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RESEARCH NOTE: NULL FINDING

Did the citizenship income scheme do it? The supposed electoral consequence of a flagship policy

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Abstract

In the aftermath of the 2022 Italian legislative elections, but also during the entire electoral campaign, several claims were made that much of the electoral support for the Five Star Movement had been triggered by the '*Reddito di cittadinanza*' – the welfare policy introduced in 2019 by the yellow–green government. This research note first distinguishes between distributive politics and policy voting, and then explores the empirical relationship between the geographical provision at the municipal level of the citizenship income and the vote for the party led by Giuseppe Conte. While traditional multivariate analyses fail to reveal any spurious relationship, matching techniques help highlight the absence of any causal relationship between the two variables.

Introduction

Two weeks after the legislative elections held in Italy in September 2022, Luigi Marattin, a reappointed Member of Parliament for the Italia Viva party, posted on Twitter a graph showing the almost perfect correspondence between the number of votes received by the Five Star Movement (M5S) and the number of citizens receiving the '*Reddito di cittadinanza*' (RdC) in the same regions.

The RdC is a minimum income scheme introduced by the first cabinet headed by Giuseppe Conte at the beginning of 2019 (Checchi *et al.*, 2021). It provides 'a monetary benefit targeted to poor households conditional on participation to job-search activities' (Guardiancich *et al.*, 2022). At that time, Conte was the head of government of a yellow–green coalition, and the RdC was the flagship reform of the M5S. The same association was confirmed by Angelucci *et al.* (2022) using the more appropriate provincial percentages, though they also warned about the risk of ecological fallacy, rightly interpreting the association as a relationship between vote and economic distress.

However, while the usual mantra that 'correlation is not causation' obviously applies also in these circumstances, the doubt that something more than simple conjunctural association was at work cannot be dismissed. This research note tries to take that small step further, moving from correlation to causation. Its title derives from a famous article (Wand *et al.*, 2001) in which the authors used a natural experiment to establish a causal relationship in the field of electoral studies. There is no natural experiment available in this case, and I here apply a matching technique for observational data that is more common in other research fields (Negri, 2023).

The short reply to the title's question is 'no', the RdC has not triggered a specific support for the M5S, but the full answer needs a slightly longer journey. In the following section, I introduce

the theoretical expectations regarding a link between policy effects and electoral behaviours, and discuss some of the most common methodological caveats. Then, I review the empirical evidence using municipal data, and apply some standard procedures to control for spurious associations. Finally, I apply coarsened exact matching (CEM) to approximate the conditions that allow the support for causal claims (Iacus *et al.*, 2012). An online Appendix provides further descriptive statistics and robustness tests, together with some recent survey results that are relevant for my argument but that cannot be included here due to space limitations.

Between distributive politics and issue voting

'Politics also distribute goods' (Stokes *et al.*, 2013: 3). Unless that distribution is contingent on an individual's political support, benefits that turn out to be geographically concentrated are part of the democratic game. While the tweet by Marattin hinted at some kind of pork barrel or constituency service whereby the main government party exploited its pivotal position to target substantial benefits on areas from which it expected significant electoral returns, it is difficult to apply the categories of non-programmatic strategies to the association between the RdC and support for the M5S.

Clientelism, for instance, is characterized by direct, asymmetrical, and personal exchanges (Kitschelt, 2007): three characteristics that cannot be attributed to the case discussed here. The potential exchange is not direct, since there is a temporal gap between benefits and possible electoral return; it is not asymmetrical, since politicians cannot monitor or sanction defiant voting behaviours; and it is not personal, since the citizenship income is not selectively attributed to individuals but is a broad welfare policy with publicly defined entitlement criteria.

The fact that a large segment of the population in need of public resources to support their life conditions and as a means to overcome their limited chances of entering the labour market is unevenly distributed across Italy is not sufficient to conceive the RdC policy as a targeted electoral subsidy. However, this does not rule out the possibility that voting behaviour was actually influenced by a positive judgement of that policy. This possibility reverses the previous top-down perspectives, focusing bottom-up on the preferences of the voters.

Usually, issue or policy voters are presumed to be rational actors, choosing to support candidates and parties that have provided, or promise to provide, the kind of policies that they prefer the most. 'When it comes to specific policy preferences, self-interest indeed seems to matter' (Kumlin, 2007: 370). Prospective and retrospective policy evaluations are normally supposed to require a great deal of information and political sophistication on behalf of the voters. These cognitive capacities have been often considered limited to a small, highly educated segment of the electorate, while most voting choices are thought to depend on party loyalty or candidate image.

However, this is not necessarily the case. Carmines and Stimson (1980) distinguished between hard- and easy-issue voting, the latter occurring 'when a particular issue becomes so ingrained over a long period that it structures voters' "gut responses" to candidates and political parties' (78). Maybe the period since the formulation of the citizenship income is not so long, but its overall understanding and perception does not require a great deal of sophisticated reasoning. In fact, much of the 2022 electoral campaign revolved around the protraction, transformation, or abolition of the welfare measure, eliciting opposite gut feelings, and polarizing the electorate.

Once (and if) a policy catalyses that kind of attention, gaining salience in the voters' eyes (Fournier *et al.*, 2003), it can act as a sort of cognitive shortcut for the overall comparative evaluation of parties and candidates (Costello *et al.*, 2021). On the one hand, the simplistic choices that characterize easy issues are accessible to everyone, and especially to the least sophisticated portions of the electorate (Carmines and Stimson, 1980). On the other, by becoming the central focus of those judgements, the issue does not concern solely the beneficiaries of the policy; rather, similarly to the economic vote, it can orient the voting choices of the larger public.

This legitimizes the contention that the citizenship income triggered the voting behaviour of the electorate, favouring the M5S in the areas of the country in which there were comparatively more RdC recipients.

Maps and confounders

While correlation does not imply causation, the latter requires the former. By comparing the maps of the distribution of the RdC and of the percentages of votes received by the M5S, it is thus possible to gain some indicative clues concerning the plausibility of a causal relationship between the two quantities.

I computed the support for the M5S at the municipal level from the official data published by the Ministry of the Interior. For the distribution of the citizenship income, I used data provided by the National social security agency (Istituto Nazionale della Previdenza Sociale - INPS) at the same granularity in the year before the election – which is the usual temporal horizons of voters considered by the relevant retrospective literature. Figure 1 shows side by side the map with the percentage of votes for the M5S and the one with the percentage of citizens receiving the welfare benefit.

The match between the two maps is impressive. Numerous municipalities, especially in southern regions, had an above average concentration of both M5S votes and citizenship incomes, but many other factors could account for a relationship that in fact may be spurious.

Firstly, the support for the M5S in the previous 2018 election, that is, before the introduction of the RdC, reflected the same geographic pattern (Biancalana and Colloca, 2019). Secondly, the different levels of electoral participation, with abstentionism potentially triggered by a widespread sense of distrust in mainstream politics, which, in the past, had contributed to the success of the party founded by Beppe Grillo (Cerruto and Raniolo, 2018). Thirdly, and most importantly, scholarssuggested that what is observed in Figure 1 could have been more 'generally an association between economic hardship and vote, something that appears to be significant in its
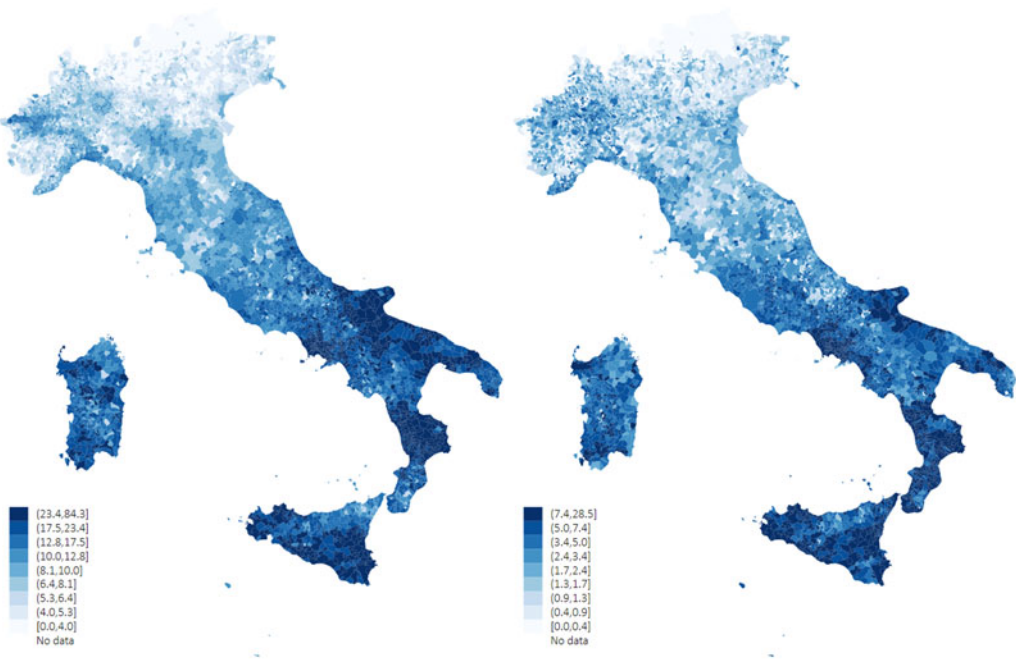

Figure 1. Percentage vote for the M5S (left) and distribution of the RdC (right).

proportions and, therefore, in its political implications' (Angelucci *et al.*, 2022). As proxies for that kind of distress, and more generally of a relatively disadvantaged environment, I collected a large range of variables at the lowest level of granularity available, and typically measured before the introduction of the citizenship income policy.

The online Appendix provides a detailed description of these 20 potential confounding factors, together with some descriptive statistics. Here it is sufficient to say that a first group of covariates reflects various characteristics of the provincial labour market, a second cluster of variables relates more to the cultural situation, a third group of factors captures different aspects of local well-being, while a fourth group includes a heterogeneous mix of demographic and socio-economic confounders.

Correlations, controls and causation

The empirical analysis reported in this section proceeds in three consequential steps. The first step tests the baseline association between RdC and vote for the M5S. The second step controls that association for the numerous confounders presented in the previous section. The third step involves a different approach, based on CEM, moving beyond correlational analyses and entering the more interesting realm of causality.

While the analyses performed immediately after the election relied on regional and provincial comparisons, the ones reported in Table 1 use municipal data, with the larger numerosity providing a more nuanced picture and greater statistical power. A Youtrend analysis further suggested that the appropriate focus for any attribution of causality should not be the support for the M5S, but its electoral persistence.[1] This explains why all regressions include a lagged dependent variable in the right-hand side of the equation, together with the change in turnout to address any difference due to varying levels of electoral participation.

Model 1 controls for the political traditions embedded in different geographical areas of the country, while model 2 addresses the same issue including regional fixed effects.[2] The two regressions exhibit consistent results, showing a clear path-dependency in the support for the M5S, and turnout improvements systematically acting against the yellow vote. Most importantly, the relationship between RdC and support for M5S is positive and highly significant. For each 1% of the population receiving the welfare benefit, there is an increase of approximately a half percentage point in the yellow votes.

While geographical controls do not scratch the hypothesized association, the real litmus test is represented by the inclusion in the models of the large set of proxies representing the local economic hardship and relatively deprived environment. Figure 2 shows the coefficients of a series of 40 ordinary least squares (OLS) regression models explaining the M5S vote, together with their respective 95% confidence intervals.[3] The 20 models presented in the left panel do not include RdC among the explanatory factors, and they are used as benchmarks proving the association with the covariate of interest. The citizenship income enters the equation in the 20 models of the right panel, and its multiple coefficients and confidence intervals are plotted in the last row of the graph.

As can be seen on the left-hand side of Figure 2, all the proxies proposed have a significant association with the enduring electoral support for the M5S. As expected, unemployment rates, share of inactive population and NEETs (Not in Education, Employment, or Training), presence of educational delays, frequency of poor taxpayers, non-performing loans and protests – all elements representing relatively disadvantaged and needy conditions – are positively

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[1] See https://twitter.com/you_trend/status/1575189760108216320.

[2] In the online Appendix, a split sample approach confirms that the association between M5S vote and RdC remains significant even within each geographical area.

[3] To facilitate comparison of the regression coefficients, I first rescaled the variables as suggested by Gelman (2008). The complete results are presented in the online Appendix.

Table 1. Citizenship income and M5S vote (OLS regressions)

	(1)		(2)	
Citizenship income	0.58***	(0.02)	0.61***	(0.10)
M5S 2018 vote	0.39***	(0.01)	0.43***	(0.03)
Change in turnout	−0.18***	(0.01)	−0.07***	(0.03)
North-east	−1.59***	(0.14)		
Red zone	0.73***	(0.14)		
Centre	1.41***	(0.16)		
South	5.10***	(0.18)		
Regional dummies			✓	
Constant	−3.79***	(0.15)	−2.37**	(1.05)
Observations	7816		7816	
R^2	0.82		0.84	

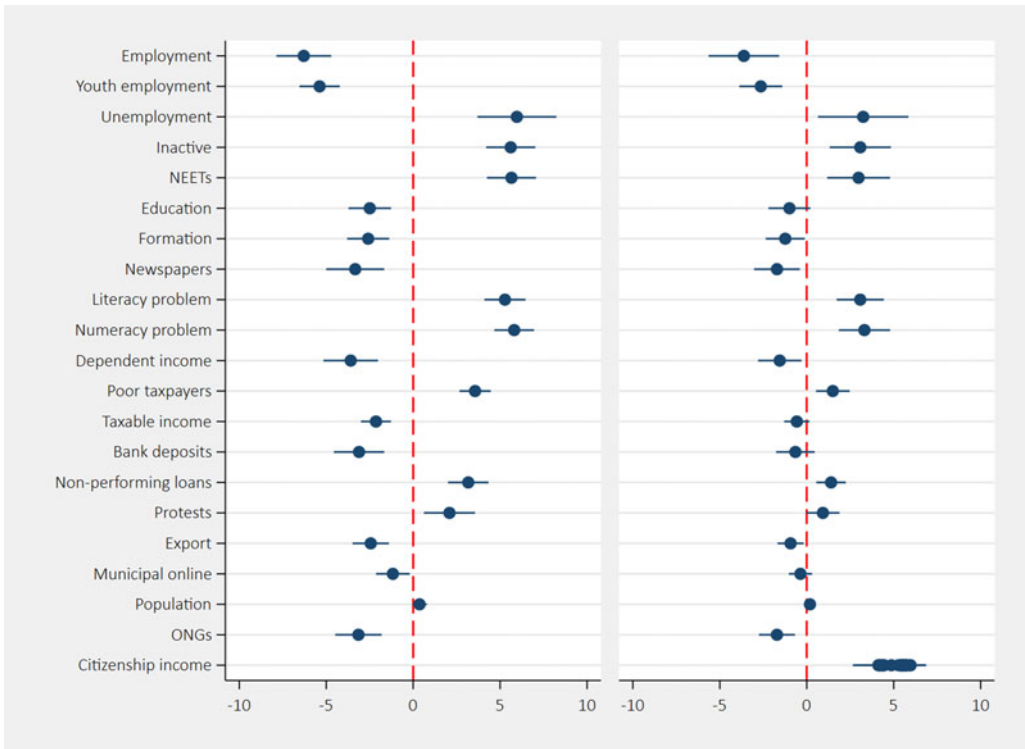Clustered standard errors in parentheses: ***$P < 0.01$, **$P < 0.05$, *$P < 0.1$.

Figure 2. Explanatory factors of the M5S vote (OLS coefficients and 95% confidence intervals).

associated with the M5S vote. By contrast, the list of proxies representing relatively wealthier and more dynamic economic areaswith more educated, informed and connected populations is inversely related to the M5S's support.

   Although these models seem to confirm the concerns about the existence of a spurious relationship between RdC and the yellow vote, the ones reported on the right-hand side of the same Figure 2 consistently reject that allegation. The covariates do not absorb the explanatory potential of the RdC, as is evident in the last row of the right plot. In spite of the long list of potentially confounding factors, the association between M5S vote and the policy remains always positive and statistically significant. Even running a 'saturated' model, simultaneously including all

covariates, the coefficient for the RdC remains positive and highly significant. This contradicts the preliminary comments in the aftermath of the election, suggesting that the policy/vote association did not depend (exclusively) on the hardship of the local situation.

These first results rejuvenate the idea that it was the policy itself that mobilized voters in support of the party that had introduced the RdC, and that had centred its electoral campaign on its defence. There is nothing wrong with relying on multivariate regressions to test this expectation. In fact, 'control for covariates can increase the likelihood that regression estimates have a causal interpretation' (Angrist and Pischke, 2009: 64). However, sometimes it is not enough, and researchers should try to make their results even more robust, strengthening the assumption that the treatment assignment is as good as random.

More specifically, there are two main shortcomings that may affect the results of the traditional control strategy, and that can be addressed using the appropriate statistical tools: firstly, model dependence (Ho et al., 2017), and secondly, the potential imbalance between the treated and control samples (Imbens and Rubin, 2015).

The first shortcoming has to do with the limits of any parametric model, whose estimates crucially depend on the knowledge of the exact form of the relationship between the covariates of interest – in this paper a linear function, but the same logic applies also to non-linear relationships. Matching techniques that reduce the sample so that the treated group is as similar as possible to the control group, 'render any subsequent parametric adjustment either irrelevant or less important' (Ho et al., 2017: 200).

The second shortcoming occurs whenever 'there are regions of the covariate space with relatively few treated units or relatively few control units, and, as a result, inferences for such regions rely largely on extrapolation and are therefore less credible than inferences for regions with substantial overlap in covariate distributions' (Imbens and Rubin, 2015: 309). As a rule of thumb, the same authors suggest that whenever the normalized difference between the distribution of the covariates across the two groups exceeds one quarter – something that happens for each of the control variables employed in the analyses above – 'simple regression methods are unreliable for removing biases associated with differences in covariates' (277). Again, the suggestion is to pre-process the data using some procedure like CEM, which balances the treated and control samples before applying the preferred regression method.

> In practice, some of the most effective causal estimation methods in nonexperimental studies using observable data appear to be those that combine some modeling of the conditional mean of outcomes (for example, using regression adjustments) with a covariate balancing method such as (…) matching, (…) making them doubly robust (Athey and Imbens, 2017: 11).

Practically speaking, CEM first verifies the level of dissimilarity between treated and non-treated units along a set of potentially relevant factors, then defines bins in which to categorize those factors and matches them in strata including only cases with comparable characteristics, and finally prunes all the observations for which there is no correspondence between the two groups.[4] In so doing, by matching each treated observation with other sufficiently similar non-treated ones, the procedure approximates the ideal situation of John Stuart Mill's method of difference.

In my analysis, the dichotomic distinction between the two groups depends on having a share of citizens benefitting from the citizenship income which is above or below the median value.[5] The first group can be considered 'treated' by the RdC, and is considerably different from the

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[4]For an accessible introduction to matching, see Negri (2023), while for a more technical exposition, see Iacus et al. (2012).

[5]This distinction was used only for the balancing procedure, whereas the superior richness of the continuous measure is preserved for all subsequent analyses. For robustness, I also tested a different dichotomization of the treatment, reported in the Appendix, obtaining the same results.

second control group. For example, its unemployment rate is more than 7 percentage points higher, whereas its overall and youth employment rates are respectively 13 and 12 lower. In the online Appendix, I further detail the imbalance between the two groups along a large set of socio-economic and educational characteristics – the ones keeping the larger significant leverage in the regression reported on the right-hand side of Figure 2 – together with the results of the balancing process performed by CEM. Here it is sufficient to say that, after pruning almost 2500 non-matched municipalities, the multivariate imbalance measure $\mathcal{L}_1$ (Iacus *et al.*, 2011) was reduced from 0.73 to 0.39. Furthermore, most of the differences between the averages of the two groups, as well as other distributional imbalances, were cancelled.

To complete the process, it is necessary to rerun all the regression models using the new matched sample with the appropriate CEM weights. The results of these models, emulating those presented in Table 1, are presented in Table 2. Given the good balance obtained, it would not be necessary to introduce the control variables again, but I also report the main coefficients of a complete model that includes them. For a more comprehensive replication, the Appendix further includes the results of a series of regression models emulating those on the right-hand side of Figure 2.

Once the confounding factors are kept under control in the balanced sample, the effect of the citizenship income on the electoral fortunes of the M5S disappears. Models 3–7, besides showing a similar degree of resilience of the M5S vote, display a statistically non-significant coefficient for the share of population benefitting from the RdC. The M5S still records a more resilient electorate concentrated in the southern regions, and a relatively impenetrability of its appeal in the north-eastern regions compared to the other areas of the country, but this does not affect the null finding relative to the role played by the welfare policy.

These same results, which highlight the absence of any causal relationship between the two variables, are yielded also by the robustness tests reported in the online Appendix. Moreover, the good balancing process is confirmed in those tests by the fact that also the coefficients of all the other potentially confounding covariates, if included in the regression model, become insignificant in the matched sample.

Table 2. Citizenship income and M5S vote (CEM-balanced sample, OLS regression)

	(3)	(4)	(5)	(6)	(7)
Citizenship income	0.28	0.20	0.28	0.17	0.25
	(0.23)	(0.25)	(0.20)	(0.32)	(0.23)
M5S 2018 vote	0.63***	0.55***	0.57***	0.56***	0.54***
	(0.14)	(0.14)	(0.12)	(0.14)	(0.12)
Change in turnout	0.02	−0.01	0.22	0.01	0.20
	(0.16)	(0.16)	(0.18)	(0.12)	(0.18)
North-east		−1.83***			
		(0.55)			
Red zone		0.34			
		(0.65)			
Centre		1.07			
		(1.12)			
South		3.59***			
		(1.07)			
Regional dummies			✓		✓
Control variables				✓	✓
Constant	−6.51***	−5.25***	−3.43	−260.55	−362.58
	(1.84)	(1.90)	(2.23)	(265.862)	(177.63)
Observations	5443	5443	5443	5227	5227
R^2	0.54	0.56	0.68	0.58	0.71

Clustered standard errors in parentheses: ***$P < 0.01$, **$P < 0.05$, *$P < 0.1$.

Conclusion

Before reflecting on what can be learned from the foregoing analysis, I would like to summarize the followed research procedure.

I adopted a within-country 'effects-of-causes' research design focused on the electoral impact of the flagship policy of the M5S, without aiming to reconstruct all possible factors generating support for that party. The theoretical justification for this expectation was founded in the theory of retrospective policy voting, and did not directly hypothesize that the beneficiaries of the welfare policy as such mobilized themselves for the M5S. I would otherwise have fallen into the classic ecological fallacy trap by trying to answer a question that could only be tackled using individual survey data. While the traditional instruments of multivariate regressions used in comparative electoral studies with aggregated data seemed to confirm the role of the citizenship income scheme as a cognitive shortcut for the policy vote, a basic application of matching procedures firmly suggested rejecting that hypothesis: the citizenship income scheme should not be blamed, or praised, for the electoral result of the M5S.

A first lesson to be learned is that it is always worth exploring the robustness of one's findings using multiple techniques. Since the focus of this research lays at the intersection between electoral studies and the evaluation of a policy's impact, it was an obvious option to apply some methodological tools of the latter approach to a traditional research object of the former.

A second lesson regards the importance of null findings, which is also one of the motivations for the research note section of this journal. If a researcher is convinced that systematic correlations hide the absence of causality, he or she should seek to demonstrate the latter and not simply assume it by default, making explicit the relevance of null results against any superficial evidence. The truism that correlation is not causation does not justify the lack of effort to bridge the gap between the two.

The third lesson is a potential one, and concerns the intersection between aggregate- and individual-level studies. The former would gain a great deal from being confirmed by a subjective perspective, while the latter could better control the risk of ex-post rationalization characterizing the approach. However, triangulating the evidence on looking for confirmation is not the only possibility. Even potentially misaligned interpretations could help shed light on the grey zone between pocketbook evaluations and policy voting. As always, negative and contradictory findings would promote better research designs, and improved and finer-tuned explanations.

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