(2.676)	(3.596)	(4.131)	(1.228)	(0.894)	
Tierno Galvan (left wing)	171	-0.666	0.343	-0.788	0.457	-0.169	0.043
		(1.29)	(1.35)	(1.672)	(0.719)	(0.79)	(0.071)
Dolores Ibarruri (left wing)	128	-1.267	1.79	-1.284	0.403	-0.516	-0.107
		(1.407)	(1.809)	(1.926)	(0.659)	(0.517)	(0.1)
Victoria Kent (left wing)	102	0.331	0.46	-1.314	0.574	0.349	-0.037
		(1.751)	(2.429)	(2.814)	(0.911)	(0.699)	(0.041)
Primo de Rivera (right wing)	68	1.655	-0.126	2.007	-0.298	-1.231	-
		(3.612)	(3.401)	(5.513)	(1.448)	(1.182)	
Manuel Azaña (left wing)	66	0.193	-0.762	-1.035	0.799	0.645	-
		(2.442)	(1.704)	(2.365)	(1.512)	(1.019)	
Federica Montseny (left wing)	61	-1.097	-0.151	-1.753	0.567	1.262	-0.081
		(2.091)	(2.071)	(2.557)	(1.117)	(0.795)	(0.238)

Notes: The table reports coefficients from regressions where the dependent variable is indicated in the column heading and the independent variable in the row label. Panel A reports results from 100 regressions, with a sample size of 500 observations (survey participants). The regressions include a constant term and a set of 6 municipality dummies, omitted for space considerations. Heteroskedasticity-robust standard errors are reported in parentheses. Panel B reports results from 66 regressions, with a sample size of 1745 observations (electoral sections corresponding to the General Election of July 2023). The regressions include a constant term and a set of 1077 municipality dummies. Clustered standard errors at the municipal level are reported in parentheses. *,**,*** denote statistical significance at the 10, 5, and 1% levels.