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Determinants of Expenditures in the Brazilian State Judiciary: Empirical Evidence of Internal and External Factors

ABSTRACT

Objective: To identify the main determinants of per capita expenditure in the Brazilian State Judiciary and its composition between 2015 and 2021, considering the 26 states and the Federal District.

Method: The research employed an econometric panel data model with Random Effects (RE), analyzing the relationship between internal (structural) and external (socioeconomic) variables of the judicial system over seven years (189 observations).

Results: The findings indicate that expenditures are predominantly driven by the state's fiscal capacity (Net Current Revenue) and by the rigidity of the personnel structure, which accounts for 89% of resources. Notably, the volume of pending cases—used as a proxy for social demand—did not show a statistically significant relationship with expenditures. In light of Contingency Theory, these results reveal a bureaucratic structure with limited adaptability to environmental pressures, whose fixed costs do not respond to changes in the demand for judicial services.

Originality/Relevance: The originality of the study lies in the integrated analysis of internal factors (organizational structure) and external factors (socioeconomic context), surpassing the segmented approach of prior literature to explain the dynamics of judicial expenditures.

Contributions: As a contribution, the research demonstrates that performance improvement policies focused solely on personnel expansion are financially unsustainable and ineffective in reducing case backlogs, suggesting the need to direct investments toward management optimization and technology.

Keywords: Judiciary, Brazilian State Judiciary, State Judiciary Expenditure, Expenditure Composition.

José Márcio Gomes Pereira
FUCAPE Business School, ES, Brasil
josemarciogomperreira@gmail.com

João Eudes Bezerra Filho
FUCAPE Business School, ES, Brasil
joao@fucap.br

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1. INTRODUCTION

Notwithstanding the significant transformations promoted by Constitutional Amendment No. 45/2004, which established the National Council of Justice (CNJ) to supervise and regulate the administrative and financial operations of the Judiciary, society continues to demand enhanced transparency regarding this branch's expenditures (Nogueira et al., 2012; Oliveira, 2017). Data from the *Justice in Numbers* report (Conselho Nacional de Justiça [CNJ], 2022) show that in 2021, the expenditures of the Brazilian Judiciary totaled approximately R\$103.92 billion, representing 1.2% of the GDP. This percentage is higher than that observed in European countries such as France (0.15%), Portugal (0.28%), and Italy (0.19%) (Commission Européenne Pour L'efficacité de la Justice [CEPEJ], 2022). The State Judiciary, the focus of this study, was responsible for 59% of this amount, totaling R\$61.31 billion in the same year.

Despite advances in studies on the efficiency and performance of the Judiciary (Deyneli, 2012; Venturini et al., 2020), gaps persist in identifying the factors that explain the expenditures of the Brazilian State Judiciary from an integrated perspective. Previous research has focused on productivity or technical efficiency, without simultaneously considering the organizational and contextual variables that influence the cost structure and the use of public resources.

This gap is relevant given the growing demand for transparency and efficiency in the use of the Judiciary's resources (Akutsu & Guimarães, 2015; Castro, 2011). In a scenario where the Public Administration seeks greater rationalization in the use of financial resources, but with a Judiciary often classified as costly compared to other countries, this study aims to identify the main factors that influence the per capita expenditure of the Brazilian State Judiciary and its composition between 2015 and 2021, considering the 26 states and the Federal District.

In this context, the research seeks to answer the following question: what factors influence or are related to the per capita expenditure of the Brazilian State Judiciary?

This study contributes theoretically by applying Contingency Theory to analyze how internal and external factors interact in determining expenditures, offering an empirical approach that integrates structural and socioeconomic dimensions and broadens the understanding of the efficiency and sustainability of the State Judiciary.

As a practical contribution, the research provides subsidies for the debate and formulation of public policies aimed at improving judicial management. The identification of the positive influence of variables such as the number of judges, civil servants, personnel expenses, productivity, and per capita net current revenue on the expenditures of the State Judiciary highlights the need to implement more effective management strategies.

These findings underscore the importance of linking expenditures to clear and measurable performance indicators, promoting greater accountability and effectiveness. Furthermore, the study can serve as a basis for debates on reforms that prioritize a more rational judicial management, aligned with social demands and budgetary limitations, aiming for a more efficient, accessible, and transparent Judiciary (Akutsu & Guimarães, 2015).

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1 Contingency Theory

Contingency Theory emerged as a reaction to the classical approaches of administration, which sought universal management principles. This theory is based on the premise that there is no single, ideal way to structure and manage an organization, as its effectiveness depends on the contextual and environmental factors that influence it (Venturini et al., 2020). Thus, the organizational structure and practices must be adapted to external conditions, available resources, and internal characteristics, seeking a balance between the

environment and management (Silva et al., 2014).

In the context of the Judiciary, Contingency Theory provides a relevant theoretical basis for understanding how efficiency depends on the interaction between internal factors—such as the number of judges, civil servants, and productivity—and external factors—such as economic conditions and budgetary constraints. Judicial management must, therefore, adopt contingent strategies that consider the particularities of each court and each federative unit, adjusting to financial limitations and local procedural demands (Silva et al., 2014; Venturini et al., 2020). The application of this theory to the analysis of the expenditures of the Brazilian State Judiciary reinforces the importance of administrative flexibility and adaptive capacity as fundamental elements for improving the efficiency, transparency, and quality of the services provided to society.

2.2 Expenditure and Public Sector Accounting

It is of interest to Public Sector Accounting to investigate the composition of expenditures of public sector entities, in a managerial approach, especially of the Brazilian State Judiciary (Silva et al., 2020). Since, without the measurement of costs, it becomes unfeasible to evaluate the economy and efficiency of public expenditures (Bezerra Filho, 2022).

For the Judiciary to be able to perform good management, it is necessary to understand how many resources have entered and left, because, in the absence of this element, it will be impossible to obtain the cost of the public service and measure its efficiency (Araujo & Pereira, 2015). Therefore, the measurement of expenditures, especially in the Brazilian State Judiciary, should be the central point for evaluating how services are offered to the population. With this information, it becomes possible to identify the quality and effectiveness of the services provided by this branch of Justice (Areias & Carvalho, 2021; Venturini et al., 2020).

2.3 The Composition of State Judiciary Expenditure

The role of the State is to maximize social welfare through its interactions in the economy and society. These interactions take the form of public spending, which materialize in investments in production, income redistribution, health, education, public safety, and justice, among other areas (Oliveira & Strassburg, 2013).

According to the studies of Devarajan et al. (1996), Ferreiro et al. (2012), and Ferreiro et al. (2013), it is the composition of public expenditures that will define the qualitative aspect of its result, making it productive or unproductive, as fiscal policies place greater emphasis on the quality of finances and the composition of public expenses.

Given the growing social demands for transformations in public administration, it becomes essential to adopt strategies that promote efficiency in the allocation of resources (Viapiana, 2020). Studies by Diniz and Lima (2014) point out that reforms, initially focused on the efficiency of spending in the Executive branch, have advanced to other branches, especially the Judiciary, in search of greater transparency and better results. However, according to Sadek (2004) and Vieira and Pinheiro (2008), the Brazilian Judiciary still faces a negative perception from society, which considers it costly and ineffective in meeting the public's demands.

Within this approach to expenditure and efficiency of the state apparatus in Brazil, especially of the Brazilian State Judiciary, the object of this study, it is relevant to point out that in 2021, the total expenditure of the Brazilian Judiciary was R\$103.92 billion (CNJ, 2022). This amount corresponds to 1.2% of the GDP, a percentage higher than that of European countries such as France (0.15%), Portugal (0.28%), and Italy (0.19%) (CEPEJ, 2022). The expenditures of the State Judiciary, the object of this study, totaled R\$61.31 billion in 2021, equivalent to 59% of the total expenditures of the Brazilian Judiciary (CNJ, 2022).

When detailing the expenses, it is found that the expenditure with personnel and charges, including inactive personnel, corresponded to 89% of the total expenditures of the Brazilian State Judiciary in 2021 (CNJ, 2022). In contrast, capital expenditures, which include investments in technology, corresponded to only 1.8% of the remaining 11% of the total expenditure (CNJ, 2022).

2.4 Organization of the State Judiciary

The Brazilian Judiciary is composed of five branches of action, with the State Judiciary and the Federal Judiciary integrating the Common Justice, while the Electoral Justice, the Labor Justice, and the Military Justice compose the Special Justice (CNJ, 2022). For the purposes of this research, the State Judiciary of the 26 states and the Federal District will be addressed.

With the creation of the National Council of Justice (CNJ), there was, in addition to the purpose of centralizing financial control and articulating administrative improvement actions, the purpose of increasing the efficiency of the Brazilian Judiciary's expenditure (CNJ, 2022; Diniz & Lima, 2014). Despite the importance of the CNJ, according to the studies of Sadek (2010), the proposal to create a body with the function of carrying out external control of the Judiciary has always been rejected by the magistrates, which causes controversy, as the Judiciary is seen as the only body exempt from controls.

In this perspective, seeking greater efficiency in the allocation of resources in the judicial courts, Deyneli (2012) analyzed the administrative structure of courts in 22 European countries, using data from the report of the European Commission for the Efficiency of Justice (CEPEJ). The study identified a positive and significant correlation between judicial performance, measured by the number of cases judged, and factors such as the number of judges and the expenses with their remuneration. The results indicate that courts with more magistrates and better remuneration have higher performance.

The relationship identified by Deyneli (2012) is consistent with the perspective presented by Castro (2011), according to which the expansion of human and financial resources in the public sector tends to increase the performance of institutions, even if this leads to the expansion of budgetary expenditures. For the author, the challenge lies in balancing the availability of resources with management practices capable of ensuring efficiency and effectiveness in public spending.

Based on the previous literature that explores analogous variables, the following hypothesis is proposed:

Hypothesis 1 (H1): The number of judges provided per 100,000 inhabitants has a positive relationship with the per capita expenditure of the State Judiciary.

Another research aligned with the analysis of efficiency between resources employed (inputs) and results (outputs) is that of Tenório (2021), who investigated factors related to management in the Judiciary of the 27 federative units of Brazil between 2015 and 2019. The study considered internal variables, such as the number of civil servants in the technology area, judicial units per inhabitant, the proportion of own revenue in relation to expenses, and an external variable, the litigation rate. The results pointed to a positive and significant influence of these variables on the efficiency of resource allocation and the results achieved.

Considering the theoretical framework and the references presented previously, in which the variables already studied by other authors were exposed, hypotheses H2 and H3 are presented:

Hypothesis 2 (H2): The number of effective civil servants provided per 100,000 inhabitants has a positive relationship with the per capita expenditure of the State Judiciary.

Hypothesis 3 (H3): The per capita expenditure on personnel and charges of the active staff has a positive relationship with the per capita expenditure of the State Judiciary.

From a contingency perspective, the variables of hypotheses H1, H2, and H3 represent

the internal structure of the judicial organization (human and financial resources). The analysis of their relationship with expenditures allows measuring the weight of structural rigidity, a factor that can limit adaptation to the pressures of the external environment. However, the true test of contingency adaptability lies in verifying whether these expenditures respond adequately to environmental demands (such as the volume of cases and crime) and the state's financial capacity (RCL), which will be examined in the subsequent hypotheses.

2.5 Demand and Productivity of the State Judiciary

Gomes and Freitas (2017) observed that the increase in the volume of litigation in Brazil increases the expenditures with personnel and structure of the Judiciary. In a study on the 1st Region of the Federal Justice, they found that the number of judges is not correlated with the procedural demand, although there is a positive relationship between the demand, the performance of the courts, and the number of magistrates—which indicates that the increase in cases leads to the expansion of the staff, but not to the reduction of the case backlog. Venturini et al. (2020) complement that judicial efficiency depends more on the optimization of available resources than on the simple increase of judged cases.

Santos Neto et al. (2017) analyzed the efficiency of the state Judiciary between 2009 and 2014 and found that the increase in cases, expenses, and human resources does not improve efficiency; on the contrary, more structured courts tend to be less efficient. These results reinforce the conclusion of Castro (2011), that the volume of available resources does not determine performance, as courts with similar conditions can present different results.

Based on the theoretical framework and the references previously presented, which use variables in correlations analogous to this study, as well as the contributions of other authors on the subject, hypothesis H4 is formulated:

Hypothesis 4 (H4): The number of pending cases per 100,000 inhabitants has no correlation with the per capita expenditure of the State Judiciary.

Venturini et al. (2020) analyzed the efficiency in the judgment of cases of the Judiciary of the 4th Federal Region, covering the states of Southern Brazil, between 2013 and 2019. The study considered variables such as the number of civil servants, magistrates, active collaborators, available computers, and executed expenses. Despite the differences between the units, the authors concluded that efficiency does not have a positive relationship with these variables, but is linked to the better use of available resources, instead of the volume of judged cases.

Finally, hypothesis H5 is presented for the control variable:

Hypothesis 5 (H5): The productivity index of the magistrates has a positive relationship with the per capita expenditure of the State Judiciary.

From the perspective of Contingency Theory, procedural demand and productivity are, respectively, a factor of environmental pressure (Gomes & Freitas, 2017; Venturini et al., 2020) and a measure of internal response (Deyneli, 2012; Venturini et al., 2020). Analyzing their relationship with expenditures is crucial to understand if the organization adapts efficiently to the contingencies of its operational environment (Gomes & Freitas, 2017; Santos Neto et al., 2017; Venturini et al., 2020).

2.6 Socioeconomic Indicators

For Motta (2013), public managers must balance the composition of expenditures to meet the needs of the population, so that there is an efficient application of available resources. In this sense, according to Santos (2021), the Public Administration faces a dilemma of difficult resolution: balancing the set of unlimited collective needs with the scarcity of resources to meet all social demands. This is because, according to Boustan et al. (2013), the social ills related to inequality cannot be equated without the action of the public power.

When conducting a survey on the level of indebtedness of the municipalities of the

state of Minas Gerais, da Silva Santana et al. (2019) collected data from the 853 municipalities in the years 2005 to 2016, using the Net Current Revenue (RCL) as a financial variable. The results showed that the variables of revenue structure that make up the RCL positively affect the degree of indebtedness of the municipalities, that is, as revenues increased, indebtedness also increased.

Silva et al. (2015) verified, in 359 Brazilian municipalities (2004–2011), that the increase in Net Current Revenue is associated with the increase in expenses per student, indicating a positive and significant relationship between the variables—a result explained by the constitutional linkage of minimum education expenditures.

Almeida-Santos et al. (2015) identified, with data from the 27 federative units (2000–2010), a positive and significant relationship between GDP and public expenditures. Similarly, Silva et al. (2020) confirmed a positive correlation between regional GDP and the current expenses of the Brazilian Judiciary (2008–2011), indicating that greater economic activity tends to increase the level of public spending.

Based on the theoretical framework (Almeida-Santos et al., 2015; Silva et al., 2015), considering the behavior identified in the literature and applying it to the context of the Brazilian State Judiciary, it is expected that the per capita RCL of the states will have a positive relationship with the per capita expenditure of this sphere of the Judiciary. Therefore, the following research hypothesis is formulated:

Hypothesis 6 (H6): The Net Current Revenue (RCL) per capita of the respective state has a positive relationship with the per capita expenditure of the State Judiciary.

The Net Current Revenue (RCL) functions as a financial contingency variable, defining the limits of available resources in the environment (Almeida-Santos et al., 2015; Silva et al., 2015). Contingency Theory suggests that the organization's structure will adapt to this availability (Venturini et al., 2020), making the RCL one of the main predictors of

expenditures (Silva et al., 2020).

Another socioeconomic aspect refers to the rates of crime and homicides. To discuss the relationships of this indicator, the research of Lin (2009) related data on the criminality of 51 North American states, comprised in the period from 1970 to 2000, with the variable number of police officers to combat it. The studies of Worrall and Kovandzic (2010), similarly, used data on crime rates from 5,199 cities in the United States of America, from 1990 to 2001. Despite the simultaneity between the variables, the results of the regressions of both Lin (2009) and Worrall and Kovandzic (2010) pointed out that there is a negative relationship of the coefficients for the effects of police presence on the rates of crime and homicides.

The research of Gomes (2019) examines a time series of a 12-year period, from 2002 to 2014, in the 26 Brazilian states. The model used by the researchers estimated the effect of per capita public security expenditures on the homicide rate for each state. The result is negative and statistically significant for public security expenditures, although Gomes (2019) judges it to be of irrelevant scope, as the endogeneity problems could not be equated based on a simple fixed-effects model.

Based on the theoretical framework (Lin, 2009; Worrall & Kovandzic, 2010) and the variables analogous to this research, studied by the consulted literature, hypothesis H7 is proposed for the explanatory variable:

Hypothesis 7 (H7): The number of homicides per 100,000 inhabitants of the respective state has a negative relationship with the per capita expenditure of the State Judiciary.

According to Bourguignon et al. (2003), economic theory suggests that social inequality positively influences crime rates. However, the evidence in favor of this hypothesis is weak. According to the authors' research, conducted in the seven largest Colombian cities during the period from 1986 to 1998, social inequality has a very insignificant influence on

crime.

Given the above, based on the theoretical framework and the empirical evidence discussed (Lin, 2009; Worrall & Kovandzic, 2010), the following hypothesis is proposed for the explanatory variable:

Hypothesis 8 (H8): The number of criminal occurrences per 100,000 inhabitants of the respective state has a negative relationship with the per capita expenditure of the State Judiciary.

The increase in crime represents a pressure from the external environment that, theoretically, should increase the demand for judicial services (criminal cases) (Gomes, 2019; Lin, 2009; Worrall & Kovandzic, 2010). An adaptable judicial organization, according to Contingency Theory, should adjust its expenditure structure to respond to this pressure (Silva et al., 2014; Venturini et al., 2020). Therefore, by testing the relationship between crime and expenditures, this study evaluates whether the Judiciary behaves as a contingent organization, adapting its resources to the environmental demand, or as a bureaucratic structure insensitive to these external pressures.

Hypothesis 9 (H9): The number of municipalities in the respective state has a positive relationship with the per capita expenditure of the State Judiciary.

From a contingency point of view, crime and geographical dispersion (number of municipalities) are socioeconomic environmental factors (Gomes, 2019; Lima et al., 2018). Testing their influence on expenditures allows evaluating whether the judicial structure is sensitive and adaptable to the different realities and pressures of the context in which it is inserted (Silva et al., 2014; Venturini et al., 2020).

3. RESEARCH METHODOLOGY

3.1 Research Typology and Data Collection

This study adopts a quantitative approach of an explanatory nature, based on official secondary data. The choice for quantitative methods is justified by the need to measure the relationship between the variables and test the formulated hypotheses, allowing for the establishment of objective connections between internal and external factors and judicial expenditure (Creswell & Creswell, 2018).

The data were collected retrospectively (ex post facto study), covering the 26 Brazilian states and the Federal District over seven years. Initially, a descriptive and exploratory statistical analysis was performed to understand the data distribution and identify patterns or anomalies. Subsequently, an econometric analysis was conducted through multiple linear regression applied to panel data, as detailed below.

The sample comprises 189 observations from the 27 State Courts of Justice (2015–2021), forming a balanced panel. The period was defined by the availability of recent and consistent data on judicial expenses. The information, collected between May and October 2022, comes from official sources, ensuring the reliability, comparability, and reproducibility of the study.

3.2 Database

The data for the dependent variable – the per capita expenditure of the State Judiciary – as well as for the explanatory and control variables, were obtained from multiple official secondary sources. In particular, a large part of the information was extracted from the annual *Justice in Numbers* reports, made available by the National Council of Justice (CNJ), which provide detailed statistics of the Judiciary. Additionally, state financial data were collected from the National Treasury Secretariat (STN), through the Accounting and Tax Information System of the Brazilian Public Sector (SICONFI), and crime indicators from the Ministry of Justice and Public Security (MJSP) (via the SINESP database) and the Brazilian Forum of Public Security (FBSP). Some complementary socioeconomic variables were obtained from

the portal of the Institute of Applied Economic Research (IPEA), which gathers public statistics. These sources provide standardized and updated data, ensuring the national coverage and temporal comparability necessary.

The variables were organized into two groups — internal (related to the structure and productivity of the Judiciary) and external (related to the socioeconomic and criminal context) — according to the literature, which points out that judicial expenditures result from the interaction between institutional and environmental factors (Lima et al., 2018). Control variables were also included following this logic, to isolate contextual effects and ensure that the model contemplated both endogenous and exogenous aspects of the Judiciary.

3.3 Construction of Variables and Data Treatment

The explanatory and control variables were divided into three subgroups: judicial organization, demand and productivity of the State Judiciary, and socioeconomic indicators. The explanatory variables regarding judicial organization were measured by the number of provided judges of the State Judiciary per 100,000 inhabitants, the number of effective civil servants of the State Judiciary per 100,000 inhabitants, and the per capita expenditure on personnel and charges of the active staff.

Regarding the demand and productivity of the State Judiciary, the former was measured by the total number of pending cases in the State Judiciary per 100,000 inhabitants and, as a control variable, the productivity index of the magistrates of the State Judiciary was considered. It is important to highlight that the productivity index treated in this study did not take into account the level of complexity of the cases judged in the state justice branch.

The Magistrate Productivity Index (IPM), extracted from the ‘Justice in Numbers’ report (CNJ, 2022), is calculated by the ratio between the total number of closed cases (judged and closed) and the number of magistrates who worked during the year in the respective jurisdiction. This indicator is a measure of operational efficiency and was included as a

control variable to isolate the effect of productivity on expenditures.

The other explanatory and control variables used in the model, regarding the socioeconomic indicators of the state, were the per capita Net Current Revenue (RCL), the total number of criminal occurrences per 100,000 inhabitants, the total number of homicides per 100,000 inhabitants, and, as a control variable, the number of municipalities was used.

The data related to the monetary variables (RCL and per capita expenditure of the State Judiciary) were deflated by the National Broad Consumer Price Index (IPCA), in order to purge the effects of inflation in the researched period.

3.4 Econometric Strategy: Models for Panel Data

The characteristic of the data indicates that they are of the short panel type, in which the number of observation units (cross-sections) is greater than the number of time periods in the sample.

Thus, the following estimation methods are the most appropriate to measure the relationship between the explanatory variables and the dependent variable proposed in this work. Thus, the research will investigate how the behavior of internal and external variables can affect the per capita expenditure of the Brazilian State Judiciary.

The hypotheses raised in this research will be tested from the estimation of the following econometric equation, which adopts a logarithmic specification for the dependent variable and for the revenue variable:

$$\ln(\text{Expenditure}_{it}) = \beta_0 + \beta_1 \text{Magis}_{it} + \beta_2 \text{Servi}_{it} + \beta_3 \text{Dpea}_{it} + \beta_4 \text{Ptramita}_{it} + \beta_5 \text{Produtiv}_{it} + \beta_6 \ln(\text{RCL}_{it}) + \beta_7 \text{Crimes}_{it} + \beta_8 \text{Homicid}_{it} + \beta_9 \text{Municp}_{it} + \xi_{it} \quad (1)$$

Where the subscripts $i=1, 2, \dots, 27$ represent the 26 Brazilian states and the Federal District, and $t=1, \dots, 7$ represent the period, which ranges from 2015 to 2021. Table 1 below presents the legend of the variables used, with their respective classifications and sources.

Table 1

Description of the variables used

Variable	Description	Classification	Source
Expenditure _{it}	Per capita expenditure of the State Judiciary of state <i>i</i> , at time <i>t</i> ;	Dependent	Justice in Numbers
Magis _{it}	Number of provided judges of the State Judiciary per 100,000 inhabitants of state <i>i</i> , at time <i>t</i> ;	Explanatory	Justice in Numbers
Servi _{it}	Number of effective civil servants of the State Judiciary per 100,000 inhabitants of state <i>i</i> , at time <i>t</i> ;	Explanatory	Justice in Numbers
Dpea _{it}	Per capita expenditure on personnel and charges of the active staff of the State Judiciary of state <i>i</i> , at time <i>t</i> ;	Explanatory	Justice in Numbers
Ptramita _{it}	Total number of pending cases in the State Judiciary per 100,000 inhabitants of state <i>i</i> , at time <i>t</i> ;	Explanatory	Justice in Numbers
Produtiv _{it}	Productivity index of the magistrates of the State Judiciary of state <i>i</i> , at time <i>t</i> ;	Control	Justice in Numbers
RCL _{it}	Per capita Net Current Revenue of state <i>i</i> , at time <i>t</i> ;	Explanatory	STN/ SICONFI
Crimes _{it}	Number of criminal occurrences per 100,000 inhabitants of state <i>i</i> , at time <i>t</i> ;	Explanatory	MJSP
Homicid _{it}	Number of homicides per 100,000 inhabitants of state <i>i</i> , at time <i>t</i> ;	Explanatory	FBSP
Municp _{it}	Number of municipalities of state <i>i</i> , at time <i>t</i> ;	Control	Justice in Numbers
ξ _{it}	Random error term that captures the effect of the omitted variables in the model and that can affect the dependent variable;	Control	——

The choice of the estimator for the panel data model was made through a selection among four approaches: Pooled Ordinary Least Squares (POLS), Fixed Effects (FE), Random Effects (RE), and Generalized Least Squares (GLS). To determine the most consistent and appropriate method, the Breusch-Pagan, Pesaran, and Hausman tests were applied. The result of the latter favored the Random Effects (RE) model.

Although the Hausman test supports the use of RE, it is recognized that its premise — that of no correlation between the unobserved effects and the explanatory variables — is strong in the context of Brazilian public administration. To test the robustness of the findings, the model was re-estimated with Fixed Effects (FE). The results, available upon request, indicated that the signs and significance of most of the variables of interest remained consistent, suggesting that a potential omitted variable bias does not alter the main conclusions of the study. Thus, it was decided to maintain the RE model, as it is more

parsimonious and formally supported by the tests, with due recognition of this analytical sensitivity.

4. RESULTS AND DISCUSSIONS

The regression (Table 2) uses the dependent variable logExpenditure to model the factors that influence the per capita expenditures of the State Judiciary. The independent variables include institutional, productivity, and socioeconomic characteristics.

Table 2

Estimation result of the regression model with internal and external variables.

Dependent Variable: logExpenditure	(1) R.E.
Magis	0.0203* (0.01)
Servi	0.0018*** (0.00)
Dpea	0.0016*** (0.00)
Ptramita	0.0000 (0.00)
Prodot	0.0000** (0.00)
logrcl	0.3024*** (0.04)
Crimes	-0.0004*** (0.00)
Homicid	0.0014 (0.00)
Muncp	0.0001 (0.00)
Constant	1.1443*** (0.34)
R-Squared	0.89
Observations	189

Note. R.E. = Random Effects. Standard error in parentheses. $p < .10$, $p^* < .05$, $p < .01$. [a] Breusch-Pagan Heteroskedasticity Test, where the null hypothesis is constant variance of the error term. [b] Lagrange Multiplier Test, where the null hypothesis is that GLS produces more consistent estimators. [c] Pesaran's Test, where the null hypothesis is the non-existence of correlation between cross-sections. [d] Variance Inflation Factor, where a result greater than 10 indicates multicollinearity between the explanatory variables. [e] Hausman Test, where the null hypothesis is that R.E. estimation is more consistent than F.E.

4.1 Results versus Hypotheses

The results obtained in the regression model highlight important relationships between the explanatory variables and the per capita expenditure of the Brazilian State Judiciary. Below, the main findings are analyzed in light of the hypotheses raised in the theoretical framework:

a) Positive Relationship between the Number of Magistrates and Expenditures

(H1) The positive and significant coefficient of the *Magis* variable confirms hypothesis H1, suggesting that an increase in the number of magistrates per 100,000 inhabitants increases per capita expenditures. This finding is aligned with the studies of Deyneli (2012), who identified positive correlations between the number of judges and performance in European courts. However, the theoretical framework also points out that efficiency is not just a matter of more human resources, but of their better allocation (Gomes & Freitas, 2017). Thus, the positive impact of the increase in magistrates on expenditures requires a complementary analysis of the resulting efficiency.

b) Positive Relationship between the Number of Civil Servants and Expenditures

(H2) The significant and positive impact of the *Servi* variable on per capita expenditures corroborates hypothesis H2, reinforcing the idea that the personnel structure is a relevant determinant in the costs of the State Judiciary. Studies such as those by Santos Neto et al. (2017) and Tenório (2021) indicate that the number of civil servants can directly impact expenditures, although the relationship with efficiency is less clear. The high proportion of personnel expenses (89% of the total, according to the CNJ, 2022) highlights a critical point of attention for financial management and the need to optimize this allocation.

c) Positive Relationship between Personnel Expenses and Expenditures (H3) The *Dpea* variable, which represents per capita personnel expenses, showed a positive and statistically significant impact, confirming hypothesis H3. This result is consistent with the

theoretical framework, which emphasizes that personnel expenses constitute the largest portion of the Judiciary's budget (CNJ, 2022). However, the literature points out that the increase in personnel costs should be evaluated in relation to the effectiveness of the services offered (Venturini et al., 2020). The 27.70% growth in personnel expenses from 2015 to 2021 (CNJ, 2022) suggests a trend of unsustainable increase without clear counterparts of efficiency.

d) Absence of Correlation between Pending Cases and Expenditures (H4) The absence of statistical significance in the *Ptramita* variable validates hypothesis H4, indicating that the number of pending cases does not directly influence per capita expenditures. This result is aligned with studies such as those by Venturini et al. (2020), which point out that efficiency is not necessarily associated with the volume of cases, but with the quality of resource management. Despite this, the absence of a direct correlation between demand and expenditures may indicate structural inefficiencies in the management of the Judiciary.

e) Productivity of Magistrates and Expenditures (H5) The *Produ* variable showed a positive and significant relationship, confirming hypothesis H5. Although the productivity of magistrates has a moderate impact on expenditures, the theoretical framework points out that productivity by itself does not guarantee efficiency (Gomes & Freitas, 2017; Santos Neto et al., 2017). This finding suggests that higher expenditures can sustain higher levels of productivity, but this does not automatically imply greater effectiveness or reduction of case backlogs.

f) Net Current Revenue (RCL) and Expenditures (H6) The *logrcl* variable, which represents the per capita net current revenue, had the highest coefficient (0.3024) and was highly significant, confirming hypothesis H6. This result is in accordance with studies such as those by Silva et al. (2015), who identified that higher revenues tend to increase public expenditures. Although the increase in revenues expands financial capacity, the theoretical

framework highlights the need to link expenditures to efficiency indicators, which is still a challenge for the Judiciary.

g) Negative Relationships with Criminal Indicators (H7 and H8) The Crimes variable showed a significant negative correlation with per capita expenditures, suggesting that lower crime rates are associated with lower expenditures, partially confirming hypothesis H8. However, the Homicid variable was not significant, contradicting hypothesis H7. This discrepancy can be explained by regional or methodological specificities, as pointed out by Gomes (2019) in relation to the complexity of criminal indicators and their relationship with expenditures.

h) Absence of Relationship with the Number of Municipalities (H9) The Muncp variable did not show statistical significance, rejecting hypothesis H9. This result suggests that the number of municipalities does not directly influence per capita expenditures, despite potential logistical and administrative challenges associated with states with a larger number of jurisdictions. This finding is in line with the study of Castro (2011), who pointed out that variations in the volume of available resources do not always translate into jurisdictional performance.

4.2 Final Discussion

The main results of this study indicate that internal factors to the Judiciary, such as the size of the personnel structure (number of magistrates, number of civil servants, and per capita personnel expenses) and the state's fiscal capacity (per capita net current revenue), exert a positive and significant influence on the per capita expenditure of the Brazilian State Judiciary. In contrast, no statistically significant relationship was observed with external variables such as the volume of pending cases, the homicide rate, or the number of municipalities. These findings directly answer the central research question, indicating that the hypotheses related to internal determinants are supported by the data, while the

hypotheses associated with the variables of demand and crime do not find empirical support. In summary, it was found that the organizational and internal financial variables are the main determinants of the per capita expenditures of the State Judiciary, aligning with the objective of identifying such factors.

In line with Contingency Theory, it was observed that this predominance of internal factors reflects a rigid cost structure, centered on human resources. The findings reinforce that personnel expenses account for the largest portion of expenditures (about 89%, according to the CNJ, 2022) and can limit institutional efficiency. Gomes and Freitas (2017) warn that this predominance of personnel expenses is a limiting factor for efficiency, while Santos Neto et al. (2017) argue that improving the performance of the Judiciary requires redesigning processes and adopting technologies to reduce the rigidity of costs. Additionally, a positive relationship was found between the productivity of magistrates and per capita expenditure, indicating that courts with more productive magistrates tend to spend more (H5 confirmed). However, this moderate impact suggests, according to Gomes and Freitas (2017) and Santos Neto et al. (2017), that higher productivity by itself does not guarantee real efficiency gains. Therefore, the results corroborate that increases in the number of magistrates and civil servants cause increases in per capita expenditures, but indicate that more resources do not, by themselves, ensure greater operational effectiveness.

It was also observed that states with higher per capita net current revenue tend to allocate more resources to the State Judiciary. This result indicates that the state's fiscal capacity directly influences the composition of the Judiciary's costs, corroborating previous studies (Silva et al., 2015). However, the theoretical framework warns that revenue increases should be accompanied by control mechanisms and linkage to efficiency indicators, which are still little explored in the State Judiciary. In other words, expanding the budget without strategic management will hardly translate into a real gain in productivity.

Regarding the external variables related to demand and crime, the findings showed that neither the number of pending cases nor the homicide rate directly influenced per capita expenditures. This result reinforces the evidence that the efficiency of the Judiciary does not depend solely on the volume of procedural demand, but on the quality of resource management (Castro, 2011; Venturini et al., 2020). A negative correlation was also observed between the general crime rates and expenditures, suggesting that safer states have, on average, lower expenditures. This finding partially confirms the hypothesis of a negative influence of crime on expenditures. These evidences indicate that contextual factors, such as public safety, influence the costs of the Judiciary in a complex way, which points out that the rationalization of expenditures should focus mainly on internal efficiency, rather than on demand variables.

Another relevant finding refers to the composition of expenditures: a very low proportion of capital expenditures (investments in technology and infrastructure) was observed, only about 1.8% of the total, while personnel expenses increased by approximately 27.7% between 2015 and 2021. This imbalance reaffirms the rigid character of the cost structure and highlights the need to prioritize strategic investments in technology. As demonstrated by Deyneli (2012) and Tenório (2021), balancing human and technological resources can generate more sustainable productivity gains. In other words, directing resources only to costing tends to limit significant improvements in judicial performance.

5. CONCLUSION

The results of this study reveal that the expenditures of the State Judiciary are primarily determined by factors of structural rigidity (number of magistrates and civil servants) and by the state's fiscal capacity (RCL), while social demand (volume of cases) does not show a significant impact. This disconnection offers an important theoretical

implication: from the perspective of Contingency Theory, the Judiciary behaves less like an adaptive organization and more like a classic bureaucracy, whose costs are defined by its internal structure, and not by the pressures of the external environment.

It was also found that states with lower crime rates had, on average, lower per capita expenditures with the Judiciary, which suggests that contexts of greater public safety may require fewer judicial resources and reinforces the importance of a strategic management oriented towards efficiency. The analyzes carried out highlight that the predominance of personnel expenses (about 89% of the total) reflects a rigid cost structure, with little room for adjustments without a broader structural review. The positive correlation between the productivity of magistrates and per capita expenditure suggests that, although the allocation of additional resources can sustain higher levels of productivity, this does not automatically translate into greater efficiency or a reduction in the case backlog.

Furthermore, the low proportion of capital expenditures – such as investments in technology, which corresponds to only 1.8% of the total – highlights a critical point: the need to direct resources to initiatives that increase the efficiency and effectiveness of judicial operations, aligning the system's performance with the challenges imposed by society's demands. In other words, expanding the volume of resources without re-evaluating their allocation will hardly result in efficiency gains, which reinforces the need for an effectively strategic budgetary management within the State Judiciary.

The main methodological limitation of the study lies in the analysis of strictly contemporary relationships, which, although appropriate for an exploratory approach, does not capture the temporal dynamics of the budgetary cycle and the long-term effects of judicial activity, admitting the possibility of endogeneity and reverse causality. Additionally, the model did not incorporate relevant variables such as procedural complexity, investments in technology, and the regional and administrative heterogeneities of the courts. Overcoming

these limitations points to a future research agenda, which may include the application of advanced econometric methods, such as the Generalized Method of Moments (GMM), to establish more robust causal relationships.

Finally, for future research, it is recommended to expand the analyzed variables — including aspects of the administrative structure of the courts, the profile of the cases, and investments in technology — and to investigate the relationship between the costs of the Judiciary and the quality of services, based on satisfaction and transparency indicators. Comparative studies between regions or more extensive periods can offer new insights into the evolution of expenditures and their link with the efficiency and effectiveness of the judicial system. Furthermore, exploring the linkage of the Judiciary's constitutional transfers to efficiency and accountability criteria can favor a more rational, transparent public management aligned with the demands for an accessible and effective Justice.

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Determinantes dos Gastos da Justiça Estadual Brasileira: Evidências Empíricas de Fatores Internos e Externos

RESUMO

Objetivo: Identificar os principais determinantes do gasto per capita da Justiça Estadual brasileira e sua composição entre 2015 e 2021, considerando os 26 estados e o Distrito Federal.

Método: A pesquisa utilizou um modelo econométrico de dados em painel com Efeitos Aleatórios (EA), analisando a relação entre variáveis internas (estrutura) e externas (socioeconômicas) ao sistema judicial ao longo de sete anos (189 observações).

Resultados: Os achados indicam que os gastos são predominantemente influenciados pela capacidade fiscal do estado (Receita Corrente Líquida) e pela rigidez da estrutura de pessoal, responsável por 89% dos recursos. Notavelmente, o volume de processos em tramitação — proxy para a demanda social — não apresentou relação estatisticamente significativa com os gastos. À luz da Teoria da Contingência, esses resultados revelam uma estrutura burocrática pouco adaptável às pressões ambientais, cujas despesas fixas não respondem às variações na demanda por serviços judiciais.

Originalidade/Relevância: A originalidade do estudo reside na análise integrada de fatores internos (estrutura organizacional) e externos (contexto socioeconômico), superando a abordagem segmentada da literatura anterior para explicar a dinâmica dos gastos judiciais.

Contribuições: Como contribuição, a pesquisa evidencia que políticas de melhoria de desempenho focadas apenas na expansão de pessoal são financeiramente insustentáveis e ineficazes para reduzir o acúmulo de processos, sugerindo a necessidade de direcionar investimentos para a otimização da gestão e da tecnologia.

Palavras-chave: Judiciário, Justiça Estadual Brasileira, Gasto da Justiça Estadual, Composição do gasto.

José Márcio Gomes Pereira 

FUCAPE Business School, ES, Brasil
josemarciogpereira@gmail.com

João Eudes Bezerra Filho 

FUCAPE Business School, ES, Brasil
joao@fucape.br

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