Do citizens hold mayors accountable for local conditions? Evidence from Italian municipalities

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Abstract

Using data on 75 big Italian municipalities between 2010 and 2015, this paper looks at the extent to which citizens' evaluations of mayors are responsive to changes in local performance indicators. While local economic and crime measures are found not be associated with mayoral approval ratings, there is a correlation between mayors' popularity and indicators for local public transportation and air quality. Mayors of municipalities where more individuals use public transport and where there is less polluted air enjoy higher approval ratings. Additional analysis shows that this result is driven by very big municipalities (with a population over 500,000) that are more likely to be exposed to high levels of traffic congestion and pollution.

Keywords

Mayors, approval ratings, local public transportation, pollution, Italy

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Accountability is often considered to be a crucial element of a functioning democracy (D'Angelo, King, and Ranalli 2017). Elections are the channel through which the public punishes policy makers who did not deliver on their promises and rewards those who did (Barro 1973; Ferejohn 1986; Sweeting 2012). Nevertheless, the effectiveness of the accountability mechanism is questionable (Hay 2007; Stoker 2010) as there are several problems (including, for example, poor information among the public and lack of clarity as to individual functional responsibility) that make it not easy for citizens to monitor the performance in office of political leaders.

While there is an extensive literature on retrospective voting at the national level, there are far fewer studies looking at how accountability works in local government. This is, however, unfortunate since the large majority of elected officials serve at the local level and their actions have more tangible and immediate consequences on citizens' daily life than measures taken at state (region) or national levels. For instance, local governments are responsible for delivering several public services including transportation, police protection, and trash removal. If residents are happy with these services, we would expect them to reward local politicians. If, by contrast, voters are unsatisfied, it is possible that the popularity of local political leaders will decrease.

In this paper, we use 6 years of data for 75 big Italian municipalities to investigate how much citizens' evaluations of mayors are responsive to changes in local conditions. Our work attempts to contribute to and expand on previous research in four main ways. First, while a lot of studies (see, among others, Balaguer-Call et al. 2015; Sakurai and Menezes-Filho 2008) are based on electoral outcomes (e.g. the probability of an incumbent mayor being re-elected), we rely on approval ratings observed at regular intervals throughout a mayor's time

in office. In order to investigate how citizens' evaluations of mayors respond over time to changes in local conditions, it may be important to use a time-continuous approval measure rather than an indicator that is only available every few years. Second, we study the relationship between mayoral approval and the provision of several salient public services clearly falling under the direct control of the local government[1]. Whereas most existing studies look at how economic and crime conditions affect mayors' approval ratings (see McCabe et al. 2008 and many references thereafter), the quality of the delivery of public goods may also be an important factor shaping people's opinions about the mayors' performance. Third, in contrast to many earlier papers (see, among others, Dickerson 2016; Kinder and Kiewiet 1979) we use objective rather than subjective measures of performance. In our analysis it is assumed that citizens evaluate mayors not on the basis of their perceptions of local conditions, but according to actual local performance indicators. As argued earlier, this approach hinges on the idea that the activities of the local government are visible to people's eyes in the course of their day-to-day life. Fourth, we focus on Italy. Works on the US tend to dominate the empirical literature in this field, and whilst these studies are instructive, it would be rather hazardous to make inferences exclusively based on them. Additionally, Italy is an interesting country to look at since in the last twenty years has undertaken important institutional reforms granting more power and responsibility to lower levels of government (Baldini and Baldi 2014). Such a process is likely to have made local representatives more accountable to citizens. A few studies seem in fact to support this conclusion. Bianchini and Revelli (2013) examine the environmental accountability of local Italian policy makers. Using data on municipal elections in a number of major cities, they find that local environmental performance has a statistically significant effect on the popularity of the incumbent. Burroni, Piselli and Ramella (2009) observe that in Italy there is

a high correlation between mayor approval rating and experts' evaluation of the effectiveness of several public services and goods in a city.

The remainder of the paper is organised as follows. In the next Section we briefly review the results of some studies that investigate factors affecting the electoral success or popularity of local political leaders. Then we describe the variables, data and methods employed, followed by empirical results. Finally, we discuss the findings and the implications of our results.

Determinants of local political leaders' electoral success/popularity

A relatively large body of literature examine the factors determining the electoral success or popularity of local political leaders. The majority of the existing studies focus their attention on the role played by the following three sets of characteristics: economic conditions, crime conditions and provision/quality of public services.

Several papers indicate that attitudes toward local government officials are influenced by economic factors. Local governments are rewarded with continued support in moments of economic prosperity, whereas they become less popular in periods of economic crisis. Hopkins and Pettingill (2017), using data on big-city US mayoral elections between 1990 and 2011, find that low city-level unemployment relative to national unemployment is associated with a higher incumbent vote share. Martins and Veiga (2013) show that in Portugal national economic conditions have an effect on municipal electoral outcomes. When the same political party governs at national and local levels, the local government is punished if the national unemployment rate increases. Additional evidence on the importance of economic conditions is provided by Arnold and Carnes (2012) who analyse the determinants of the popularity of New York's mayors. Their work shows that worsening local economic

conditions, proxied by an economic misery index, are associated with a decrease in the mayors' approval rating.

Given that security is often considered by people as one of the most urgent and challenging problems our societies are facing today, several papers examine the relationship between general safety or crime and local electoral success. Rydgren and Ruth (2010) show that in Sweden support for radical right-wing parties is higher in municipalities where crime is more likely to occur. Howell and Marshall (1998) find that black's electorate confidence in local black government declined in New Orleans between 1985 and 1994 as a result of rising crime rates. Other studies analyse how combating crime and corruption affects mayor's electoral success. McNitt (2010), using data on 19 major US cities between 1820 and 1995, concludes that mayors improving law enforcement, which includes facilitating non-routine crackdowns on crime and corruption as well as increasing the size and professionalism of police forces, serve longer in the office.

Whilst most previous studies focus on economic and crime conditions, only a few examine the role of other aspects of performance. In particular, the service-related dimensions appear to be overlooked. One would expect citizens to hold mayors accountable for the quality of services they receive. Howell and Perry (2004) show that mayor's popularity is strongly correlated with citizens' satisfaction about different city services. Burnett and Kogan (2017) suggest that the quality of local roads impacts on city elections. Specifically, they show that in San Diego pothole complaints have a significantly negative impact on incumbent's vote share. Arceneaux (2006) finds that traffic congestion has an effect on city-level voting behaviour (as long as citizens attribute functional responsibility to the city government).

Variables, Data Sources and Methodology

In order to analyse the extent to which citizens' evaluations of mayors respond to changes in local conditions, we pool data on 75 cross-sectional units (i.e. big/more populous Italian municipalities- see Appendix A for a list of the municipalities considered in this study[2]), along a time span of 6 years (i.e. 2010-2015). Before outlining the model, it is important to provide definitions and data sources for all the dependent and independent variables.

Dependent variable

Mayoral approval rating is our dependent variable. Data on this variable come from the annual public opinion polls conducted by IPR marketing and published by the financial daily newspaper ilSole24ore. They cover all Italian big municipalities and have been held since 2010. Between 600 and 1,000 citizens are sampled in each municipality between mid-September and mid-December each year. Respondents are representative of the adult population from which they were sampled with respect to (i) gender, (ii) age and (iii) area of residence. Data are collected using Computer-Assisted Telephone Interviewing (CATI), Computer Assisted Web Interviewing (CAWI) and Computer Assisted Personal Interview (CAPI). Interviewees are asked the following question: "I would like to ask your opinion on how the mayor of your municipality has performed during this year. If municipal elections were held tomorrow, would you vote against or in favour of the incumbent mayor?". Mayoral approval ratings are only given as a percentage of the respondents who intend to vote in favour of the incumbent mayor in each big municipality. Mayor approval in our dataset ranges from 38 to 71 percent, with a mean of 53.6 percent.

Independent variables

Mayors' responsibilities are taken into account in selecting the main independent variables of the model. In Italy, mayors are chief executives of their respective municipalities. Municipality governments are responsible for various services including local police and public transportation systems. Additionally, they play an important role in protecting the environment, for instance in terms of managing the waste and preserving air quality.

Our indicator for public transportation is the number of annual passengers using local public transport per inhabitant. Although this is a measure capturing the intensity/frequency of public transport usage, several papers (Rickwood and Glazebrook 2009; Wang and Liu 2015) show that it is strongly related to the quality of services provided. An accessible and reliable local public transportation system improves users' satisfaction and their loyalty and attracts new users (Perk, Flynn, and Volinski 2008). Data on our indicator for public transportation are available at municipality level, come from the Italian National Statistical Institute (ISTAT) and cover the 2010-2015 period (though there are three municipalities with one or two missing data points).

Two different local environmental measures are employed. While the first measure is the annual percentage of waste recycled, the second one is the annual average concentration of $PM10^3$. Data on the latter come from the National Statistical System (SISTAN), whereas data on the former are from the Institute of Environmental Protection and Research (ISPRA). For both measures data are available at municipality level between 2010 and 2015 (though data on the annual average concentration of PM10 are not reported for a few municipalities, while for others some years are missing). An independent environmental organization (Legambiente) has been conducting a significant campaign in Italy since the mid-2000s in

order to increase local community awareness about environmental issues. Among other initiatives, Legambiente, in collaboration with IlSole24ore, has been regularly publishing information on the environmental performance of all big Italian municipalities with respect to several aspects, including waste recycle and air quality. Municipalities are also ranked according to the scores received in these aspects. Importantly, this information receives a lot of media attention. Many national and local newspapers as well as television programs openly debate about the environmental performance and the ranking of big municipalities.

The annual number of muggings and pickpocket incidents per 10,000 inhabitants is used in an attempt to measure the relationship between general safety and mayoral approval ratings. Unfortunately, data on this crime measure are only available at provincial level rather than at municipality level. They are from the Ministry of the Interior and are available between 2010 and 2015. Local police, together with other police forces, are responsible for the maintenance of security and public safety in the municipality.

As shown in the previous Section, despite the fact that locally elected officials have little or no power over the economy, it is still possible that economic conditions have a bearing on their popularity. Hopkins and Pettingill (2017) argue that economic conditions tend to be widely covered by local news outlets. We use two indicators for economic conditions. The first indicator is annual real income per capita. Data on this variable come from the Ministry of Economics and Finance, are available at municipality level and cover the 2010-2015 period. The second economic indicator is annual unemployment rate. Data on this variable come from ISTAT and cover the 2010-2015 period. They are, however, only available at provincial level. Nevertheless, given that all selected municipalities are “big” municipalities whose inhabitants make up a substantial part of the population of the province they belong

to[4], one would expect municipality and provincial unemployment rates to be highly correlated[5].

Additionally, although Italian municipalities rely mostly on central government lump-sum grants, they may impose a surcharge on personal income tax (addizionale comunale sull'Imposta sul Reddito delle Persone Fisiche - IRPEF). This municipal tax is included among the independent variable of the model in order to investigate whether local taxes affect the popularity of mayors. Data on this variable are from the Global Laboratory (http://www.globallaboratory.it/pit/addcom/index.html) and cover the 2010-2015 period (though they are unavailable for one municipality and there are two municipalities with two missing data points).

Next, some control variables are included in the model to account for the influence that other factors may have on mayoral approval rating.

The percentage of foreign people living in each municipality is employed in an attempt to capture the public's resentment towards immigrants[6] in Italy. A substantial proportion of Italians consider immigration to be a big problem, though there is significant geographical variation in opinions (Genovese, Belgioioso, and Kern 2017), and politicians[7] are often blamed for not setting up tighter restrictions on it. A survey conducted by the Pew Research Center's Global Attitudes Project in 2009 found that more than 8 out of 10 Italians say that "we should restrict and control entry into our country more than we do now" (Horowitz 2010). Data on the share of foreigners on total population are from ISTAT and are available between 2010 and 2015.

In line with previous studies, our model comprises also population change among the determinants of mayoral approval ratings. However, the expected effect of this factor is unclear. On the one hand, Logan and Molotch (1987) note that population growth is a great accomplishment for mayors, affecting their career trajectory. On the other hand, McNitt (2010) argues that rapid population growth may be associated with a decrease in a mayor's tenure. Data on this variable come from ISTAT and cover the 2010-2015 period.

Finally, we attempt to account for the so-called "honeymoon effect" (Carrion 1998) and "coat-tail effect" (Kaplowitz 1971). The rationale behind the first effect is that political leaders (including mayors) tend to benefit from a large stock of popularity in the period immediately after their election. Grossman and Kumar (1981) argue that this could be driven by greater media attention. Arnold and Carnes (2012) provide empirical evidence on the great importance of this effect.

The coat-tail effect refers here to the possibility that the popularity of the Prime Minster rubs off on the mayors who are affiliated to the same political party/coalition. This may happen when individuals show different levels of involvement for different levels of government. Some people, who pay more attention on the way the national government handles national problems relative to how local politicians deal with sub-national issues, may believe that the Prime Minister is doing a great job, and this opinion may positively affect their perception of the performance of other lower-level political leaders of the same party/coalition. Scroop (2002) argues that, following September 11th, the war on terrorism conducted by President Bush had the potential to produce a coat-tail effect; that Bush's personal popularity could spill over to Republican candidates at the state and local levels.

Model specification

Following the approach of Arnold and Carnes (2012), we estimate a first-difference model. Changes in approval are related to changes in our independent variables. The following model is used for the estimation:

$\Delta Y = \beta_0 + \beta_1 \Delta$number of passengers using public transport + $\beta_2 \Delta$percentage of waste recycled + $\beta_3 \Delta$concentration of PM10 in the air + $\beta_4 \Delta$number of muggings and pickpocket incidents + $\beta_5 \Delta$income per capita + $\beta_6 \Delta$unemployment rate + $\beta_7 \Delta$surcharge on personal income tax + $\beta_8 \Delta$percentage of foreigners + $\beta_9 \Delta$population + β_{10} honeymoon effect + β_{11} coat-tail effect + μ

where Y is the dependent variable, mayoral approval rating, and Δ denotes year-to-year changes in the variables. Honeymoon effect is a dummy variable taking the value of 1 if there was a change in mayor's office, 0 otherwise. Coat-tail effect is a dummy variable taking the value of 1 if, during the relevant period, the mayor was affiliated to the same political party/coalition of the Prime Minister, 0 otherwise. The error term is μ.

An important advantage of this first-difference model is that time-invariant determinants of approval cancel out. This reduces the misspecification problem as a result of omitted variable bias deriving from unobserved characteristics that remain constant over time. This includes, for instance, determinants of mayoral approval ratings that vary across municipalities but are constant over time. An additional advantage of the first-difference model is that it is less likely to violate some ordinary least squares (OLS) assumptions. First-difference variables are more likely to be stationary than absolute level variables. Furthermore, the first-difference model is less likely to suffer from the residuals autocorrelation problem (Longhi and Nandi 2015).

Year-to-year dummies are added to the independent variables of our model in order to account for the effect of national factors on mayoral approval. Specifically, national level economic conditions such as inflation and evolution of government debt have been shown to affect electoral outcomes. Veiga and Veiga (2010) conclude that macroeconomic variables exert a considerable influence on voting in Portugal. Since year-to-year dummies pick up the effect of factors uniformly affecting all cross-sectional units over time, they basically capture the average effect of omitted macro-variables (Elinder 2010).

Results

Table 1 presents the OLS estimates for our model. Standard errors have been clustered at municipality level in all regressions to account for within-municipality correlation in errors. Given that, as mentioned earlier, data on the 2010-2015 period are not available for all our independent variables, estimates are reported for three different specifications. We start with a specification that includes the independent variables with no missing data points. Therefore, Column 1 presents results when measures for economic and crime conditions, population, share of foreigners on total population, our proxy for waste management and indicators for the honeymoon and coat-tail effects are all included in the model. The other three independent variables are progressively introduced in the next two specifications. In Column 2 we add to the specification our proxy for public transportation. Results for the full specification, which also includes our indicators for air quality and local taxes, are shown in Column 3. Finally, in Column 4 we employ the same specification as in Column 3 but with lower-quality data for the concentration of PM10 in the air[8]. One should note that the variance inflation factor (VIF) is always below 10, suggesting that these independent variables pose no collinearity problems in running regression analysis (Myers 1990).

Insert Table 1 about here

Looking at the estimates shown in Column 1, one may observe that the coefficients on both our economic variables are statistically insignificant at conventional levels. However, while the coefficient on unemployment rate[9] has the expected negative sign, the sign of the coefficient on income per capita is not in line with expectations. Additionally, our estimates show that there is no statistically significant relationship between changes in mayor approval ratings and changes in the number of muggings and pickpocket incidents. The size of the coefficient on our crime indicator is very small and its sign is also unexpectedly positive. Similarly, changes in population are not associated with changes in mayoral approval. The coefficients on the percentage of waste recycled and share of foreigners on total population have the expected signs (positive and negative, respectively), but are statistically indistinguishable from zero.

We also find that there is no significant effect on approval when mayors are affiliated to the same political party/coalition of the Prime Minister. Perhaps this result is partially driven by the fact that between November 2011 and April 2013 technocrat Mario Monti served as Prime Minister in the wake of the Italian debt crisis. On the other hand, the results indicate that people award some sort of honeymoon to newly elected mayors. Mayors are found to enjoy a nearly 7 percentage point boost in approval during the year in which they were first elected.

Moving on to the estimates reported in Column 2 of Table 1, one may note that the coefficient on our measure for public transportation is positive and statistically significant. An increase in the number of passengers using local public transport per inhabitant is

associated with higher approval ratings. This result would seem to suggest that mayors' popularity is influenced by the extent to which people use local public transport. Local public transportation is one of the most important city services as it is a daily feature on many citizens' life. Our findings are consistent with those of a report carried out by ISTAT (2013) showing that there is a strong relationship between the quality of public transport and confidence in the municipal government. More specifically, a quantitative model suggests that switching from a high quality public urban transport system (measured by a score between 8 and 10 out of 10) to a low quality public urban transport system (measured by a score between 0 and 5 out of 10) increases the likelihood of obtaining a low score in terms of confidence in the municipal government by 75 percent. A good local public transportation system is likely to be especially appreciated by people living in very big municipalities where their ability to get around is increasingly hampered due to traffic problems.

When looking at the results shown in Column 3 of Table 1, one can see that the coefficient on our measure for air quality has a negative sign and is statistically significant at the 5 percent level. An increase in the average concentration of PM10 in the air is correlated with lower approval ratings. Such a finding would appear to indicate that many citizens are concerned about pollution in the air that they breathe and consider important for city leaders to commit to environmental protection. This may reflect people's increased awareness about the adverse effects of air pollution on health. Our results are in line with those of a recent Eurobarometer survey (European Commission 2017) showing that Italians are among the EU citizens most concerned about air pollution and how this environmental issue may affect them personally. A large majority of Italians think that air quality has deteriorated in their country in the past ten years and want more to be done to protect the environment. The environmental problem is especially severe in many big cities that have difficulties in meeting air quality standards

most likely as a result of traffic congestion. On the other hand, the coefficient on our indicator for local taxes has not the expected sign and is not statistically significant. The surcharge on personal income tax has not been changed by a large number of municipalities in the period considered here. Additionally, the tax rate is pretty low (up to 0.8 percent).

Estimates presented in Column 4 are very close to those shown in Column 3. The coefficient on our proxy for public transportation is practically unchanged and remains significant. The coefficient on the concentration of PM10 in the air has still a negative sign and is still statistically significant at conventional levels.

Next, we re-estimate our model using different indicators for economic and crime conditions. Crime rate is now proxied by the number of homicides per 10,000 inhabitants[10]. Although muggings and pickpocket incidents are obviously much more frequent than homicides, it is possible that the latter may especially attract people's attention given their wide television and press coverage. Inflation rate[11] is employed as an alternative measure for economic conditions. In Columns 1, 3 and 4 of Table 2 we replicate the estimates of Columns 1, 2 and 3 of Table 1, replacing our economic and crime indicators with inflation rate and the number of homicides per 10,000 inhabitants, respectively. In Column 2 of Table 2 we use the same specification as in Column 1, but we also add to the independent variables unemployment rate and an interaction between this factor and inflation rate.

Insert Table 2 about here

Estimates reported in Table 2 are largely consistent with those shown in Table 1. Economic and crime conditions do not appear to matter. While the coefficients on our economic and

crime measures are consistently found to have the expected sign (excluding the above interaction term), none of them turn out to be statistically significant at conventional levels. On the other hand, the results confirm the statistically significant relationship between mayoral approval ratings and indicators on local public transportation and air quality. The honeymoon effect is also robust to the inclusion of alternative indicators for economic and crime conditions.

Given that the estimates of Tables 1 and 2 consistently suggest that mayors' popularity is associated with performance indicators on local public transportation and air quality, it is interesting to investigate whether this result is driven by very big municipalities. As argued above, public transportation and air quality may be particularly valued by citizens of densely populated areas like major cities. These areas are likely to severely suffer from both traffic congestion and pollution. In order to test this hypothesis, in Columns 1, 2 and 3 of Table 3 we replicate the estimates of Columns 2, 3 and 4 of Table 1 excluding from the sample municipalities whose population is over 500,000 (i.e. Milan, Naples, Turin, Palermo and Genoa). The coefficient on the number of passengers using local public transport per inhabitant and that on the concentration of PM10 in the air are no longer statistically different from zero. The coefficient on our measure for public transportation even has an unexpected negative sign. These results are consistent with our hypothesis that once very big municipalities are removed from the sample, there is no statistically significant relationship between mayor approval ratings and our objective performance indicators on public transportation and air quality.

On the other hand, the honeymoon effect is still found to be statistically significant and substantively large. Mayors are found to have a honeymoon with the public in densely and less densely populated areas during the period immediately after their election.

Insert Table 3 about here

Discussion and Conclusions

Using data on 75 big Italian municipalities between 2010 and 2015, this paper has investigated the extent to which citizens' evaluations of mayors are affected by changes in local conditions. Local economic and crime indicators are not found to be related to mayoral approval ratings. This result is robust to several alternative measures of economic and crime conditions. Although the reasons for such a finding are unclear, three different explanations can be put forward. First, people may be unable or unwilling to update their political preferences based on evaluations of economic and crime performances (Key 1966; Fiorina 1981). This is because these evaluations tend to be strongly influenced by pre-existing political opinions. As suggested by the psychological literature, there is a strong tendency for individuals to accept information as true only if it is in line with their own prior beliefs, whereas they reject or counterargue information that does not confirm their prior beliefs (Kunda 1990; Lord, Ross, and Lepper 1979). Similarly, it is also possible that people's perceptions about local economic and crime conditions are different from actual performances because of biased information provided by the media and governments. Second, citizens may not hold mayors accountable for issues that they feel are beyond mayors' control such as economic and crime conditions. Citizens may believe that this is mainly the responsibility of the central government. Italy's economy has considerably worsened since 2007 and citizens are unlikely to hold mayors responsible for such a

prolonged period of crisis. Similarly, although mayors manage local police, there are many circumstances where there is little they can do to increase public safety. For instance, in the South of Italy there is a significant and historically rooted presence of organized crime of *mafia* type (Daniele and Marani 2011), and mayors clearly do not have the resources to deal with this problem alone. Third, one cannot completely rule out the possibility that our results are driven by the use of crude measures for local economic and crime conditions. Data on the large majority of these indicators are, unfortunately, only available at provincial level rather than at municipality level. Finally, one should also observe that our result is consistent with that of several papers concluding that local crime and economic conditions do not matter for the approval of local political leaders. Sarprieto (2014), using data on 278 Portuguese mainland municipalities for the 1976-2009 period, finds that local economic conditions (proxied by unemployment rate and per capita purchasing power) have no impact on the mayor's re-election prospects. Heberlig et al. (2017), employing data on 104 US cities with populations over 160,000 between 1992 and 2012, conclude that income growth is unrelated to the mayor's chances of being re-elected. Park and Norpoth (2016) look at the determinants of governor approval in Arizona and find that the coefficient on crime is insignificant in every model specification.

Our estimates suggest that citizens give higher levels of approval to mayors of municipalities where more people use public transport. Public transport is especially relevant in Italy where people travel long distances daily. Using data from the Eurobarometer survey, Legambiente finds that Italians travel the longest daily distance (i.e. 41 Km) in Europe[12]. Evidence that Italians care a lot about public transportation emerges also from surveys conducted in big cities. For instance, a survey suggests that in Rome about 40 percent of the population consider public transportation as one of the top priorities of the municipality[13].

There is a negative relationship between mayoral approval ratings and the concentration of PM10 in the air. This is consistent with the findings of an ISTAT survey (ISTAT 2012) where many respondents indicate atmospheric pollution as the most important environmental concern Italy is facing today and state that environmental protection should be ensured by institutions. It is also possible that increased media coverage on environmental problems has made citizens more likely to correctly attribute responsibility to mayors (Mortensen 2013)

While local indicators on public transportation and air quality are found to be related to mayors' popularity, further analysis shows that this result is driven by very big municipalities (i.e. those with a population over 500,000). This is not particularly surprising given that major cities are the ones most likely to be plagued by traffic congestion and air pollution. Not only are these issues responsible for poor air quality, but an effective public transportation system is a necessity for many people living in these cities.

Declaration of Conflicting Interests

No potential conflict of interest was reported by the author.

Notes

1. This is very important as citizens may have dismal levels of awareness of who delivers which services (de Benedictis-Kessner 2016).

2. Between 2010 and 2015 there were 110 big municipalities in Italy. However, during this period annual data on mayoral approval are consistently available only for 75 of them.

3. PM10 is fine particles stemming from combustion within car engines, solid-fuel combustion in households, industrial activities (such as building, mining, manufacturing of cement, ceramics and bricks, and smelting), quarrying and mining.

4. All municipalities considered in this study are capitals of the provinces that take the same names. For instance, the province of Milan is composed by several municipalities whose the most important/the biggest one is the municipality of Milan.

5. To support this argument, we correlate data on unemployment rate among individuals aged 15-64 for the municipality of Milan between 2004 and 2011 (http://www.datiopen.it/it/opendata/Comune_di_Milano_Indicatori_occupazione_per_anno_e_genere_et_15_64_) with similar data for the province of Milan. The value of the correlation coefficient is very high, i.e. 0.91.

6. Using data on 20 countries between 2002 and 2012, Hatton (2016) shows that pro-immigration opinion is negatively related to the share of immigrants in the population.

7. Politicians at all levels of the government are somehow involved in the handling of the immigration issue given that the Italian government has increasingly attempted to share the burden of immigration across different regions, provinces and municipalities.

8. In an attempt to gain a slightly bigger sample size, we replace some of the missing observations by linear interpolation for those municipalities for which there are two or more years of data available.

9. It is important to note that in our analysis there is no point in using an alternative unemployment rate measure such as the difference between changes in local (provincial) unemployment rate and changes in national unemployment rate. This is because the inclusion of year-to-year dummies allows us to account for any variation between local and national-level variables. Additionally, F-statistic values (available upon request) show that in all regressions year-to-year dummies are jointly statistically significant at the 5 percent level. This indicates that, as expected, national level variables (i.e. capturing factors changing across years that influence all municipalities equally) do affect mayor's popularity.

10. Data on this variable are available between 2010 and 2015 only at provincial level and come from the Ministry of the Interior.

11. Data on this variable are only available at provincial level, cover the 2010-2015 period, and are from ISTAT. However, these data are not reported for several municipalities, while for others some years are missing. Some researchers (see, among others, Kernell 1978) argue that inflation rate has the potential to have more bearing on approval ratings than

unemployment rate. This is because while unemployment affects a sub-group of the population, inflation impacts the whole population.

12. http://www.travelnostop.com/news/trasporti/trasporti-pubblici-maglia-nera-per-gli-italiani_53113 (Accessed 19 April, 2017).

13. http://www.ecodallecitta.it/notizie/384738/eurobarometro-roma-ultima-in-classifica-tra-le-capitali-per-qualita-della-vita (Accessed 5 June, 2017).

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