Public Spending and Electoral Return: The Efficiency of Mayoral Campaigns in Santa Catarina, Brazil

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Abstract
This study examines the efficiency of campaign expenditures by elected mayors in the 2024 municipal elections in the AMARP Microregion, Santa Catarina. Using data from the Superior Electoral Court (TSE) and the Data Envelopment Analysis (DEA) method through SIAD software, the research identifies which campaigns most effectively converted financial resources into votes. The findings reveal significant disparities: smaller municipalities, such as Iomerê and Calmon, achieved higher efficiency, while larger ones, like Caçador, performed poorly. Results indicate that targeted strategies can offset limited budgets and that higher spending does not ensure success. Efficient resource management emerges as crucial for electoral victory and democratic accountability.

Key words: Electoral performance; Campaign management; Public resources

INTRODUCTION

In capitalism, the accumulation of capital generates social demands that the market alone cannot meet, requiring state intervention. Baleeiro (2014) states that public needs arise from scarcity and can only be addressed collectively, usually under state responsibility. Musgrave (1980), in turn, defines three functions for such intervention: allocative (provision of public goods and services), distributive (redistribution of income), and stabilizing (inflation control and employment maintenance). To fulfill these roles, governments rely on tax collection and the efficient management of public expenditures.

Efficiency in the use of resources is essential to guarantee social welfare and sustainable development. According to Afonso, Schuknecht, and Tanzi (2005), the quality of expenditures directly impacts the state's responsiveness. Agasisti and Johnes (2009) define efficiency as achieving the best possible outcomes with the available resources. Within this context, Data Envelopment Analysis (DEA) has been widely applied to measure efficiency, including in electoral campaigns, although few studies have focused on Brazilian municipal contexts.

In light of this, the present study aims to analyze the efficiency of campaign expenditures of mayors elected in 2024 in the AMARP Microregion, using DEA as a methodological tool. The justification lies in the need to understand how resources are allocated in local electoral contexts, identifying more efficient practices and fostering

greater transparency and rationality in the management of public resources during electoral campaigns.

METHODOLOGICAL PROCEDURES

This study is characterized as quantitative in its approach, applied in nature, exploratory in its objectives, and survey-based in its procedures (Fonseca, 2002; Gil, 2019). Data were collected from public and open databases provided by the Superior Electoral Court (TSE) and included candidates elected to the office of mayor in the 2024 municipal elections in the municipalities of the Microregion of the Association of Municipalities of the Alto Vale do Rio do Peixe (AMARP). Only mayoral candidates certified as eligible by the TSE were considered (TSE, 2024a; TSE, 2024b). The municipalities analyzed are: Arroio Trinta, Caçador, Calmon, Fraiburgo, Ibiam, Iomerê, Lebon Régis, Macieira, Matos Costa, Pinheiro Preto, Rio das Antas, Salto Veloso, Tangará, and Videira.

Figure 1 presents the map of the AMARP Microregion within the map of Santa Catarina.
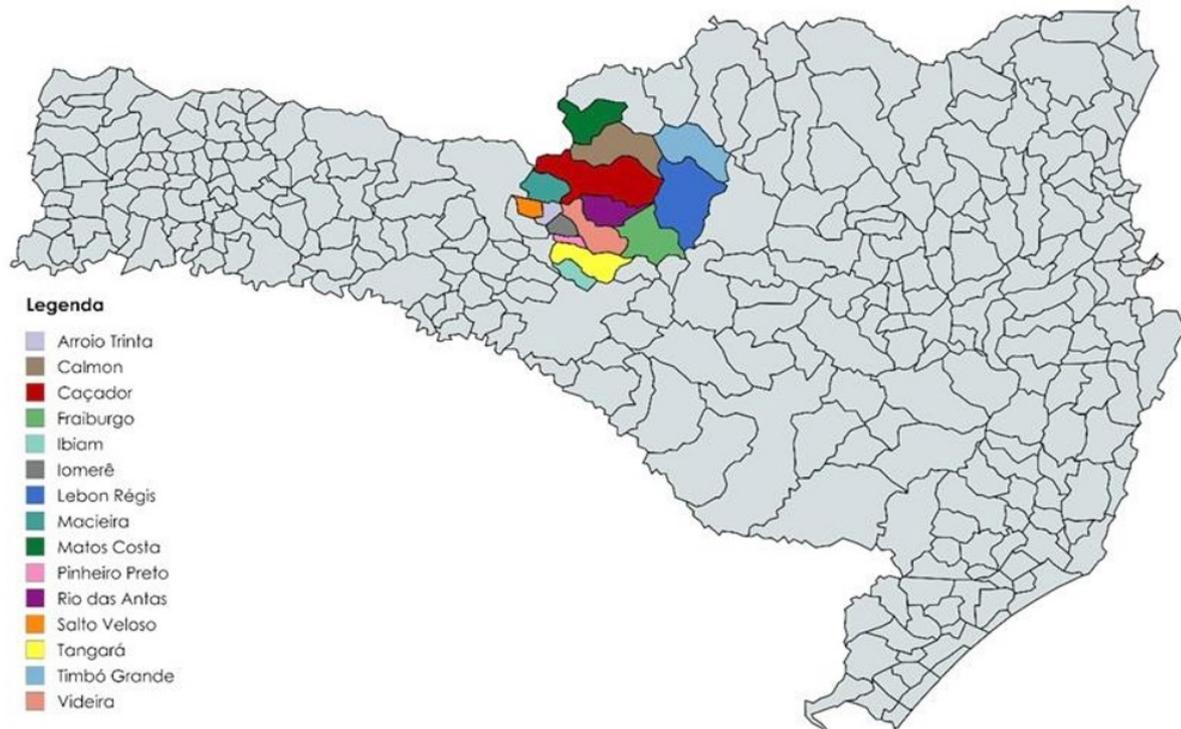
Figure 1
Map of the AMARP Microregion.

Source: the authors (2025).

The state of Santa Catarina has 21 Associations of Municipalities, with AMARP representing one of the regions of the Midwest. The AMARP Microregion has an estimated population of 230,000 inhabitants, a per capita GDP of R$ 32,000, 71,000 industrial jobs, 20,000 companies, and a projection of US$ 450 million in exports in 2021 (Hupalo et al., 2024).

To better understand and contextualize our research, Data Envelopment Analysis (DEA) is a non-parametric technique that evaluates the relative efficiency of decision-making units (DMUs) by comparing their inputs and outputs. Applied to the elected mayors, it allows us to identify which ones used campaign resources efficiently. Developed by Charnes, Cooper, and Rhodes (1978), DEA has been widely used to measure performance in both public and private contexts.

In this sense, efficiency was calculated by dividing the percentage of valid votes obtained by the elected mayor by the total amount spent on the campaign (in thousands of reais). The result indicates how many percentage points of votes were gained per one thousand reais invested, allowing comparisons of the financial performance of campaigns among municipalities. For the efficiency calculation, the study used the open-source software SIAD (Ângulo-Meza et al., 2005).

THEORETICAL FRAMEWORK

The financing of electoral campaigns is a widely debated topic in both Brazilian and international literature. Several studies highlight the importance of the capital invested in campaigns and its relationship with electoral

success. For example, Barbosa and Kerbauy (2024) provide a comprehensive overview of the influence of campaign expenditures in elections in the state of Bahia, demonstrating that financing is crucial for mobilizing resources and reaching the electorate. This concept also extends to the municipal sphere, where analyzing the return on investment becomes vital to understanding electoral efficiency.

Furthermore, the demographic and economic characteristics of municipalities play a significant role in communication expenditures and, consequently, in electoral performance. Paiva (2023) investigated the variables that influence campaign spending in the state of Rio de Janeiro, revealing that municipalities with a larger electorate and higher levels of urbanization tend to invest more in communication initiatives. This perspective is relevant for studying campaigns in cities with different social and economic profiles, such as those in the AMARP Microregion.

On the other hand, the type of expenditure employed in campaigns, whether traditional or modern, directly impacts the effectiveness of electoral strategies. Sampaio (2021) analyzed how these categories of spending affect electoral results, showing that modern campaign expenditures have a greater effect in larger municipalities, while in smaller localities traditional spending remains highly relevant. This aspect is crucial for understanding campaigns in the AMARP Microregion, where municipalities vary in size and structure.

The analysis of efficiency is also connected to the way campaigns are managed and planned. The study by Gonçalves, Souza, and Victorino (2019) highlights how advertising expenditures influence campaign costs, showing that efficient resource management can reduce the cost per vote. This approach is especially pertinent when evaluating the elected mayors of the AMARP Microregion, as efficiency in expenditures may determine whether the electoral outcome is favorable or not.

Moreover, transparency in expenditures is a critical variable for public management and the legitimacy of electoral campaigns. The work of Azevedo and Cabello (2020) emphasizes the importance of mechanisms of control and transparency in municipal public finances. Transparency is one of the pillars of public accountability and can influence voters' perceptions of candidates and their proposals, reinforcing the importance of clear disclosure of campaign expenditures.

In addition, budgetary governance emerges as an essential determinant of spending efficiency. Silva and Nascimento (2023) propose a framework to analyze the determinants of budgetary governance, which can be adapted to campaign management. Effective budget planning is fundamental to maximizing the efficiency of resources, particularly in contexts where scarcity shapes the priorities of electoral campaigns.

Finally, research highlights the need for studies that integrate both qualitative and quantitative data on campaign strategies. Alves (2022) suggests that understanding aspects such as the professionalization of campaigns and the political mobilization of candidates can enrich the analysis of spending efficiency. Campaigns that effectively connect with voters, combining financial planning with community engagement, tend to achieve better electoral outcomes.

RESULTS AND DISCUSSION

The analysis of the efficiency of elected mayors in converting expenditures into votes reveals significant variations among municipalities. As previously mentioned, the metric used was the percentage of valid votes obtained divided by the amount spent in thousands of reais, which provides an indication of how many percentage points each candidate secured per one thousand reais invested. This indicator shows how effective a campaign was in terms of electoral return on financial investment (Soares et al., 2021).

The most efficient case was that of Luci Peretti (PP), the elected mayor of Iomerê, who obtained 50.10% of the votes while spending R$ 44,200.00, resulting in approximately 1.134% of votes per one thousand reais invested. This performance indicates strong popular acceptance and a lean campaign that managed to reach voters at a relatively low cost. Another positive example is Mauro Ney Osmarin (PSDB), from Pinheiro Preto, who, despite obtaining a more modest vote share (38.44%), performed remarkably well in terms of efficiency, with expenditures of only R$ 44,091.00.

On the other hand, Alencar Mendes (PL), the elected mayor of Caçador, presented the lowest efficiency among the winners. Although he secured 55.04% of the votes, his campaign spending amounted to R$ 1,033,429.61, generating an efficiency index of only 0.053% per one thousand reais. This may suggest a more expensive campaign or one less focused on high-impact electoral actions. Similarly, Wilson Cardoso Júnior (PL), from Fraiburgo, also showed low efficiency, with 48.99% of the votes and campaign expenses totaling R$ 253,491.52.

Helio Marcelo Olenka (MDB), the elected mayor of Calmon, also deserves attention. With 60.34% of the votes and campaign spending of only R$ 64,500.00, his efficiency was remarkably high, surpassing that of many candidates with lower vote shares. This result demonstrates that well-planned and targeted campaigns can achieve significant outcomes without requiring large volumes of resources (Silva, 2023). Interestingly, smaller municipalities such as Iomerê, Ibiam, and Pinheiro Preto tend to exhibit higher efficiency indices. This may be related to the lower cost of campaigns in small towns,

where direct contact with voters remains influential and where local communication channels have proportionally greater reach (Gerber, Green, and Larimer, 2008).
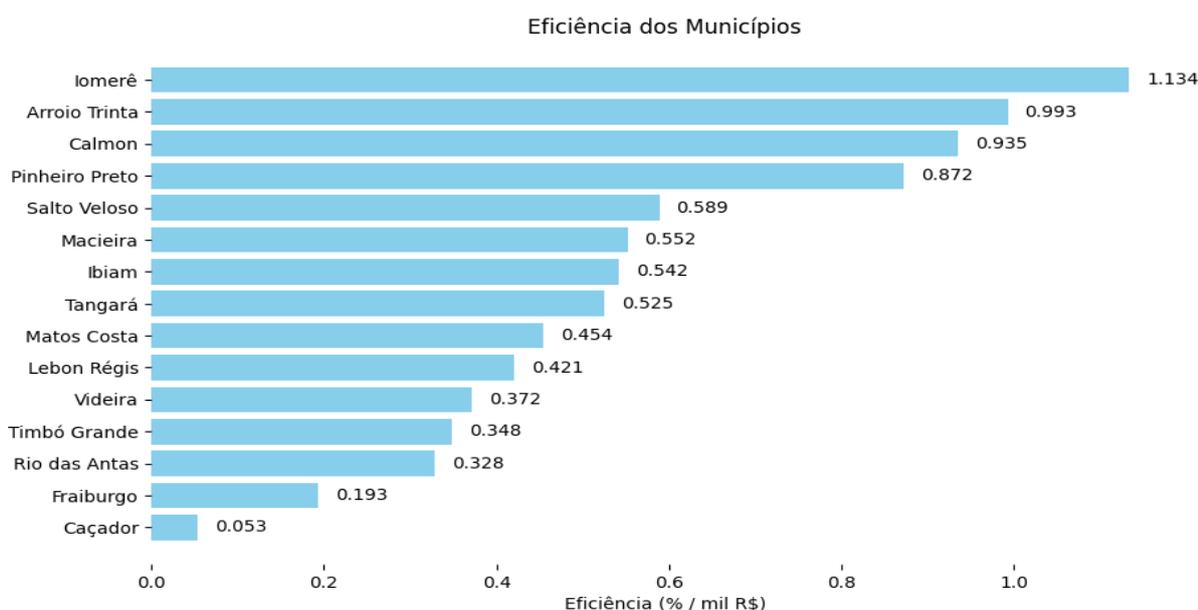
Table 1 presents the basic efficiency analysis between the percentage of votes obtained and the total campaign expenditures of the elected mayors.

Table 1
Basic efficiency analysis between the percentage of votes obtained and campaign expenditures of elected mayors

Municipality	Elected Mayor	Votes (%)	Expenditure (R$)	Efficiency
Arroio Trinta	Antonio Serighelli (PP)	50,89	51.226,66	0,993
Caçador	Alencar Mendes (PL)	55,04	1.033.429,61	0,053
Calmon	Helio Marcelo Olenka (MDB)	60,34	64.500,00	0,935
Fraiburgo	Wilson Ribeiro Cardoso Junior (PL)	48,99	253.491,52	0,193
Ibiam	Camilo Cezar M. Gatti (MDB)	56,96	105.100,00	0,542
Iomerê	Luci Peretti (PP)	50,10	44.200,00	1,134
Lebon Régis	Marcelo Spautz (PP)	49,58	117.795,80	0,421
Macieira	Simone Campagnin Zanella (PL)	60,35	109.326,00	0,552
Matos Costa	Danuza Rodrigues (MDB)	57,50	126.750,00	0,454
Pinheiro Preto	Mauro Ney Osmarin (PSDB)	38,44	44.091,00	0,872
Rio das Antas	Gilvane A. de Moraes (PL)	51,57	157.000,00	0,328
Salto Veloso	Nereu Borga (PP)	50,83	86.250,00	0,589
Tangará	Aldair Biasiolo (PL)	62,22	118.480,00	0,525
Timbó Grande	Ari José Galeski (UNIÃO)	42,77	122.712,70	0,348
Videira	Wilmar Carelli (MDB)	51,40	138.000,00	0,372

Source: the authors (2025).

Figure 2 presents the ranking of basic efficiency between the percentage of votes obtained and the campaign expenditures of the elected mayors.

Figure 2
Ranking of basic efficiency between the percentage of votes obtained and campaign expenditures of the elected mayors
Source: the authors (2025).

According to Figure 2, the analysis of the efficiency of the mayors elected in 2024 in the AMARP Microregion, based on the ratio between the percentage of valid votes and campaign expenditures, reveals substantial variations among municipalities. The highlight was Iomerê, where Luci Peretti (PP) achieved approximately 1.134% of votes per one thousand reais spent, representing the highest efficiency among those elected. In contrast, municipalities such as Caçador and Videira showed more modest performance, despite conducting high-cost campaigns.

Caçador, for instance, had the highest overall expenditure, yet its efficiency was surpassed by that of smaller towns. Municipalities such as Arroio Trinta, Calmon, and Ibiam also stood out positively, presenting efficiency indices above 0.85%, reflecting cost-effective and successful campaigns. Fraiburgo and Tangará, on the other hand, represented an intermediate situation, with relatively high investments and a proportional return in votes.

The analysis of the efficiency of campaign expenditures of mayors elected in the AMARP Microregion reveals important nuances that can be compared with similar studies, broadening the understanding of how financial resources are converted into votes. A pertinent example is the work of Mazon, Freitas, and Colussi (2021), which investigated the technical efficiency of small municipalities in Santa Catarina regarding public health expenditures. This study also applied Data Envelopment Analysis (DEA) and found that efficiency varied significantly among municipalities, a pattern likewise observed in the electoral campaign analysis. Their findings suggest that, in many cases, even with increased spending, efficiency does not improve, reflecting the same logic in electoral campaigns: high investments do not automatically ensure proportional electoral returns.

Another relevant study is that of Andrett et al. (2018), which explored the efficiency of public health expenditures in Brazil and concluded that states with higher levels of spending did not necessarily achieve better efficiency rates. This echoes the results observed among the mayors of AMARP, where some candidates, such as Alencar Mendes (Caçador), invested disproportionate amounts compared to the electoral returns obtained. Conversely, mayors who managed their campaigns more strategically, such as Luci Peretti (Iomerê), achieved impressive efficiency levels with relatively modest investments, underscoring the idea that strategic management can maximize results regardless of the volume of resources.

Furthermore, the study by Castro and Sousa (2018) on the efficiency of public expenditures in municipal education in Ceará presented similar findings, demonstrating that the correct allocation of resources is fundamental to ensuring the effectiveness of public policies. In the cases of Iomerê and Calmon, well-planned and economically managed campaigns resulted in high efficiency levels, aligning with Castro and Sousa's argument that strategic decision-making in resource allocation can overcome inefficiencies, even in contexts characterized by high levels of spending.

Finally, the work of Paganelli and Mendes (2022) highlights the scarcity of publications on the efficiency of health expenditures, just as there is a gap in the literature regarding the efficiency of campaign expenditures at the municipal level. This gap is real, as the analysis of electoral efficiency is still an emerging field that requires further studies like the present one, which seeks to understand how the effective allocation of financial resources can impact electoral outcomes.

The data collected in the AMARP Microregion show that both the choice of spending methods and the nature of expenditures play a critical role in campaign effectiveness. This aligns with broader conclusions regarding the efficiency of public expenditures in different sectors.

FINAL CONSIDERATIONS

The research showed that the efficiency of campaign expenditures of elected mayors in the AMARP Microregion varies significantly across municipalities. The indicator used, based on the ratio between the percentage of valid votes and the amount spent (per one thousand reais), made it possible to identify which candidates managed their resources more effectively. As highlighted, Luci Peretti (PP) from Iomerê stood out with the highest efficiency index in the sample, followed by candidates from smaller municipalities such as Pinheiro Preto and Calmon. In contrast, leaders from larger cities like Caçador and Videira presented the lowest efficiency levels, even with substantial campaign investments. These results suggest that well-planned strategies, direct contact with the electorate, and rational use of resources are more decisive for electoral success than high volumes of financing.

Despite its contributions, the research presents some limitations, such as the absence of qualitative data on the strategies adopted and the impossibility of controlling for all contextual variables that influence voting behavior. As a continuation, it is suggested that DEA be applied with multiple inputs (such as categories of expenses) and outputs (such as the absolute number of votes) and extended to other regions. This would allow for a broader understanding of technical efficiency in Brazilian electoral campaigns.

It is also emphasized that a decisive factor for success in municipal elections may be the interaction between the number of voters, the demographic density of a municipality, and the elements of social cohesion that lead a candidate to electoral victory. However, to make

this idea more precise, the development of more focused empirical research would be necessary.

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