Are Voters Rationally Ignorant?
An Empirical Study for Portuguese Local Elections

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Abstract:

The application of the rational choice postulate to a political context invariably leads to the conclusion that most voters are ill informed when making the decision for whom to vote. In this paper, the authors do an empirical evaluation of the rational ignorance theory, based on the results of the 1997 Portuguese Local Elections. The results only partially sustain the hypothesis of rational ignorance, although it is also possible to identify several limitations that prevent the establishment of definite conclusions in this specific field.

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Key words: Voter's Behaviour; Local Elections; Local Governments; Portugal.

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1. Introduction

The debate about the virtues and limitations of democracy constitutes a question that cannot be eluded by those involved in the analysis of political issues. One of the most frequently identified limitations results from the voter's insufficient information and the possible use of this by the political representatives and lobbies. Several studies consider that the voters' generalized lack of information can result in the proliferation of legislation favouring specific interests, with extremely negative consequences for the general welfare[1]. Therefore, it is important to establish if voters are in fact not well informed when they decide who to vote for, and what are the social costs resulting from this lack of information.

In this paper, we try to answer the first part of the question, indirectly evaluating the quantity of information held by voters. To that extent we have based the study on the model developed by Rogoff and Sibert (1988), and have assumed that voters better informed reward political candidates who show better performances. The information held by voters is determined by the proximity between electoral results and indicators of economic performance, controlling the influence of other factors that decide the vote, such as the candidate's ideology or *image*. The levels of performance are established through the construction of an empirical frontier using the Data Envelopment Analysis (DEA) methodology.

The study is organized in the following manner: in the first part, we make a brief reference to the theory of rationality of ignorance and the implications usually associated to it. The second part concerns to the formalization of a model of the rational voter's choice, identifying the factors that influence in the vote decision. Subsequently, these factors are included in a function of electoral approval, estimated in the final part of the study. Finally we analyse the results, try to answer the question underlying this study and identify some of its limitations.

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[1] See McNutt (1996) for an interesting survey of the subject.

2. Voter ’s information acquisition

The application of the rationality axiom to the characterization of the voter's behaviour, as what was originally elaborated by Downs (1957), inevitably leads to the conclusion that the voter is insufficiently informed when deciding who to vote for. Confronting costs and benefits, the rational voter quickly concludes that it is not worthwhile investing hard to get information, when its only purpose is to decide more correctly the vote. A comprehensive knowledge of the political programmes, as well as of their influence in the general welfare, necessarily implies high costs. Since the benefits of voting in the party that shows more possibilities to meet the voter's expectations are practically nonexistent, there aren’t sufficiently strong incentives that lead the average person to seek the adequate political facts. If their vote cannot influence the election results, the person sees no reason to be better informed[2].

Several studies establish the extremely negative social welfare implications, a result of an apparent under investment in information by the voter. The major problems are linked to the eventual manipulation of the public opinion by the government and lobbies to meat their own interests. In the first case, the government can use voter's ignorance to avoid an evaluation too severe of its performance, assuming a behaviour similar to the manager in the theory of the agency. Similarly to the "principal" in Holmström’s model (1979), voters have no direct information on the efforts carried out by the government, thus ignoring if it is responsible for some specific situation, or, on the contrary, if that results from the combined action of exogenous factors[3]. In this context, the government can carry out policies that may harm the interests of the general population without being accounted for them. For instance, the government can promote

[2] In this case, it is not the fact that the benefits associated to the acquisition of information are difficult to achieve that prevent this investment, but because *there are no* benefits. In practice, the rational agent will tend to base his decision only on the information that doesn't mean significant costs, namely the information conveyed by the *media*, or in crude *proxies* such as the aspect or the candidate's charisma, unless he gains personal advantages with that information.

[3] At a political level, this problem tends to assume greater proportions, because, and contrary to the company owner, the ordinary voter sees no reasons to invest in information and consequently lessen his doubts. While the shareholder may greatly benefit from acquiring information, the voter sees virtually no advantage in being well informed. Consequently, we would expect that, at a political level, the lack of information is greater, which represents lesser incentives for those in office to be efficient.

the artificial expansion of the economy in a pre-electoral period, hindering the desired balance of the *steady-state*, as it was originally proposed by Nordhaus[4].

Correspondingly, voters' ignorance makes them particularly vulnerable to the influence exerted by lobbies. Due to general political ignorance, most voters don't know exactly what policies they would like to see implemented. Using this, lobbies can then mould the public opinion to their benefit, leaving out the negative aspects of their political proposals and building cause-effect relationships easily apprehended and seen as acceptable by the voters. Lobbies may even interfere in the definition of political programmes (Stratmann, 1991) by gaining influence and a privileged statute with those in office. In a context of "rational" ignorance, the contributions offered by these groups can have a decisive role in the electoral results[5], making the political parties more sensitive to their solicitations. The natural consequence will be the distortion of the political market in favour of measures that represent significant gains to some people[6] and negative consequences for most of the others (Gwartney and Wagner, 1988).

Several authors present an alternative view on the voter's behaviour. These authors admit that voters may be sufficiently informed to cast their vote or at least the lack of information they have is not enough to produce the consequences we have described above[7]. The arguments presented rely on the virtues of competition in the political market and on the gains on the preservation of the brand name and reputation of political parties and candidates. Wittman (1989), for example, defends that political parties and candidates will tend to transmit reliable information, since omissions and untruths will be used by opposite political parties in their own benefit. According to this author, the strong competition between parties will allow voters to recognize the negative side of the political proposals defending, this way, those who have more efficient proposals.

In our view, the hypothesis that the ignorance of voters has negative repercussions on the functioning of the political market is more probable than the

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[4] See the link established by Nordhaus (1989) between the voter's rational ignorance and the occurrence of political business cycles.

[5] In a situation where rational ignorance prevails, the familiarity of the candidate becomes a determinant factor for the choices made by the voter, which could be enhanced by intensified publicity (Mueller and Stratmann, 1994).

[6] Olson (1967) refers that only small, cohesive groups, with selective benefits to the membership could avoid the free-riding problem associated with the publicness of the benefits of collective action, thus becoming successful in the political market-place.

[7] See, for example Wittman (1989), Peltzman (1990) and Becker (1983, 1985)

alternative view. The specific characteristics of this market, namely indivisibilities of choices, impossibility to change outcomes for a certain period of time and the impossibility to account for the intensity of voter's preferences reduce substantially the incentives for voters to search information[8]. Moreover, political parties may follow a strategy of ambiguity[9] and voters, insufficiently informed, may not be able to recognize deviations from political programs.

Despite the arguments in favour and against each hypothesis on the voter's behaviour, it is clear that there is a lack of empirical work on the subject. In this paper we try to fill in this space by specifying a model of the rational voter's choice and empirically testing it for Portuguese local elections data.

3. Rational voter's choice: a model.

Two types of agents are considered: political representatives (candidates and leaders) and voters. Each agent operates intending to achieve maximum expected utility: his or her conduct is rational.

Let us assume that there are no fundamental differences in the behaviour of each individual as an ordinary economic agent or as a political representative. In any case, he will adopt an optimising perspective, trying to maximise the expected value of a personal utility function. In the case of political candidates, only two for simplicity's sake [10], the main arguments of their function are the prestige, the authority and the public recognition associated with being in office. Apart from these arguments, an enhancement of social welfare is implicitly considered, taking into consideration the consumption of private and public goods in the community. We assume that none of the candidates would profit from implementing policies that would reduce social welfare, because such policies would have negative repercussions in future elections and also because, as citizens, they would also suffer with such policies. However, these policies may be implemented if voters are not able to fully comprehend their negative effects, and if they secure a better chance of victory (for instance, by ensuring support from groups that directly benefit from such measures). The combination of these effects is considered in the utility function of the candidates, described in equation 1:

[8] See, for example Rowley and Vachris (1993).
[9] See, for example, Alesina and Cukierman (1990) and Mueller and Strattmann (1994).
[10] The candidate presently holding office, second-time candidate (R), and his opponent (O).

$$U_I = \sum_t^T \gamma^t V_t + \sum_t^T \gamma^t [C(g_t, p_t)] \qquad (1)$$

In this equation, V_t represents the utility derived by the candidate when in office [$V_t = f(\theta)$, θ = {prestige, authority, social recognition,...}] and $C(g_t, p_t)$ the consumption of public goods and services (g_t) and of a private composite good (p_t), representative of all the private goods in the economy. γ_t is the discount rate.

As to the voter, we assume that his welfare positively depends upon the consumption of goods and services and that the choice of a political representative has significant implications on its value. Based on the concept of competence developed by Rogoff and Sibert (1988), and considering everything else constant, we have established that the most competent candidates will be able to provide an enlarged assembly of public goods and services without burdening the voter-tax payer with more taxes:

$$g_t = TI_t + \varepsilon_t \qquad (2)$$

g_t = volume of public goods supplied
TI_t = tax revenue
ε_t = competence of the political leader

Therefore, voters will tend to choose the most competent candidates, who will win the elections. The well-informed rational voter chooses the candidate that gives more guarantees of an increased consumption of goods and services, ensuring access to higher levels of utility[11].

We represent the voter's expectations mechanism in relation to the future competence of the candidates in a way similar to the Rogoff and Sibert (1988) and Rogoff (1990). These authors consider that the expectations regarding the incumbent candidate are different from the expectations regarding his opponent. The former's present performance constitutes a relevant indicator as to the candidate's future achievements, whereas there is no information on the opponent's current achievements, thus providing no predictions as to future performance. In our opinion, this reasoning

[11] The definition of competence shows a close proximity to the notion of economic efficiency. In fact, it is accepted that the most competent candidate is the one who manages more efficiently the resources obtained from taxation, by "producing" more public goods and services.

seems to make perfect sense. The opposition cannot compete with the government, due to the simple fact that they cannot in fact govern. The situation is similar to a monopoly, since the "installed producer" can only carry out production, broadly understood. It is generally assumed that the voter is aware of this situation and that he does not regard the "promises" made by the opponent candidate as sufficiently credible elements capable of providing indications on future performance. The voter realizes that the candidates' interests are distinctive from social welfare, recognizing that promises can be of little value in a context potentially characterized by political opportunism.

The formalisation of competence is achieved by a first-order moving average process:

$$\varepsilon_{I,t} = \alpha_{I,t} + \alpha_{I,t-1} \qquad (3)$$

$\varepsilon_{I,t}$ = Competence of the party i during the period t
$\alpha_{I,t}$ = Stochastic process i.i.d.

Equation 3 shows that the voter evaluates the competence of the candidates in office by their present actions, ignoring information about the opposition candidate for that same period[12]. We consider that it is pointless to analyse information prior to the present mandate, since the voter has already considered it during the last election[13]. Therefore, the voter will compare the expected value of the future competence of the candidate presently in office with an "average" value of competence, which is determined by the knowledge of the probable distribution of that factor. The more competence showed by the present candidate, considering that all other variables remain constant, the more chances he has of being re-elected.

From our point of view, this reasoning does not contradict the rational expectations mechanism, since we are considering that the voter will base his decision on the anticipation of his future utility. We consider that the best way to anticipate the candidate's future competence (which conditions the voter's future utility) is by being well informed about his present performance. Although the competence of one given candidate may change over time, it is definitely associated with his prior performance.

[12] Being a first-order moving average, past information on this candidate is disregarded, even though the candidate has already been in office. It is accepted that that experience is already so far in the past that its evaluation is neglected by the voter.

[13] The only important thing in each election is recent information produced during the last mandate and not considered in his previous election.

At the same time, the fact that a period of time occurs between the constitution of information and its effective appropriation determines that the decision regarding a future event may be basically backed by past information.

Apart from the "competence" factor, it is assumed that the candidate's ideology and personal charisma are relevant elements considered by the rational voter. The former is seen as a guiding element for the voter, who will elect a candidate, among others equally competent, whose positions on fundamental policy goals and priorities for resource distribution are the closest to his own. According to our model, this factor can be integrated in the voter's consumption function, introducing a qualitative dimension into the achieved consumptions. Thus, the voter is sensitive to the relative valuation attributed by the candidate to the different public goods, together with the efficiency associated with the management of resources.

Finally, the candidate's charisma or empathy is represented as a first-order moving average process, similar to that applied to the "competence" factor:

$$I_{i,t} = \beta_{i,t} + \beta_{i,t-1} \qquad (4)$$

$I_{i,t}$ = Image of the party leader i during the period t
$\beta_{i,t}$ = Stochastic process i.i.d

This representation, based on the work of Rogoff and Sibert (1988), proposes to establish the eminently dynamic character of the image factor, subject to the erosion associated to public exposure and popularity fluctuations. The fact that it presents the structure of a MA (1) process permits that the candidate's image at a given moment in time be related with his image in the past; thus, his future value can be based on current information.

In relation to the candidate presently in office, adopting these assumptions implies that staying in office depends on how voters will evaluate his competence, all the while controlling aspects related with ideology and image. Each one of these factors has repercussions on levels of welfare, so they are, directly or indirectly, connected to its utility function:

$$U = \sum_{t=u}^{T} \left[C\left(\sum_{j=1}^{k} w_i g_{it}, p_t \right) + Z(TI_t) + I_t \right] \mu^t \qquad (5)$$

In this function, the repercussions of the candidate's competence are anticipated by their influence in the consumption of public or private goods (g_t and p_t) and on the level of tax revenue (TI_t). The ideology of the candidate has repercussions on the relative importance of each good and public service (w_i) and, finally, the image of the candidate has direct influence on the utility function, described by the effect I_t[14].

The rational voter anticipates the future value of each component during the candidate's last mandate, choosing the one that ensures the best expected utility level. The anticipation is based, fundamentally, on the performance of the candidate presently in office. He will win the election if the expected competence, image and ideology show a positive differential in relation to the other candidate[15]. Therefore, the percentage of votes for this candidate is directly related to the level of competence shown during his mandate, controlling the aspects related to other factors.

4. Electoral results and the performance of candidates

The model developed in the previous section establishes that the re-election of the candidate in office depends upon the level of competence shown during his mandate, apart from the ideology and charisma effects. Based on the 1997 Portuguese Local Elections, we have defined proxies to reflect each factor.

In respect to the factor competence, the DEA method was used in the construction of an empirical production boundary for the municipalities under study[16]. For that effect, we have considered each municipality in each year of the mandate prior to the 1997 elections as a different DMU[17], according to the procedure mentioned, among others, by Boussofiane *et al.* (1991). The efficiency indices were estimated using

[14] T represents the time horizon of the voter, μ the discount rate used by the voter (μ < 1), and C and Z are regular functions strictly concave, C'g,>0 and Z'<0.
[15] Identified with the average value of distribution.
[16] The use of parametric methods of efficiency estimation would demand an explicit identification of the underlying functional form of the technology, which is a particularly difficult matter when dealing with public sector organizations. In this sense, we have decided to use a method with minimal technical and behavioral assumptions such as DEA.
[17] *Decision Making Unit*.

the Windows Warwick DEA software (version 1.02), from the perspective of minimizing inputs and variable returns to scale.

In the definition of the inputs and outputs included in this model, we have considered the areas of enterprise privileged by the Portuguese municipalities. Along with the inputs, we have decided to use the "total value of current expenditure" (CEXP), considering the work and capital expenditure made by the municipalities[18].

In relation to the outputs, the selection process was based on a general analysis of responsibilities assigned to the local Portuguese authorities, followed by the definition of indicators that best describe their performance in the period under study. Although Portuguese legislation attributes a particularly intervening role to local authorities[19], economic and social development being their ultimate objective, in practice their role seems more limited, given the excessive concentration of expenditure in traditional areas. In fact, nearly two thirds of the available resources are spent in administrative costs, fixed costs (such as water supply and drainage) and urbanism.

The emphasis on traditional areas leads to the selection of outputs that reflect the services supplied, described in Table 1, together with the sources that provided the information[20]:

In order to give credibility to the matching originated by DEA, we have considered only the municipalities with a similar number of inhabitants and acceptable quality standards, such as water supply, collecting and disposal of waste and water sewage[21].

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[18] The use of an expenditure variable instead of real consumptions was due to the impossibility of obtaining adequate proxies of the capital factor. Since the municipalities have access to the same capitals' market and pay their employees according to the same salary tables, it seems acceptable to consider that there is no spatial variation of prices, and, consequently, confirms that the levels between efficiency-cost and technical efficiency don't show a significant variation.

[19] Articles n. 235 and 237 of the Portuguese Constitution, D.L. 100/84 and Law n. 25/85.

[20] There was not enough information on the variable ROADS for the year 1997 and on the WASTE and WATER variables for the year 1994. To fill in the gap of the first variable we used the 1996 values. In relation to WASTE and WATER, we obtained the total expense in these services for the year 1996, and divided it by an estimation of its unitary price, obtaining an estimation of the quantities supplied.

[21] The qualitative evaluation was based on the conditions of the equipment used to supply those services. Therefore, we have analysed the condition of the water collection sources, lift stations, water mains, Water Treatment Stations and reservoirs used in water supply; in the drainage system, we have analysed the conditions of the water collection systems, lift stations, water mains, interceptors, pumps, Residual Water Treatment Stations and municipal septic tanks, and, finally, the urban solid waste dumps: we have analysed the condition of the different solid waste processing and disposal sites. (Source: INE-Estatísticas do Ambiente)

To analyse the explanatory capacity of the chosen indicators on the amount spent by the selected municipalities, we have estimated the total cost function defined in equation 8 by ordinary least squares:

$$\ln CEXP_i = \alpha_0 + \alpha_1 \ln WATER_i + \alpha_2 \ln WASTE_i + \alpha_3 \ln PUPILS_i + \alpha_4 \ln SEWAGE_i + \\ + \alpha_5 \ln ROADS_i + \alpha_6 COMP_i + \varepsilon_i \quad (8)$$

This equation includes the previously defined variables in logarithms, representing the coefficients α_i (i =1,...,5) the elasticities of expenditure with respect to each one of the indicators. We have also considered a dummy variable COMP, which identifies the municipalities that possess separate companies of water supply and sewage, as well as those that have granted a concession of those services during the period under study. In those cases, the total expenditure in supplying water or treating residual waters is not included in the CEXP variable, therefore, we expect the coefficient associated to this variable to have a negative sign.

The results of the parameters' estimation, for the years 1995 and 1996[22], are presented in Table 2:

The results attest to the significance and explanatory power of the chosen indicators, legitimating their use in the assessment of cost efficiency of the municipalities under study. The adjusted R^2 is very high, showing the overall significance of regression. For all six variables the estimated coefficients have the expected sign, positive with respect to the service indicators and negative in the case of the COMP variable. All coefficients are statistically significant, with the sole exception of the urban solid wastes collected, with a *p-value* always higher than 10%. However, we have decided to include this variable, which, in the regressions made with all municipalities[23], is always statistically significant to a level of significance of 1%, due to the importance of the collection and processing of urban solid wastes within the competences attributed to the Portuguese municipal authorities.

[22] Since it was not possible to gather complete information on all the variables for the whole period under study, we have only considered the years of 1995 and 1996, thus ensuring more reliable conclusions. In any case, the estimate of identical regressions for the years of 1994 and 1997, would lead to similar results

[23] Not considering the quality of the services supplied, the total number of municipalities would reach 275.

Considering the described data[24] we have applied the DEA method, obtaining the results presented in Appendix 1.

These results identify a considerable number of inefficient units: from a total of 148 DMU's (37 municipalities over 4 years), 95 present indices of relative efficiency below 100%. The average (in) efficiency level of these units is 78.2%, which shows that it would be possible to achieve the same results with a cut of nearly 22% in the costs.

In order to proxy the ideological component, we have considered the European Parliament elections' results for the selected municipalities[25], to establish the local importance of the candidate's party. In the vast majority of municipalities, the difference between the achieved results in the Local and in the European Elections is not very significant, revealing that voters are sensitive to issues of ideological nature when they decide whom to vote for. Candidates supported by political parties with strong local implantation have, from the outset, greater probabilities of winning the election. Nevertheless, in a considerable number of municipalities (18.5% in 1989, 10.5% in 1993 and 20.4% in 1997), the differences between the results of the two elections are extremely high, more than 20%[26]. In the municipalities under study, the results achieved by the party during the local elections are higher than the percentage of votes achieved in other elections, consequently, the basis for the vote was not founded on a strict ideological evaluation but on the candidate's individual characteristics.

Evaluation of the importance of those characteristics (included in our formulation of the "image" component) consisted in, on the one hand, analysing the impact of the second mandate candidate on the electoral results achieved by his party, and, on the other hand, in establishing the relationship between that impact and the period in office. At the outset, the fact that the "incumbent" candidate intends to run for a second mandate should have a positive influence in the electoral results, due to a wider public recognition and visibility from having been in office.

In the Portuguese case, the candidate's individual characteristics, together with the well-known incumbency-bias phenomenon, seem to have a major influence in the

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[24] In the municipalities with separate companies responsible for providing water or water and drainage, the value of the variable CEXP, includes, along with their administrative costs, an estimate of the costs of providing those services. The values of this variable have been deflated by the public expenditure deflator for all municipalities, in order to compare their values according to the different years.

[25] Following a procedure already used by Costa (1997).

[26] In some municipalities the differences reach 40% (Source: Stape).

electoral results. In several occasions the candidate was re-elected with the political support of a different political party, and there are even situations when the candidate changed more than once of political party without losing the support of the majority of voters. Apparently, the long period in office by such large number of candidates and the significant number of re-elections achieved, give strong indications that the incumbency-bias phenomenon has again a predominant influence.

Having established the indicators that allow us to consider the factors included in the model previously developed, we have estimated the electoral approval function expressed in equation 9:

$$PER_i = \beta_0 + \beta_1 DEA_i + \beta_2 IDEO_i + \beta_3 REC + \beta_4 NDREC + \beta_5 DPREC + v_i \qquad (9)$$

In this equation, PER represents the percentage of votes of the party that won the 1993 local elections in the 1997 elections. IDEO expresses the ideological effect, representing the result achieved in the municipality by the same party (in percentage) in the 1999 European elections. DEA is the "competence" factor estimated in a twofold process. In a first approach (estimate (1)), we have considered the average efficiency indices calculated for each municipality according to the DEA method. Since the use of this indicator could lead to the misconception that candidates from traditionally inefficient municipalities, but who had accomplished good results during their mandates would be penalized, we have considered in a second estimation the rate value of the annual average variation of the DEA indices in the period under study. REC is a dummy variable that assumes the value of 1, in case the leader elected in 1993 decided for a second mandate in the 1997 elections; its inclusion is intended to identify the advantages associated to the candidate's "name" and benefit from the public recognition accumulated during the time in office. NDREC and DPREC are interaction variables (NDREC = ND*REC and DPREC = DP*REC), ND being a dummy variable with the value of 1, in the case the candidate had previously been elected for at least two mandates, and DP represents the number of inhabitants per square Km living in a given municipality. The NDREC variable was included to confirm if the influence in the electoral results of a sympathetic figure increases with time in office. Finally, the DPREC variable was included to test the hypothesis introduced by Yen *et al.* (1990),

which states that the image and public recognition of the candidate is higher in municipalities with greater costs of information; v_i is the stochastic disturbance term.

As established in the previous analysis, it is expected that the coefficients associated to the variables IDEO and DEA will be positive. Considering that all other effects remain constant, the rational voter will most certainly reward the leaders with best performances, as well as the candidates with similar ideological positions.

The same thing happens with the variables REC and DPREC: in both cases the aim is to identify the influence over the electoral results of the information gathered and the candidate's sympathetic figure, which are most likely to favour him.

Finally, the theory suggests that the coefficient β_4, associated to the variable DPREC will be negative. In municipalities with fewer inhabitants, the social interchange is usually inferior, which increases the costs of accessing information. In this context, it is expected that the amount of information collected and associated to the name of the candidate assume a greater significance for those communities.

We have estimated equation 9 by ordinary least squares, and the results are presented in Table 3 (the *t*-statistics are in parentheses):

A first analysis of the results confirms the globally significant character of the regression, which allows the rejection of the null hypothesis according to which $\beta_i = 0$ (i= 0,...,5) with a level of significance inferior to 0,1%.

All the estimated parameters show features concurrent to what was theoretically expected: they are all positive, except for the coefficient associated to the variable DPREC, which, as expected, is negative.

The analysis of the statistical significance of the individual coefficients shows that the voter is not particularly sensitive to the candidate's performance, at least not in terms of the way it was represented. Despite the fact that the coefficient associated to the variable DEA in both estimations shows the theoretically expected feature, the *t*-statistic does not permit the rejection of the null hypothesis, according to which $\beta_1 = 0$, at the usual levels of significance.

Ideology and particularly the candidate's sympathetic image apparently constitute influential aspects in the voter's decision. Considering everything else constant, the fact that the candidate in office at the date of the election has decided to run for another mandate influences positively the results of his party in about 11

percentage points[27]. The fact that he has been in office for at least two mandates apparently has no decisive influence in the final result.

The impact of the candidate's sympathetic figure, a consequence of having been in a public office, seems to be higher in municipalities with less population per Km^2, considering the negative sign of the DPREC coefficient. Municipalities, which are similar in other aspects but have less population per square Km, tend to benefit more a candidate that intends to be re-elected.

5. Some Conclusions

On the whole, our empirical results seem to correspond more to the premise of the "rationally ignorant" voter than to the alternative premise of the "efficient voter": not only the competence of the candidate seems to have little influence in the voter's decision, but also the determinant factor that explains the electoral results seems to reside on the candidate's sympathetic figure. It is precisely in a context of rational ignorance that the public recognition of the candidate, his name and political past assume more relevance. Consequently, factors like the candidate's sympathetic figure and charisma may overlap a rigorous evaluation of his performance, giving the more popular candidates an advantage in relation to the other candidates. The recognition and social visibility of those who have been in office represent valuable assets in the contest against their opponents.

On the other hand, the fact this effect is inversely related to the number of inhabitants per square Km in a given municipality suggests that the voters will be more influenced by similar factors whenever the costs of information are potentially higher. This result, similar to the conclusions reached by Yen *et al.* (1990), agrees with the logic of the rational voter, who evaluates costs and benefits when having to decide whether to acquire more information.

Despite all this, these results are not definite in terms of inferring the voter's rational ignorance. This would only happen if it were clear that the candidate's competence had been carefully pondered and, unfortunately, it is impossible to establish that. Firstly, because it is not conclusive that all the variables relevant for the evaluation of the efficiency-cost variable have been considered. Despite the fact that the variables

[27] In no municipalities included in the sample did the candidate elected in 1993 run for a second mandate in 1997 with the support of another party.

included made it possible to explain almost 90% of the local administration current expenses, some areas have not been considered, since there was not enough credible information available[28]. Secondly, several difficulties in quantifying the selected variables forced us to find compromises, in order to fill in the information gaps. The impact, although appropriately reduced, of those information gaps may have introduced deviations in the results.

All things considered, although we are confident that the overall results point out to the ignorance of the voters, we defend the necessity to elaborate new studies in this field, in order to improve the method applied in this study and fill in some of the mentioned blanks.

[28] We are particularly referring to the cultural intervention, for which it was impossible to determine the correct proxy.

Appendix 1: DEA efficiency results

Municipality	1994	1995	1996	1997	Average	Standard Error
Albergaria a Velha	100	100	94,59	69,32	90,98	14,66
Alenquer	91,57	100	70,47	100	90,51	13,94
Aljustrel	100	99,29	100	100	99,82	0,36
Ansião	100	89,5	100	93,22	95,68	5,21
Arganil	73,66	71,44	68,76	67,9	70,44	2,62
Arouca	100	100	86,97	89,56	94,13	6,86
Aveiro	100	100	100	100	100,00	0,00
Beja	83,42	84,74	78,35	100	86,63	9,33
Benavente	88,61	84,55	76	78,26	81,86	5,78
Caldas da Rainha	100	93,61	100	100	98,40	3,19
Castelo Branco	100	100	100	100	100,00	0,00
Chamusca	85,01	77,52	80,08	73,03	78,91	5,00
Entroncamento	100	100	100	100	100,00	0,00
Estremoz	71,18	81,6	76,47	66,15	73,85	6,67
Évora	100	89,01	100	95,84	96,21	5,19
Faro	76,34	88,36	93,11	100	89,45	9,96
Figueira da Foz	73,13	84,21	100	74,88	83,06	12,30
Grândola	48,08	55,23	50,47	44,94	49,68	4,34
Idanha-a-Nova	100	100	100	100	100,00	0,00
Ilhavo	100	99,25	100	100	99,81	0,38
Marinha Grande	100	90,12	92,41	72,33	88,72	11,71
Obidos	94,49	100	95,96	99,11	97,39	2,60
Odemira	53,41	45,43	44,3	42,05	46,30	4,95
Oliveira de Azemeis	100	98,43	89,36	93,23	95,26	4,88
Penacova	93,69	88,82	87,16	84,07	88,44	4,02
Sabugal	70,09	74,23	70,51	67,12	70,49	2,92
Santiago do Cacém	61,78	61,7	59,44	65,18	62,03	2,37
São João da Madeira	100	95,85	90,43	100	96,57	4,54
São Pedro do Sul	70,94	58,92	55,44	66,76	63,02	7,09
Seia	97,01	100	95,33	83,58	93,98	7,20
Sever do Vouga	100	100	98,03	100	99,51	0,99
Tavira	62,69	70,43	71,54	71,09	68,94	4,19
Torres Vedras	81,81	68,62	73,55	60,3	71,07	9,01
Trancoso	75,87	73,06	86,94	85,42	80,32	6,89
Vale de Cambra	100	100	100	100	100,00	0,00
Valença	100	83,15	82,84	73,29	84,82	11,11
Vendas Novas	95,81	100	99,34	89,05	96,05	5,02
Mean inefficiency ($\frac{1}{n}\sum_i Efic._i$), Effic.i < 1: 78,20%; Standard Deviation: 14,52%						

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Table 1: Description of the variables used

Variable	Description	Source
$CEXP_i$	Current expenditure of the municipality i, in thousand *contos* (1000 PTE)	INE
$PUPILS_i$	Number of pupils attending the first four grades of primary schools in the municipality i	INE
$ROADS_i$	Number of km. of municipal roads in the municipality i	Marktest
$WASTE_i$	Urban solid wastes collected in the municipality i, in thousands of tons	INE
$WATER_i$	Water consumption in the municipality i, in thousand m^3	INE
$SEWAGE_i$	Population served by residual waters drainage systems, in percentage	INE

Table 2: Estimates of the Parameters of a Total Cost Function (n = 37)

	C	ln PUPILS	ln ROADS	ln WASTE	ln WATER	ln SEWAGE	COMP	Adj. R^2
1995	-0.465	0.667	0.113	0.019	0.156	0.176	-0.238	86.37%
	(-0.724)	(6.301)	(1.702)	(0.305)	(1.798)	(2.295)	(-2.138)	
1996	-0.698	0.603	0.124	0.109	0.158	0.157	-0.323	87.66%
	(-1.061)	(5.881)	(1.944)	(1.329)	(2.147)	(2.304)	(-3.083)	

*t- statistics-t in parentheses

Table 3: Estimates of the Parameters of a Electoral Approval Function

Independent Variables

	C	DEA	IDEO	REC	NDREC	DPREC	R^2
(1)	24.124	0.062	0.200	11.096	2.870	-0.008	46.31%
	(2.751*)	(0.664)	(1.778***)	(3.066*)	(0.851)	(-2.306**)	
(2)	29.062	2.228	0.209	10.806	3.362	-0.007	45.55%
	(5.634*)	(0.071)	(1.799***)	(2.918*)	(0.972)	(-2.190**)	

t-statistics in parentheses.
*, **, *** - 1%, 5% and 10% statistical significance, respectively.