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Effects of the managerial capacity of managers on the financial condition of large brazilian municipalities

Efeitos da capacidade gerencial dos gestores sobre a condição financeira dos grandes municípios brasileiros

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Keywords
Managerial Capacity.
Public Manager.
Financial Condition.

Abstract

This study aimed to examine the influence of managers' managerial capacity on the financial condition of large Brazilian municipalities. Based on the theoretical framework, it was hypothesized that the education level and experience of mayors, the education level of administration and finance directors, and the education level of public servants can positively influence the financial condition of local governments from the perspective of budget and cash solvency. The study covered the 100 largest Brazilian municipalities in terms of GDP, in the 2009-1019 period. To test the proposed hypotheses, the generalized least squares (GLS) regression technique was used. Results revealed that the managerial capacity of managers and employees has a positive influence on the financial condition of large Brazilian municipalities with regard to cash solvency, but it is not relevant for influencing budgetary solvency. The study's results corroborate the assumptions of the human capital theory, serving as tools to support public finance management.

Palavras-chave
Capacidade gerencial.
Gestor público.
Condição financeira.

Resumo

Este estudo teve como objetivo verificar a influência da capacidade gerencial dos gestores na condição financeira dos grandes municípios brasileiros. Baseado no corpo teórico, foram elaboradas hipóteses de que a escolaridade e a experiência dos prefeitos, a escolaridade dos diretores de administração e finanças, e a escolaridade dos servidores públicos podem influenciar positivamente a condição financeira dos governos locais sob o aspecto orçamentário e de caixa. O estudo abrangeu os 100 maiores municípios brasileiros em termos de PIB, no período de 2009 a 2019. Para testar as hipóteses propostas utilizou-se a técnica de regressão por mínimos quadrados generalizados (GLS). Os resultados revelaram que a capacidade gerencial dos gestores e colaboradores exerce influência positiva na condição financeira dos grandes municípios brasileiros sob o aspecto da solvência de caixa, mas não é importante para influenciar a solvência orçamentária. Os resultados da pesquisa são corroborados com os pressupostos da teoria do capital humano, servindo como instrumentos de apoio à gestão das finanças públicas.

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Practical implications

The study provides evidence on the need to investigate organizational factors and their relationship with governmental financial condition. In addition, it reveals the need to improve the mechanisms for measuring the managerial capacity of public managers and servants.

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1 INTRODUCTON

For developing countries like Brazil, there is still much to be learned about the role of performance management in the public sector (Cannavina & Parisi, 2015), including in municipal financial performance (Avellaneda & Gomes, 2010).

Many local governments in Latin America are still led by people with low qualifications, who waste human skills and financial resources, in addition to administrative failures that these governments should not commit (Avellaneda & Gomes, 2010).

In this context, research discusses education level as part of managerial operations for ensuring performance measurement in the public sector (Sell et al., 2020; Fiirst & Beuren, 2021). According to the definition of Rougoor et al. (1998), managerial capacity involves managers' personal characteristics and skills regarding organization, control and planning. Therefore, maintaining a healthy financial condition depends on best organizational and managerial practices (Liou & Wang, 2019).

In this respect, the human capital theory posits that more qualified and experienced individuals will develop skills that assist in decision making processes, which can lead a government to achieve a healthy financial condition (Fiedler, 1986). Given this reflection, the following research question was formulated: To what extent does the managerial capacity of managers influence the financial condition of large Brazilian municipalities? Given this problem, the study aimed to examine the effect of managers' managerial capacity on the financial condition of large Brazilian municipalities.

The definition of municipal financial condition is proposed by Wang et al. (2007), treating it as a government's capacity to provide public services in the present and future. According to the authors, larger municipalities have a greater availability of resources, as well as greater demand for services.

This study aims to contribute to the literature dedicated to the analysis of factors that affect performance in the public sector (Gomes et al., 2013; Avellaneda & Gomes, 2015, 2017; Park, 2020; Sell et al., 2020; Fiirst & Beuren, 2021; Avellaneda et al., 2022). It also contributes to the literature on governmental financial condition (Brown, 1993; Groves & Valente, 2003; Kloha et al., 2005; Wang et al., 2007; Lima & Diniz, 2016; Liou & Wang, 2019) by fomenting the discussion of organizational factors.

In Brazil, studies on financial condition have focused on financial factors (Vieira, 2019; Nobre, 2017); fiscal stress (Donato, 2020; Júnior, 2018); environmental factors (Lira, 2019; Gonçalves, 2018); and social factors (Santos, 2019). Little attention has been directed to organizational factors. For this reason, the present study aims to fill this gap in the academic literature by providing specific organizational factors and their influence on municipal financial condition.

This research presents practical contributions by pointing out internal factors that can affect the performance of governmental organizations, in addition to contributing to advancing the literature. Therefore, the more we can learn about the aspects related with public managers' decision making process, the more informed society will be, and the better it will be able to choose its managers, and to make its partisan choices.

2 THEORETICAL FOUNDATIONS AND THE HYPOTHESES

It is understood that managerial capacity can assist the decision making process in addressing problems and opportunities assertively (Rougoor et al., 1998). The measures that are most often used to measure managerial capacity are related with personal characteristics (age, education level and experience in the activity). Therefore, in this study, the proxy for managerial capacity is the mayor's human capital, encompassing their education and experience related to the occupation.

In the 21st century, mayors face complex and changing challenges that can be more easily overcome when the manager possesses qualification in terms of education and experience (Avellaneda & Gomes, 2017, 2015). In addition, qualified mayors are able to take advantage of the positive institutional, political, demographic and socio-economic characteristics of their municipality (Avellaneda & Gomes, 2017).

Specifically, cognitive characteristics and political skills are concentrated in the manager, arguing that these are tools for these managers to extract information from each contextual component of the city they manage (Avellaneda, 2007). Given the reported evidence, the following hypothesis is formulated:

H_1: The more qualified the mayor, the better the financial condition of large Brazilian municipalities.

In addition to mayors' professional qualification, the experience related to their respective position can contribute to facing day-to-day challenges. For Meir and O'Toole (2002), using experience and education can be a measure of managerial capacity. Thus, the skills a mayor has acquired by experience can contribute to municipal performance (Avellaneda, 2007; Avellaneda & Gomes, 2017; Sell et al., 2020). Therefore, the second research hypothesis is formulated:

H_2: Large Brazilian municipalities, whose mayors have experience in the public area present a better financial condition.

The study of Avellaneda et al. (2022) shows that in addition to mayor roles, the duties of public servants can also influence municipal fiscal capacity. On this thought, Moravec's (2011) study reveals that the fiscal problems faced by the American economy in 2007-2009 were largely due to failures in the leadership of finance professionals.

The managers in charge of finance have the responsibility to help local governments overcome financial difficulties and keep financial health throughout economic cycles. Therefore, it is expected that a higher level of education of directors shows better results, resulting in the following hypothesis:

H_3: The higher the qualification level of administration and finance directors, the better the financial condition of large Brazilian municipalities.

Situated within the public sector organizational environment are the management personnel (directors, managers, chiefs, etc.), representing the essential workforce in the provision of services to the population, a role that encompasses various managerial competences (Pichiai, 2010). The study of Mcleod and Harun (2014), in analyzing the challenges faced to implement an accounting standards reform in Indonesian municipalities, revealed that this reform was seriously hampered by the lack of qualified personnel. Therefore, activities carried out in institutions depends, at least in part, on the professional qualifications and experience of the members of teams executing them (Azevedo et al., 2019).

In light of the above, it is noted that improving the education of public sector administrative personnel results in measures that impact the management of financial resources, which contributes to improving the situation of finance (Pichiai, 2010). Thus, the fourth research hypothesis is formulated:

H_4: The higher the education level of public servants, the better the financial condition of large Brazilian municipalities.

Given the foregoing, according to Lima and Diniz (2016), efforts have been made in the literature to produce empirical studies with the idea of developing evaluation and measurement indicators for financial condition, such as the works of Brown (1993), Kloha et al. (2005), and Wang et al. (2007). Gorina et al. (2019) define financial condition as a position within a spectrum of "well-being" usually referred to as fiscal health.

Thus, financial condition is influenced by environmental, organizational and financial factors (Groves & Valente, 2003; Gorina et al., 2017). The organizational factors are characterized by the managerial and political practices created by management in response to changes caused by environmental factors (Lima & Diniz, 2016).

3 METHODOLOGICAL PROCEDURES

The present study used a hypothetico-deductive approach, employing quantitative data analysis techniques. The analysis covered various time periods formed by different management cycles. The study adopts as its population the 100 (one hundred) largest Brazilian municipalities, in terms of gross domestic product (GDP) at current prices and percentage and cumulative participation, according to the Brazilian Institute of Geography and Statistics (IBGE, 2018).

However, those municipalities that did not provide data for analysis or which presented outliers were

excluded. Thus, the study sample resulted in 49 municipalities with data for the 2009-2019 period, coinciding with three municipal elections, and totaling 539 observations.

The data used in the analysis were collected from the databases of the National Treasury Secretariat, the Superior Electoral Court, the Brazilian Institute of Geography and Statistics, and the Ministry of Labor and Employment.

The dependent variable in the study is the financial condition of the municipalities under analysis. The study has a limitation that consists in the short-term indicators proposed in the study of Vieira (2019), as detailed in Table 1.

Table 1. Indicators of measurement of the dependent variable

Description	Variable	Operational definition	Theoretical foundation
Quick ratio	QR	Cash and cash equivalents / Non-current liabilities	Gorina et al. (2017); Rivenbark e Roenigk (2011); Wang et al. (2009); Brown (1993).
Expense coverage	EC	Current revenue / Current expenditures	
Current revenue over non-current liabilities	CRNCL	Current revenue / Non-current liabilities	Mbulawa (2019); Vieira (2019); Gorina et al. (2017); Lima e Diniz (2016).
Per capita revenue	PR	Total Revenue / Population	

Source: Veira (2019).

The quick ratio indicator reveals how much of available resources the cash reserves can cover short-term obligations. The expense coverage indicator examines whether current revenues are sufficient to cover the current expenditures foreseen in the annual budget. The current revenue over non-current liabilities indicator refers to the government's capacity to obtain cash resources to pay for long-term obligations. Per capita revenue reveals the level of revenue in relation to population size.

By using the Pearson's correlation test, significant correlations were found between the variables, see Table 2. The strategy of formulation of composite indicators to better represent Financial Condition is thus validated, as indicated in the literature, in studies like Wang et al. (2007), Clark (2015), Justice et al. (2019) and Maher et al. (2020).

Table 2. Correlation matrix of financial condition indicators

Variable	QR	EC	CRNCL	PR
Quick ratio (QR)	1.0000			
Expense coverage (EC)	0.0696**	1.0000		
Current revenue over non-current liabilities (CRNCL)	0.0651**	0.2020	1.0000	
Per capita revenue (PR)	0.0213*	-0.0101*	-0.1820	1.0000

Note: (*) Significant at 5%; (**) Significant at 10%.

Source: Elaborated by the authors.

Thus, to obtain the financial condition composite indicator, the present study employed exploratory factor analysis as a means to empirically find the representative factors of this construct. Therefore, we sought to build factors that met the decision criteria postulated by Corrar et al. (2007) and Fávero and Belfiore (2017), as shown

in Table 3.

Table 3. Decision criteria for the exploratory factor analysis

Criterion	Decision
KMO (Kaiser-Meyer-Olkin test)	≥ 0,5
Bartlet's sphericity test	< 0,001
Communalities	≥ 0,5
Total explained variance	Only eigenvalues above 1
Factor loading of components	≥ 0,30

Source: Corrar et al. (2007) and Fávero e Belfiore (2017).

Once the criteria for factor analysis were met, factors generated through principal component analysis were extracted (Hair et al., 2009). From the factor analysis, 2 (two) factors were generated based on the indicators representing financial condition: Cash Solvency Factor (CSF) and Budgetary Solvency Factor (BSF), according to Table 4.

Table 4. Factor analysis for measuring financial condition

Factor	Variable	Factor loading	Commonalities	KMO	Eigenvalue > 1	% Explained variance
CSF	QR	0.6747	0.5347	0.5579	1.2955	0.3239
	PR	0.6704	0.6803	0.4833		
BSF	EC	0.6153	0.5079	0.5111	1.0471	0.2618
	CRNCL	0.7788	0.6197	0.5023		

Source: Data from the study.

It is worth noting that the per capita revenue indicator, while presenting a Kaiser-Meyer-Olkin (KMO) statistic below the average (0.4833), was included in the study as it was very close to 5.0. Moreover, the indices were aligned to what is recommended by Fávero and Belfiore (2017) and Corrar et al. (2007), in which the Kaiser-Meyer-Olkin (KMO) sampling adequacy test indicated a general value of 0.504. In turn, it is possible to proceed with the factor analysis.

It is observed that factor loadings are high, and communalities, above 5.0. Moreover, the eigenvalues of each factor are above 1.0, and the cumulative percentage of explained variance of the variables manifested by the 2 (two) generated factors is 58.57%, with the cash solvency factor explaining 32.39%, and the budgetary solvency factor explaining 26.18% of the variation of data.

Next, 2 financial condition composite indicators were built from the factor loading of the two generated factors (cash solvency factor and budgetary solvency factor). This procedure was carried out based on the study of Bunce and Goldberg (1979) and Rusca et al. (2015), as demonstrated in Table 5.

Table 5. Financial condition construct

Factor	Variable	Factor loading	Formula
CSF	QR	0.6747	CSF = 0.6747*(QR) + 0.6704*(PR)
	PR	0.6704	

Table 5. Financial condition construct

Factor	Variable	Factor loading	Formula
BSF	EC	0.6153	BSF = 0.6153*(EC) + 0.7788*(CRNCL)
	CRNCL	0.7788	

Source: Rusca et al. (2015) and Bunce and Goldberg (1979).

The independent variables represent the managerial capacity. It is worth stressing that the explanatory variable (education level) was collected, adapted and measured according to the education level proposed by the manual for Brazilian employers' RAIS form on labor and employment information. According to this manual, the education level classification ranges from "illiterate" to "Ph.D.", comprising 11 education level tiers as shown in Table 6.

Table 6. Education level indicator

Level	Description	Theoretical foundation
1	Illiterate	Gomes, Alfinito & Albuquerque (2013); Avellaneda & Gomes (2015, 2017); Sell et al. (2020).
2	Until incomplete 5th grade	
3	Until complete 5th grade - primary education	
4	6th to 9th grade - primary education	
5	Complete primary education	
6	Incomplete secondary education	
7	Complete secondary education	
8	Incomplete undergraduate studies	
9	Complete undergraduate studies	
10	Master's degree	
11	Ph.D.	

Source: RAIS, (2021).

Given the education level, the independent variables are presented as shown in Table 7.

Table 7. Description of independent variables

Description	Variable	Operational definition	Expected sign	Hypotheses
Mayor's education level	M_EL	The mayor's education level / highest level attained	+	H_1
Mayor's experience	M_EXP	Dummy: 1 if the mayor has experience as a politician, and 0 otherwise	+	H_2

Table 7. Description of independent variables

Description	Variable	Operational definition	Expected sign	Hypotheses
Administration and finance directors' education level	FD_EL	Number of directors with the highest education level /Total of directors	+	H_3
Public administration education level	PS_EL	Education level /Total of public servants	+	H_4

Source: Data from the study.

The study incorporated into the set of independent variables the control variables described in Table 8.

Table 8. Description of independent variables

Control variables			
Description	Variable	Operational definition	Theoretical foundation
Right-wing parties	RwP	Dummy representing 1 for each right-wing party, otherwise 0.	Carreirão (2007); Avellaneda e Gomes (2017); Power e Jr (2009).
Left-wing parties	LwP	Dummy representing 1 for each left-wing party, otherwise 0.	Carreirão (2007); Avellaneda e Gomes (2017); Power e Jr (2009).
Demographic Density	DD	Comprehends the relationship between the number of inhabitants and the territorial area.	Lima e Diniz (2016); Rodríguez-Bolívar et al. (2016); Veiga (2010).
Gross domestic product *per capita*	GDP	Controlling for the effects of population wealth. Corrected by the cumulative variation of IPCA for each year.	Veira (2019); Sell et al. (2020).
Election year	EY	In environments close to elections, politicians make decisions that affect the economy. Thus, the variable representing the election year aims to control for these effects.	Nordhaus (1975).

Source: Data from the study.

The parties are classified as follows. Left-wing parties: PT, PDT, PPS, PC do B, PSB, PV, PSTU, PCO, PMN, PSOL, and REDE; central parties: PMDB, PSDB, MDB, and SOLIDARIEDADE; right-wing parties: PP, PRN, PDC, PL, PTB, PSC, PSP, PRP, PSL, PSD, DEM, PHS, and PRB.

The purpose of this study was to observe the managerial capacity of managers as an necessary element to manage municipal financial condition. To this end, it used the Generalized Least Squares (GLS) technique with balanced panel data.

From this determination, the equation with the selected variables can be thus described:

$$FC_{it} = \beta_0 + \beta_1 M\_EL_{it} + \beta_2 M\_EXP_{it} + \beta_3 FD\_EL_{it} + \beta_4 PS\_EL_{it} + \beta_5 RwP_{it} + \beta_7 LwP_{it} + \beta_8 DD_{it} + \beta_9 GDP_{it} + \beta_{10} EY_{it} + \varepsilon_{it}$$

Where:

FC - Financial Condition;

M_EL - Mayor's Education Level

M_EXP - Mayor's Experience

FD_EL - Administration and Finance Directors' Education Level

PS_EL - Public Servants' Education Level

RwP- Right-wing Parties;

LwP- Left-wing Parties;

DD - Demographic Density

GDP- Gross Domestic Product per capita;

EY - Election Year

4 ANALYSIS OF RESULTS

In this section, the study presents the descriptive statistics, followed by the correlation matrix and, finally, the result of the panel data regression for the proposed model.

Table 9 presents the descriptive statistics for the financial condition variables used in this study.

Table 9. Descriptive statistics for the variables of financial condition

Variable	Obs.	Mean	Standard deviation	Min.	Máx.
Quick ratio (QR)	539	1.6831	1.4936	0.3335	10.5773
Expense coverage (EC)	539	1.1482	0.6965	0.0010	13.3687
Current revenue over non-current liabilities (CRNCL)	539	2.5312	2.8254	0.0003	34.3021
Per capita revenue (PR)	539	2933.55	1164.7300	297.9900	7718.67

Source: Data from the study.

Overall, it is observed that throughout the 10 analyzed years, the means for the measuring indicators of the financial condition of large Brazilian municipalities were positive and always above 1, revealing positive results for financial condition.

With regard to the independent variables, Table 10 shows the respective relative frequencies.

Table 10. Relative frequency of the independent variables

Frequency of education level %	Mayor's education level %	Adm. and finance directors' education level %	Public servants' education level %
Illiterate	0.00	0.00	0.04
Until incomplete 5th grade	0.00	0.22	1.00
Until complete 5th grade - primary education	0.00	0.20	1.33
6th to 9th grade - primary education	0.00	0.30	2.14
Complete primary education	1.49	3.63	4.85
Incomplete secondary education	0.00	1.17	2.19
Complete secondary education	7.05	27.51	30.82
Incomplete undergraduate studies	6.86	3.59	4.41
Complete undergraduate studies	84.60	62.41	51.82
Master's degree	0.00	0.69	1.26
Ph.D.	0.00	0.28	0.14

Source: Data from the study.

With regard to the control variables, Table 11 below shows the descriptive statistics.

Table 11. Descriptive statistics for the control variables

Variables	Obs.	Mean	Standard deviation	Min.	Máx.
Demographic density	539	2.0213	2.2558	0.0378	10.5589
GDP per capita	539	37.2429	20.8208	9.6991	224.359

Source: Data from the study.

Demographic Density: comprehends the relationship between the number of inhabitants and the territorial area. Larger municipalities have greater capital circulation and therefore possess a better financial condition due to the greater opportunities to exploit their tax base.

GDP: represents the local community's economic base, allowing to control for the effects of wealth difference between these municipalities. Thus, the municipalities with greater GDP possess greater wealth. Therefore, they have greater possibilities of achieving a good financial condition. The analysis of the dummy variables used as control variables shows, in Table 12, the frequency of mayor experience and the participation of parties according to their ideological representation.

Table 12. Frequency of dummy variables.

Variable	Obs.	Frequency
Mayor's experience	539	70.13
Left-wing parties	539	41.37
Central parties	539	42,86
Right-wing parties	539	15.77

Source: Data from the study.

Mayors' experience: represents prior experience related to the occupation. Presenting a 70.13% frequency, it indicates that most managers have prior experience as politicians.

Party ideology: represents the influence of parties on financial condition. The study sample is represented by 41.37% of left-wing parties, 42.86% of central parties, and 15.77% of right-wing parties.

As for the results of the Pearson's correlation between the variables, Table 13 demonstrates that mayors' education level and experience do not present a significant correlation with cash solvency and budgetary solvency. The variables administration and finance directors' education level, public servants' education level, demographic density, GDP, and the election years 2016 and 2019 were strongly correlated with cash solvency. In contrast, political parties and the election year 2012 show a negative correlation with cash solvency. In relation to the variable budgetary solvency, only demographic density showed a positive correlation.

Table 13. Correlation matrix

Variable	CS	BS	M_ EL	M_ EXP	FD_ EL	PS_ EL	LwP	RwP	DD	GDP	EY 2012	EY 2016	EY 2019
CS	1.00												
BS	-0,15	1.00											
M_EL	0.00	0.03	1.00										
M_EXP	0.02	-0.06	0.13***	1.00									
F_EL	0.20**	0.03	-0.01	0.01	1.00								
PS_EL	0.32**	-0.01	0.131***	0.11***	0.25***	1.00							
LwP	-0.02	0.07	0.00	-0.09	-0.19	0.05	1.00						
RwP	-0.01	-0.03	-0.01	-0.01	0.08**	0.01	-0.36	1.00					
DD	0.10**	0.13	0.00	-0.09	0.01	0.00	0.16***	-0.02	1.00				

Table 13. Correlation matrix

Variable	CS	BS	M_EL	M_EXP	FD_EL	PS_EL	LwP	RwP	DD	GDP	EY 2012	EY 2016	EY 2019
GDP	0.75***	-0.11	-0.08	-0.08	0.12	0.07	0.07	-0.10	0.03	1.00			
EY 2012	-0.11	0.02	0.03	-0.03	-0.01	-0.05	-0.02	-0.01	-0.01	-0.03	1.00		
EY 2016	0.14**	0.02	-0.03	-0.05	0.02	0.07	0.09	-0.03	0.01	0.12***	-0.10	1.00	
EY 2019	0.26**	-0.03	0.01	0.11	0.04	0.16	-0.10	0.06	0.01	-0.12	-0.10	-0.10	1.00

Note: (*) Significant at 1%; (**) Significant at 5%; (***) Significant at 10%.

Source: Data from the study.

To analyze the effect of managers' managerial capacity on financial condition, the GLS regression technique was used. This method was chosen in order to control for autocorrelation and heteroskedasticity effects, as it allows obtaining efficient estimates.

To detect the problem of multicollinearity, a VIF test was performed, and its average (2.11) for all variables was adequate.

It should be noted that the financial condition, the model's dependent variable, was measured through the construction of two factors: Cash Solvency Factor (CSF) and Budgetary Solvency Factor (BSF), as detailed in item 3.2.

The panel data model for financial condition based on the budgetary solvency factor, while significant, did not present explanatory parameters with statistical significance related to the variables of interest, therefore it can be affirmed that managerial capacity does not influence financial condition from a budgetary perspective. Table 14 presents these results.

Table 14. Budgetary solvency regression model

Variables	Coefficient	Standard error	Z Statistic	P-value
Mayor's education level	0.3010	1.0125	0.3000	0.7660
Mayor's experience	-0.2028	0.1785	-1.1400	0.2560
Adm. and finance directors' education level	0.3816	0.3015	1.2700	0.2060
Public servants' education level	-0.0420	0.5568	-0.0800	0.9400
Left-wing parties	0.2262	0.1841	1.2300	0.2190
Right-wing parties	-0.1138	0.2341	-0.4900	0.6270
Demographic density	0.0784	0.0374	2.1000	0.036**
Gross domestic product	-0.0111	0.0039	-2.8100	0.005**
Year 2012	0.0332	0.2779	0.1200	0.9050
Year 2016	-0.2690	0.2797	-0.9600	0.3360
Year 2019	-0.6273	0.2828	-2.2200	0.0270**
Constant	2.4225	1.0456	2.3200	0.0210**
Wald (X2)	26.900			
P-value	0.005			

Source: Data from the study.

The results of the panel data model for the financial condition base on the cash solvency factor are presented in Table 15.

Table 15. Cash solvency regression model

Variables	Coefficient	Standard error	Z Statistic	P-value
Mayor's education level	488.0258	258.6538	1.89	0.059*
Mayor's experience	106.1952	45.593	2.33	0.02**
Administration and finance directors' education level	201.1399	77.0182	2.61	0.009***
Public servants' education level	897.9431	142.2362	6.31	0.000***
Left-wing parties	-146.1445	47.0361	-3.110	0.002**
Right-wing parties	-69.1907	59.7995	-1.160	0.247
Demographic density	43.5702	9.5591	4.56	0.022**
Gross domestic product	26.7204	1.0065	26.55	0.000***
Year 2012	-128.6559	70.9797	-1.81	0.070*
Year 2016	231.9319	71.4418	3.25	0.001***
Year 2019	817.3055	72.2382	11.31	0.000***
Constant	-281.8054	267.0964	-1.060	0.291
Wald (X2)	962.42			
P-value	0.0000			

Note: (*) Significant at 1%; (**) Significant at 5%; (***) Significant at 10%.

Source: Data from the study.

It is observed that the variable mayor's education level was statistically significant at 10%, revealing that a mayor's managerial capacity, in this aspect, explains the positive development of the financial condition of cash solvency of large Brazilian municipalities. This finding provides a contribution from a theoretical perspective (Avellaneda & Gomes, 2015, 2017; Sell et al., 2020; Silva & Bruni, 2019).

Research in Brazil has found a non-significant effect. The studies of Avellaneda and Gomes (2017), as well as Gomes et al. (2013) indicate that a mayor's quality, measured by education and experience, does not explain variations in property tax collection in Brazilian municipalities. In the study of Sell et al. (2020), the variable mayor's education level, which composed the contingency factor of organizational leadership, did not significantly influence municipal performance. The study of Silva and Bruni (2019) demonstrated that the municipal manager's education level does not positively influence the expansion of transparency of public administration procedures.

The variable mayor's experience was statistically positive at 5%, demonstrating that political experience influences the financial condition of cash solvency. In Brazil, however, the results of this study counter the findings of Avellaneda and Gomes (2010; 2017), Gomes et al. (2013), and Sell et al. (2020). Specifically, these studies demonstrate that a mayor's experience in the public sector has no impact on municipal performance.

Continuing the analysis of data, the variable administration and finance directors' education level showed statistical significance of 1%, revealing that the higher the education level of directors, the better for financial condition based on cash solvency. Thus, the results are in line with the theoretical view of Schultz (1960) and Backer (1962), in which investments in the human capital of managers is a critical element for governments' financial sustainability.

The variable public servants' education level, significant at 1%, allows concluding that the greater the investment in public servants' human capital, the better the financial condition of large Brazilian municipalities in terms of cash solvency. Public organizations therefore need competent employees to develop performance indicators, as well as collect and interpret data.

Regarding the control variables, the variable characterized by the ideology of left-wing parties have presented a negative influence (-3.110), significant at 5%, showing that left-wing parties have presented a negative influence on the financial condition of cash solvency of large Brazilian municipalities. These findings counter the studies of Avellaneda and Gomes (2017) and Gomes et al. (2013), since the evidence gathered in these studies has indicated the absence of ideological influence of parties on the financial performance of Brazilian municipalities.

The relationship between demographic density and the financial condition of municipalities from the perspective of cash solvency was positive and significant at 1%, revealing that the greater the demographic density, the greater the circulation of capital in local governments.

The variable GDP, representing the wealth of the local community, was statistically significant at 1%, revealing that the financial condition of large Brazilian municipalities, from the perspective of cash solvency, is strongly influenced by the local economic base. Thus, the larger the GDP, the healthier the financial condition and, consequently, the better the capacity to face fiscal problems (Vieira, 2019; Sell et al., 2020).

The variable election year was significant and positive at 1% for 2016 and 2019, and at 10% for 2012, revealing that in election periods, managers seek to improve governments' cash solvency as a way of attracting the electorate's attention and obtain votes for reelection or the maintenance of the party in power (Nordhaus, 1975).

5 CONCLUSIONS

This study has analyzed the influence of organizational factors on municipal financial condition over three municipal terms in office. The results of the analysis demonstrate that the organizational factors mayor's education level and experience, finance directors' education level, and public servants' education level significantly impact municipal financial condition.

Regarding the control variables, the results revealed that demographic density, Gross Domestic Product per capita, and election year positively influenced local financial condition. In contrast, left-wing parties influenced it negatively.

This study advances in the accounting-governmental literature by identifying the organizational factors that reflect on the quality of the financial condition of large Brazilian municipalities, since Brazil lacks studies about organizational factors and their association with financial condition. Thus, it is concluded that the goals proposed in this study were achieved.

Therefore, it is worth highlighting as a theoretical contribution to the deepening of the discussion about organizational performance in the public sector, specifically of the reflections of managerial capacity on the financial condition of larger Brazilian municipalities. Hence, in order for Brazilian public administration to actually be a factor of wealth and competitive advantage for the country, it is indispensable to increasingly invest in the professionalism of its employees.

Thus, the results of this study contribute to the decision making process of public managers and policymakers, and to accountability and the disclosure of information about the education level of public-sector employees to the population.

This study limited itself to relate education level and professional experience as part of the managerial capacity on financial condition. Perhaps other managerial skills may have a more significant effect. For future studies, it is recommended that the other Brazilian municipalities and states be analyzed, with the inclusion of behavioral and social-environmental variables that might enhance the understanding of governments' financial health.

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