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Explanatory factors of the financial condition in the municipalities of Minas Gerais

Factores explicativos de la condición financiera en municipios de Minas Gerais

Fatores explicativos da condição financeira em municípios de Minas Gerais

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Abstract

Purpose: Identify the explanatory factors of the financial condition of small municipalities in Minas Gerais.

Methodology: From the perspective of the Theory of Financial Condition, the research was carried out in two stages: first, the financial condition of the municipalities was calculated using Brown's (1993) model; next, the financial variables capable of influencing the financial condition of the municipalities in the sample were identified. To do this, accounting information was collected in the period 2017-2020, from 229 municipalities in the state of Minas Gerais that had a population of less than 5 thousand inhabitants in 2020. An econometric model with panel data was used for the analysis of the relations.

Results: The variables Personnel Expenditure (GP) and Degree of Indebtedness (GE) were significant at a 1% level, with GP being positively related and GE negatively related to the government's financial condition. Therefore, the results prove the existence of financial factors related to budget solvency and long-term solvency that affect the financial condition of small municipalities.

Contributions of the Study: The research contributes to the literature on the explanatory factors of the financial condition by analyzing small municipalities, using a model consolidated in the international literature, especially amid the discussion of PEC 188/2019, on the merger of these municipalities. In addition, it can help public managers in decision-making, by pointing out the explanatory factors that explain the municipality's financial condition.

Keywords: Government Financial Condition. Public finances. Local Government.

Resumen

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Objetivo: Identificar los factores explicativos de la situación financiera de los pequeños municipios de Minas Gerais.

Metodología: Desde la perspectiva de la Teoría de la Condición Financiera, la investigación se realizó en dos etapas: en la primera se calculó la condición financiera de los municipios utilizando el modelo de Brown (1993); posteriormente, se identificaron las variables financieras capaces de influir en la condición financiera de estos municipios. Para esto, se recopiló información contable en el período de 2017 a 2020 de 229 municipios del estado de Minas Gerais que tenían una población de menos de 5 mil habitantes en el año 2020. Se optó por utilizar un modelo econométrico con datos de panel para el análisis de las relaciones.

Resultados: Se encontró que las variables Gasto en Personal (GP) y Grado de Endeudamiento (GE) fueron significativas a un nivel de significación del 1%, donde GP se relaciona positivamente y GE se relaciona negativamente con la condición financiera del gobierno. Así, los resultados revelan la existencia de factores financieros relacionados con la solvencia presupuestaria y la solvencia de largo plazo que impactan en la condición financiera de los pequeños municipios.

Contribuciones del Estudio: La investigación contribuye a la literatura sobre los factores explicativos de la condición financiera mediante el análisis de pequeños municipios, utilizando un modelo consolidado en la literatura internacional, especialmente en medio de la discusión de la PEC 188/2019 sobre la fusión de estos municipios. Además, puede ayudar a los gestores públicos en la toma de decisiones al señalar los factores explicativos significativos de la situación financiera municipal.

Palabras clave: Condición Financiera Gubernamental. Finanzas públicas. Gobiernos Locales.

Resumo

Objetivo: Identificar os fatores explicativos da condição financeira dos pequenos municípios de Minas Gerais.

Metodologia: Sob a ótica da Teoria da Condição Financeira, a pesquisa foi realizada em duas etapas: na primeira, calculou-se a condição financeira dos municípios por meio do modelo de Brown (1993); na sequência, identificaram-se as variáveis financeiras capazes de influenciar a condição financeira dos municípios da amostra. Para isso, foram coletadas informações contábeis, no período de 2017 a 2020, de 229 municípios do estado de Minas Gerais com população inferior a 5 mil habitantes no ano de 2020. Optou-se pela utilização de um modelo econométrico com dados em painel para análise das relações.

Resultados: Constatou-se que as variáveis Gasto com Pessoal (GP) e Grau de Endividamento (GE) foram significativas ao nível de significância de 1%, sendo que GP se relaciona positivamente e GE negativamente com a condição financeira governamental. Assim, os resultados revelam a existência de fatores financeiros relacionados à solvência orçamentária e à solvência de longo prazo, que impactam a condição financeira de pequenos municípios.

Contribuições do Estudo: A pesquisa contribui para a literatura sobre os fatores explicativos da condição financeira, ao analisar pequenos municípios, utilizando um modelo consolidado na literatura internacional, especialmente em meio à discussão da PEC 188/2019 sobre a fusão destes municípios. Além disso, pode auxiliar os gestores públicos na tomada de decisões, ao apontar os fatores explicativos significativos para a condição financeira municipal.

Palavras-chave: Condição Financeira Governamental. Finanças Públicas. Governos Locais.

1 Introduction

In general, much has been said about the continuous increase of public spending in Brazil, where expenditures have exceeded the amount of collected taxes. At such times, it is natural that topics like reducing the costs of the Brazilian state and assessing the financial condition of government bodies are on the academic agenda (Clark, 2015; Gonçalves & Caldas, 2019; Wang, Dennis & Tu, 2007), and in the news.

In Brazil, there is a high centralization of resources collected by the Union and, on the other hand, a disproportionate decentralization of competencies regarding the provision of public services (Galvarro, Braga, Ferreira, & Oliveira, 2009), so that sub-national entities have received more significant assignments from the federative pact. Hence, in order to achieve these skills, it is essential to distribute the earned revenues among the federal bodies that concentrate a greater collecting power, in order to reduce the economic imbalance between federal, state, and local governments. Receiving these resources is even more necessary in Brazilian municipalities, especially small ones, since they depend almost exclusively on revenues from federal and state transfers (Firjan, 2019).

When it comes to small municipalities, where the main source of revenue is resource transfer, these issues are even more frequent. Local managers often find themselves totally dependent on resources transferred from other federal bodies. This scenario, especially in periods of country's loss of economic capacity, can lead to inefficiencies in public policies and budgetary impossibility by local governments, putting at risk the maintenance of essential public services (Caetano, Ávila & Tavares, 2017).

Since the revenue collected through taxes in small municipalities is often insufficient to cover expenses with basic public policies required by the community, such as health, education, and assistance, government transfers strengthen and ensure the financial condition of small towns (Galvarro et al., 2009). There is a significant number of municipalities with a small population and low capacity to generate economic activity. The projection refers to 1,252 (one thousand two hundred and fifty-two) municipalities in Brazil with a population of less than 5,000 inhabitants, and with own revenue of less than 10% of their total revenue (CNM, 2020).

Although the power of own receipts by small municipalities' is low, it is undeniable the relevant role they play in the process of decentralization of public policies, receiving the pressure of popular demands. Therefore, municipal governments are challenged not only to mobilize and value local resources, but also to be the agents that implement social policies (Santos, 2009). This shows the growing financial engagement by small municipalities' managers, since there is a resource commitment for the decentralized policies.

Along with these issues, the debate on the economic feasibility of small Brazilian municipalities has gained greater relevance with the Constitutional Amendment Proposal (PEC) 188/2019, known as the PEC for the Federative Pact Reform. The proposal aims to drive the

extinction of municipalities with a population under 5,000 inhabitants that are unable to provide for their financial sustainability. The sustainability is measured based on the municipality's own revenue, which is made up of three taxes - Urban Real Estate Tax (IPTU), Real Estate Conveyance Tax (ITBI), and Municipal Services Tax (ISS) - and must correspond to at least 10% of its revenue (Brasil, 2019).

Given all financial difficulties faced by small municipalities, which are a concern for public managers, interest in the financial condition of these public institutions becomes even more pertinent. Financial condition is understood as the capacity of an organization to comply with its financial obligations during the continuous process of providing goods and services, keeping them at the same levels as existing services (Wang et al., 2007). The Financial Condition Theory addresses precisely the government's ability to manage collected resources and apply them to satisfy society needs, circumventing internal and external pressures regarding revenue and public spending (Lima & Diniz, 2016). In this case, one concern relates to governments' failure to meet expected standards with regard to operational position, debt, and community needs and resources over the years (Kloha, Weissert & Kleine, 2005).

Therefore, it is especially important to analyze the financial factors of the public sector, since local managers can increase public debt levels to compensate for delays and gaps between municipal revenue flows and costs (Prior, Castellanos, Pérez-López & Zafra, 2019). And the occurrence of these events can affect the so-called financial condition of local governments.

Financial difficulties faced by governments, which affect their financial status, are mainly issues linked to revenue or expenditure (Donato, 2020). Hence, this paper sought to answer the following question: **What are the explanatory factors of the financial condition of small municipalities in Minas Gerais?** We chose this state because it has the largest number of municipalities in Brazil. In addition, their regional diversity is similar to the heterogeneity existing in the country.

A better understanding of the factors that influence the financial condition of small municipalities can extend the debate in the area of government financial analysis. Hence, we highlight the relevance of studies that develop explanatory and predictive models of financial condition, especially of small municipalities. Another important factor is the current scenario where many of these municipalities may merge with larger neighboring ones, which can affect their operational and financial structures.

The study is relevant to the public sector, by contributing to the discussion on the financial condition of small municipalities, which are an important part of public resources' application in goods and services to society. It also contributes to a wider dissemination of knowledge on the fiscal structure of these municipalities, which has recently gained prominence in the academic and scientific circles.

2 Literature Review

2.1 Financial Condition Theory

The financial health of any government body symbolizes an important element that can interfere both in the provision of an acceptable public service that responds to the needs of the population, such as health, education, security, and other social services, and in the general performance of a public manager (Zafra-Gómez, López-Hernández & Hernández-Bastida, 2009). Therefore, knowing and analyzing the financial condition, besides enabling the government to anticipate attitudes and decisions that can minimize the impact of crises, should

be a common and regular procedure for keeping the government's financial health (Araújo, Souza, Diniz, Rêgo & Lira, 2023).

According to Lima and Diniz (2016), the study of the financial condition of local governments aroused the interest of academics in the 1970s in the United States. However, it was only in the 1990s that several American states implemented more vigorous measures to monitor the fiscal situation of local governments, as they observed that several American cities were going through financial difficulties (Kloha et al., 2005).

Determining the financial position of a local government is relatively simple. However, an important previous fact is communicating the financial condition, since it provides users with a basic understanding of the financial reporting model, which leads to the analysis of the financial condition (Rivenbark, Roenigk & Allison, 2010).

As identified by Bahl (1982), who was one of the first researchers to develop measurement models of financial condition, individual analysis of financial statements only shows a financial position in a given period, besides indicating a budget deficit or surplus. However, this does not necessarily enable predicting future events of financial instability. According to the author, the information in the budget balance sheet may be incapable of inferring social welfare, i.e. a good financial condition.

Although there are numerous definitions of financial condition in the literature, they can be specific in nature or broad in scope. For Rivenbark et al. (2010), a specific definition, for example, would be defining financial condition as solvency. Although it is much easier to use a single financial index for communicating financial condition, one of the main limitations of this approach is that a narrow definition, based on a single financial index, simply cannot capture the numerous financial dimensions of a government entity that uses funds from different sources for its various types of public activities and services provided.

Hendrick's (2011) definition of financial condition is: the state of balance that exists between the different dimensions or components of the government's financial sphere, regarding its expenditures, obligations, fiscal resources, revenues, and internal resources. Perhaps the most widely accepted and used concept of financial condition, which has a broader scope and adopted in this study, is the ability of an organization to comply with its financial obligations on time during the continuous process of providing goods and services, in order to keep them at the same levels as existing services (Wang et al., 2007). An advantage of this definition is its similarity to the way securities rating agencies measure a community's financial condition and risk, focusing mainly on the likelihood of fiscal deterioration and on the local government's capacity to write off debts (Rivenbark et al., 2010).

Hence, financial condition is directly related to the allocation of public resources according to the demands of local communities and to the provision of public goods and services to society, which can also be affected by economic instability and contribute to fiscal stress (Dantas, Diniz, & Lima, 2019). These elements show that financial condition has dynamic characteristics that make it a complex phenomenon, since it is influenced by various factors of economic, social, organizational, political, and fiscal environments (Donato, 2020).

A government entity with a satisfactory financial condition is able to support itself amid financial crises. Even if the level of service provided by the government is kept in times of drop in receipts, managers must remain cautious to act timely to reduce spending, so that the organization remains financially healthy (Lima & Diniz, 2016). Hence, the Financial Condition Theory addresses both the capacity of collecting funds and the pressure for expenditures exerted by the local population on a given government (Dantas et al., 2019).

The proper measurement of financial condition must consider sustainability, flexibility, and vulnerability. It should include indicators that measure the government's ability to support existing programs, provide welfare, and meet the demands of its users through available resources, to analyze the capacity to respond to changes in the economy, and to measure the level of dependence of a government on resource transfers from other government spheres (Prior et al., 2019).

However, regarding the assessment of financial condition, the diversity of contexts between local jurisdictions hinders a 'one-size-fits-all' approach, although there are more similarities than differences (Ramsey, 2013). Hence, there are no key solutions for measuring and assessing local government's financial condition. The answer lies in developing jurisdiction-specific analytical models to monitor, assess, and identify routinely potential problems, early enough to avoid and mitigate fiscal vulnerabilities.

Brown (1993) proposed an alternative way for evaluating the financial condition of similar municipalities, more oriented towards small ones, focusing on the short term. It employs 10 financial indicators and became known as the 'ten-point model of financial condition', and is based on elements related to revenues, expenditures, indebtedness, and operational position. We used this model in this paper, and detail it in section 3 - methodological procedures.

Analyzing the financial condition of government entities has been the object of academic interest, both nationally and internationally, like the papers by Kang and Chen (2022), Wang et al. (2007), Araújo et al. (2023), and Araújo, Leite and Leite (2019).

Wang et al. (2007) sought to measure the financial condition of US states. They focused on four dimensions of financial condition: cash, budget, long-term solvency, and service level. To this end, they used 11 financial condition indicators. The results showed that the measure is fairly reliable and valid. In addition, financial condition varies a lot among states, showing that there is much room for improvement.

Kang and Chen (2022) correlated financial condition with government fiscal transparency of local governments in California, USA. Their findings indicate that governments with weaker financial condition, especially those with higher levels of indebtedness, tend to be more transparent.

Araújo et al. (2019) analyzed how financial condition indicators influence the granting of government subsidies by Brazilian states. The results show that there was no major change in the grants made, even in a situation of fragile financial condition indicators, caused by economic crisis.

Araújo et al. (2023) studied the relationship between subjective (public managers' self-declaration) and objective (indicators) measures of the financial condition of 200 municipalities in the state of Paraíba. They found that managers notice better the financial condition for the short term, which involves liquidity and the level of indebtedness, than for the long term, which addresses solvency and investments.

In the following section, we discuss relevant points about finance and the financial condition of small municipalities, besides presenting recent studies that investigated the behavior of the financial condition of local governments.

2.2 Public Finances and Financial Condition in Small Municipalities

The assumption of fiscal federalism is to establish parameters of rationality and economic efficiency, to guide adjustments in the organization of federations. In this sense, fiscal federalism can be considered a way that seeks to relate tax competence and the rational

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allocation of public resources, according to the demands and particularities of each local government (Dantas et al., 2019).

The model of fiscal federalism adopted in Brazil, where the criterion for sharing public revenues from the Municipal Share Fund (FPM) ensures that smaller municipalities benefit most from the transfers to be made, provides national development based on reducing regional and local inequalities (Carvalho, 2020). It contributed to the creation, incorporation, merger, and separation of municipalities in the country, as the creation of new ones would be a way of attracting more resources from other government bodies.

The 1988 Federal Constitution assigned political and tax autonomy to municipalities, recognizing these local governments as members of the federation, and established the sharing of resources through intergovernmental transfers, which benefited the municipalities (Leite, 2014). Therefore, the legislation on intergovernmental transfers favors the opportunistic creation of small municipalities, through the emancipation of small towns. However, financial autonomy, which is not guaranteed only by intergovernmental transfers, is essential for the provision of public goods and services to the community and for the success of this decentralization process, which is common to federalism (Moreira, 2020).

In addition to intergovernmental transfers, municipal finances rely on their own revenue and also on voluntary transfers, made without any legal obligation. Generally, these transfers, sent as collaboration, aid, or financial assistance, are made through the formalization of an agreement between the municipality and another entity, state or federal (Suzart, Zuccoloto & Rocha, 2018). Table 1 shows a synthesis of municipalities' different funding sources.

Table 1
Municipalities' source of funding.

Own Revenue	Mandatory Intergovernmental Transfers		Voluntary Intergovernmental Transfers
	Union	States	
IPTU	100% of IR levied at source, on income paid by municipalities	50% of IPVA of vehicles licensed in the municipality	
ISS	50% of ITR on properties located in the municipality	25% of ICMS	Agreements, adjustments, and similar, signed with the Union or with states
ITBI	70% of IOF on gold	25% of the 10% of IPI transferred to the states by the Union; 25% of the 29% of CIDE transferred to the states by the Union.	

Note. IR (income tax); ITR (rural real estate tax); FPM (municipal share fund); IOF (tax on financial transactions); IPI (tax on manufactured products); IPVA (tax on vehicles); ICMS (tax on the circulation of goods and on services of interstate and intermunicipal transportation and communication); CIDE (contribution for intervention in the economic domain).

Source: adapted from Suzart et al. (2018).

Although Brazilian municipalities are autonomous and have achieved an increase in their revenue, available to these federation members, the reality is that most of them, created since the 1988 Federal Constitution, have populations between 5,000 and 10,000 inhabitants. (Leite, 2014). But they lack consistent economic activities, which could provide conditions for fiscal and tax self-sufficiency, in addition to low technical competence in municipal management.

To be able to afford the whole administrative and personnel structure required by the public entity, municipalities must strive to get stable and sufficient resources (Sousa, Leite & Pinhanez, 2019). However, a survey published by the National Confederation of Municipalities (CNM) showed that more than four thousand Brazilian municipalities, representing 82% of the total, were unable to obtain 10% of own revenue in 2018 (Moreira, 2020). Suzart et al. (2018) also found similar results – in most Brazilian municipalities, own receipts are less than 10.5% of the total revenue.

In a survey of the accounts of 5,337 Brazilian municipalities in 2018, for building the Firjan Fiscal Management Index (IFGF), an analysis based on official data from Brazilian cities was carried out, using four indicators: autonomy, personnel expenses, liquidity, and investments. Data showed that there were problems with fiscal management, such as a low capacity to generate revenue for financing the City Council and the administrative structure of the city hall, as well as high budget rigidity, which hindered an efficient planning and reduced investments (Firjan, 2019).

Among the main findings of that study, 73.9% of the municipalities showed difficult or critical fiscal management. Another worrying factor is that 57.5% were in a critical situation regarding their autonomy. Of the total number of municipalities analyzed, 1,856 (34.8%) were unable to support themselves, i.e. they did not generate enough revenue to keep the administrative structure.

The financial autonomy of municipalities is a necessary condition for the local government to carry out its public policies and strengthen its status as a federative body, and not just comply with policies formulated and financed at state or federal level (Santos, 2009). From this perspective, it is important that local government finances continuously meet the demands for public spending and the changes that naturally arise in the community (Lima & Diniz, 2016).

When analyzing the fiscal performance of small Brazilian municipalities, considering the composition of revenues and expenses and intergovernmental transfers, Gerigk, Ribeiro and Lepchak (2019) found that they are totally dependent on transfers from the Federal Government and the states, with percentages that correspond approximately to 74% of their revenues. Therefore, these municipalities would need other own sources of revenue in order to achieve greater autonomy and independence for their financial management. However, from 2008 onwards, small municipalities have been able to manage a surplus through a stable behavior, when compared to previous years.

Gonçalvez and Caldas (2019) investigated the factors that determine the financial condition of municipalities, considering it a government's ability to comply with its obligations in the short and long term, in order to promote the continuous provision of public services to its citizens. The results showed that factors such as GDP variation, population, and fiscal management are determinants of municipal financial condition, considering socio-economic factors such as population and demographic density. Ritonga (2014) found similar results when studying local governments in Indonesia.

Clark (2015) tested the Financial Condition Index (FCI), proposed by Wang et al. (2007), on a sample of the 117 largest cities in Ohio (USA), and found associations between the index and three socioeconomic variables: population, employment, and wages. Sousa et al. (2019) investigated to what extent socioeconomic factors influence the financial condition of Brazilian municipalities. They found that factors such as illiteracy rate, the geographical region of location, and the proportion of poor residents affect the financial condition of municipalities.

Dantas et al. (2019) observed that the greater a municipality's financial dependence, the more likely it is to experience fiscal stress, as a result of deterioration of its financial condition. When analyzing efficiency in the allocation of public resources for primary education and its relationship with financial condition in Brazilian municipalities, Souza, Andrade and Silva (2015) concluded that although there are municipalities considered efficient in spending on basic education, they did not find a strong explanation for efficiency scores when using financial condition indicators.

In general, it is clear that the subject is relevant and has been discussed at international and national levels, but there are still gaps to be explored, like the factors that can help explain the financial condition of a local government. The discussion of the aforementioned studies is relevant for the development of the model of explanatory factors, which we address in the paper's methodology.

3 Methodological Procedures

3.1 Classification of the research, sample, and data collection

Regarding its objective, this research is classified as descriptive, as it describes the characteristics of a phenomenon through the relationship between variables (Raupp & Beuren, 2006). In terms of procedures, it is a documentary study, and concerning the problem approach, it is quantitative, since we used statistical techniques to collect and process data.

We selected for the sample all municipalities in Minas Gerais with an estimated population of up to 5,000 inhabitants in 2020, according to data from the Accounting and Fiscal Information System of Brazilian Public Sector (SICONFI), which comprised 229 municipalities. We chose the state of Minas Gerais because it has the largest number of municipalities, in addition to their regional diversity, which is close to the heterogeneity that exists in Brazil. The period defined for the study was from 2017 to 2020, because it coincided with the duration of the last municipal Multi-Annual Plan (PPA). Hence, the research sample would initially consist of 916 observations (229 municipalities in 4 years).

We removed 221 observations from the sample, because they had missing or incomplete data, which prevented their application to the model proposed in the study. Therefore, the final sample had 695 observations, comprising 203 municipalities in 2020, 170 in 2019, 160 in 2018, and 162 in 2017.

To meet the study's goal, we collected data from the Budget Balance, Balance Sheet, Summary Report of Budget Execution (RREO), and Fiscal Management Report (RGF) of the municipalities in the sample, for the selected four years. Data was collected using reports generated by SICONFI, in August 2021.

3.2 Financial Condition Indicators and Brown's model (1993)

To measure the financial condition of small municipalities in Minas Gerais, which was the dependent variable in the adopted econometric model, we chose to use Brown's (1993) model, also known as the "ten-point test of financial condition". According to Lima and Diniz (2016), this model is appropriate for assessing the short-term financial condition of small municipalities. For Donato (2020), it is a model of simple operationalization, made up of indicators available in municipalities' financial statements, and involving the main explanatory factors of financial condition: income, expenditures, debt structure, and operating position. Brown's (1993) model uses 10 indicators, as shown in Table 2.

Table 2
Brown's model indicators (1993)

Indicator	Formula	Expected Result
Income per capita	$\frac{\text{Total Revenue}}{\text{Population}}$	The higher, the better
Representation of Own Revenue	$\frac{\text{Current Revenue} - \text{Current Transfer}}{\text{Total Revenue}}$	The higher, the better
Share of Transfer Revenues	$\frac{\text{Current Transfers}}{\text{Total Revenue}}$	The lower, the better
Share of Operating Expenses	$\frac{\text{Current Expense}}{\text{Total Expense}}$	The lower, the better
Coverage of Expenses	$\frac{\text{Total Revenue}}{\text{Total Expense}}$	The higher, the better
Resources for Covering Drop in Revenue	$\frac{\text{Financial Surplus}}{\text{Total Revenue}}$	The higher, the better
Resources for Covering Short Term Obligations	$\frac{\text{Cash assets}}{\text{Current Obligations}}$	The higher, the better
Commitment of Current Revenue to Short-Term Obligations	$\frac{\text{Short term Obligations}}{\text{Net Current Revenue}}$	The lower, the better
Debt per capita	$\frac{\text{Consolidated Debt}}{\text{Population}}$	The lower, the better
Commitment of Current Revenue to Indebtedness	$\frac{\text{Consolidated Debt}}{\text{Net Current Revenue}}$	The lower, the better

Source: Lima & Diniz, 2016, p. 518.

After calculating the indicators shown in Table 2, we organized them according to their interpretation. Then, a quartile division was made for each indicator, as proposed by Brown's model (1993). Based on the organization into quartiles, the following score was established for each observation, in each of the model's ten indicators:

- Score -1 for quartile 1 indicators (below percentile 25);
- Score 0 for quartile 2 indicators (between percentiles 25 and 50);
- Score +1 for quartile 3 indicators (between percentiles 50 and 75); and
- Score +2 for quartile 4 indicators (above percentile 75).

The sum of the scores of the ten calculated indicators makes up the financial condition indicator used in this study as the dependent variable. The overall score of the model is set between -10 and +20, according to this calculation methodology. The higher the overall score, the better the financial condition of that municipality.

3.3 Research Variables and the Econometric Model

To meet the proposed objective, initially we did an analysis of the descriptive statistics of the study variables, to assess the behavior of these indicators over the chosen period. Hence, we could make a preliminary examination of the general situation of small municipalities in Minas Gerais, regarding cash solvency, budget solvency, and long-term solvency.

Next, we carried out a multiple regression with panel data, to check if the study variables could explain variations in the financial condition of small municipalities. According to Gujarati and Porter (2011), this procedure provides a higher level of information, greater efficiency in estimation, and less collinearity between the variables.

As previously mentioned, the model's dependent variable was financial condition, measured using Brown's (1993) model, appropriate for small municipalities. The higher the score in this model, the better the financial condition.

For the independent variables, we chose indicators that reflect three different types of solvency: budget, long-term, and cash. According to Donato (2020), most empirical studies on financial condition use variables for these dimensions. Table 3 shows the variables used in this study as explanatory factors of financial condition.

Table 3
Independent variables

Dimension	Variable	Indicator	Expected signal
Budget Solvency	Personnel expenses (GP)	$\frac{\text{Personnel expenses}}{\text{Current Expense}}$	-
	Share of Tax Revenue (PRT)	$\frac{\text{Tax Revenue}}{\text{Current Revenue}}$	+
Long-term Solvency	Degree of Indebtedness (GE)	$\frac{\text{Consolidated Gross Debt}}{\text{Net Current Revenue}}$	-
Cash Solvency	Accounts payable (RP)	$\frac{\text{Accounts payable}}{\text{Cash Availability}}$	-

Source: Research data.

Personnel Expenses: these represent a large part of public expenses, since a municipality's primary goal is to offer goods and services to society. However, very high levels of this type of expenditure can mean little margin for managing public spending, as it is a compulsory expense and can limit public investment (Lima & Diniz, 2016; Donato, 2020). Therefore, it is expected that the higher the share of personnel expenditure in total current expenditure, the worse the financial condition of the municipality.

Share of Tax Revenue: the potential for own revenue is an important factor of financial condition. According to Lira, Diniz, and Lima (2018), high dependence on intergovernmental transfers affects the sustainability of public entities negatively. Therefore, a municipality with a good capacity of revenue generation is likely to have a better financial condition.

Degree of Indebtedness: it is one of the most used variables in public finance studies. Intuitively, the higher this indicator, the worse the public body's financial condition tends to be, since a considerable part of its resources must be used to cover debt costs (Lima & Diniz, 2016).

Accounts payable: according to Donato (2020), this indicator is an inverted representation of immediate liquidity, as it relates financial liabilities (represented by accounts

payable) to financial assets (represented by available cash). The author also states that the higher this indicator, the worse the financial condition of the public entity.

Therefore, we arrived at the following econometric model:

$$CF_{it} = \alpha + \beta_1 GP_{it} + \beta_2 PRT_{it} + \beta_3 GE_{it} + \beta_4 RP_{it} + \varepsilon_{it} \quad (1)$$

To determine which panel data regression model would be most suitable, between pooled, fixed effects (EF), and random effects (EA), we carried out Chow, Breusch-Pagan LM, and Hausman tests, as indicated by Gujarati and Porter (2011), whose results are in Table 4.

Table 4

Result of the tests for determining the regression model

	Statistics	p-value
Chow	4.9458	> 0.0001
Breusch-Pagan LM	204.5500	> 0.0001
Hausman	49.7596	> 0.0001

Source: Research data.

The results of the model's determination tests indicate that the type of panel data regression best suited to the set of observations in this study was the one that controls fixed effects, since all the tests were significant at 1% level. Therefore, we used that model to identify the explanatory factors of financial condition for our data, using Gretl[®] software.

4 Results and Analysis

4.1 Descriptive statistics and correlation

As mentioned in the previous section, the first stage of the analysis consisted in examining the descriptive statistics of the explanatory variables, which address cash solvency, long-term solvency, and budget solvency. Table 5 shows the descriptive statistics calculated for the four years of the analysis.

Table 5

Descriptive statistics of the explanatory variables

Explanatory Variables	Descriptive Statistics	2020	2019	2018	2017
Personnel expenses (GP)	Mean	0.5559	0.5451	0.5487	0.5570
	Median	0.5574	0.5437	0.5493	0.5615
	Standard deviation	0.0509	0.0414	0.0522	0.0621
	Minimum	0.3883	0.4476	0.3482	0.0400
	Maximum	0.7495	0.6595	0.8904	0.7259
Share of Tax Revenue (PRT)	Mean	0.0398	0.0346	0.0328	0.0304
	Median	0.0265	0.0270	0.0265	0.0231
	Standard deviation	0.0639	0.0327	0.0308	0.0348
	Minimum	0.0000	0.0000	0.0068	0.0104

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	Maximum	0.8027	0.3056	0.3354	0.2891
	Mean	0.0952	0.0857	0.0988	0.0726
	Median	0.0409	0.0375	0.0559	0.0321
Degree of Indebtedness (GE)	Standard deviation	0.1695	0.1422	0.1286	0.1113
	Minimum	0.0000	-0.0003	0.0000	0.0000
	Maximum	1.3096	1.3206	0.6714	0.6225
	Mean	0.6443	0.4291	1.0076	0.6117
	Median	0.1813	0.2894	0.5957	0.4474
Accounts payable (RP)	Standard deviation	3.1899	0.5181	1.6062	0.5955
	Minimum	0.0000	0.0000	0.0000	0.0000
	Maximum	37.3754	4.5130	15.8782	3.9869

Source: *Research data.*

The variables "Personnel Expenses" and "Share of Tax Revenue" make up the "Budget Solvency" dimension. Of the three dimensions explored in this study, this is the only one that has more than one indicator, because when looking at budget solvency it is pertinent to study it from two fiscal perspectives: revenue and public spending.

When addressing personnel expenditure, we see little variation between the examined years. We also notice that for most of the municipalities in the sample, personnel expenses represent more than half of total current expenses, which was expected, given that the activity of local governments is the provision of services by municipal servants. The standard deviation shows that there was little dispersion of observations in the four years, indicating a certain homogeneity of the municipalities in the sample, regarding the representation of this variable.

Although there was a subtle increase in the mean share of tax revenue of the municipalities, we can see that, according to the mean and median of PRT in all four years of analysis, less than 5% of the total revenue of small municipalities in Minas Gerais is made up of tax revenue, which suggests difficulty of own revenue, thus affecting their financial condition negatively. Another point to observe is that the maximum values are around 30%, from 2017 to 2019. This result can be explained by Brazil's tax structure, which concentrates most of its revenue in the Union and the states, leaving a residual part for municipalities, which basically collect through IPTU, ITBI, and ISS (Leite, 2014; Suzart et al., 2018).

The small municipalities in Minas Gerais have, on average, little debt, no more than 10% of net current revenue, which is good for their financial condition, and with a stable scenario over the four years. However, data show great dispersion, increasing over the time horizon, indicating heterogeneity of the sample. Many municipalities in the sample (91 observations - 13.09%) do not have a consolidated debt. This is because they finance their capital expenses with the current surplus or through state and federal parliamentary amendments, without having to take out loans and funding.

Finally, when examining accounts payable, we can see that municipalities, in general, have financial liquidity to pay them. The median has been decreasing over the years, indicating an improvement in this indicator, and in 2020 more than half of the municipalities examined had less than 20% of accounts payable in relation to cash availability. This variable also showed great disparity between observations, especially in 2018 and 2020, when outliers were also observed, compared to the maximum values of this indicator in those years (15.87 in 2018 and 37.37 in 2020).

To strengthen the results and find initial signs of a relationship between the variables, we carried out a correlation analysis. Table 6 shows the Pearson correlation matrix.

Table 6
Correlation matrix of the variables

	Score	GP	RP	GE	PRT
Score	1				
GP	-0.0130	1			
RP	-0.2560*	0.0139	1		
GE	-0.2391*	0.0011	0.1624*	1	
PRT	0.1367*	0.0294	-0.0334	-0.0255	1

*significant at 1%

Source: Research data.

There is little correlation between the variables studied. We see that Accounts Payable and Degree of Indebtedness were significant at 1%, and behaved inversely proportional to Brown's model Score, indicating that these variables move in the opposite direction of financial condition. The variable Share of Tax Revenue, on the other hand, was directly proportional to Brown's model Score, and was also significant at 1%. This analysis indicates the effect of the independent variables with regard to the dependent variable, which will be further addressed in the next subsection.

4.2 Analysis of the regression model

The second analysis carried out was an examination of the regression with panel data, controlling for fixed effects. To do that, we tested the regression assumptions, shown in Table 7. Residual normality was tested by using the Chi-Square test (χ^2), residual homoscedasticity through the Wald test, and non-multicollinearity of the independent variables was tested using the Variance Inflation Factor (VIF).

Table 7
Regression Assumptions

Assumption	Statistics	p-value
Normality	3.3319	0.1890
Homoscedasticity	1.50E+32	> 0.0001
Multicollinearity		
Variable	VIF	
GP	1.001	
PRT	1.002	
GE	1.028	
RP	1.028	

Source: Research data.

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The model meets the assumption of normality at the 1% significance level, and there was no multicollinearity between the independent variables, since VIF was less than 5 in all cases. The model showed a problem of residual heteroscedasticity, and, to minimize it, we used the robust standard errors technique.

After confirming the assumptions, we carried out the multiple regression model with fixed effects, whose results are shown in Table 8.

Table 8

Results of the regression model

	Coef	T Statistics	p-value
Const	-2.2212	-1.0390	0.2999
GP	12.5274	3.1840	0.0017*
PRT	10.8979	1.1880	0.2362
GE	-4.6442	-3.1820	0.0017*
RP	-0.0222	-0.2632	0.7926
Model information			
	R ² -within	0.0426	
	F statistics	5.3279	
	p-value	0.0004*	
	DW	1.6427	

* significant at 1%.

Source: Research data.

Table 8 shows that the model is significant as a whole ($F = 5.3279$, $p\text{-value} = 0.0004$), and the combination of these independent variables is adequate to explain the variations in financial condition. The model's r^2 -within was 0.0426, and there was no residual autocorrelation, as the Durbin-Watson (DW) test was close to 2.

The variable Personnel Expenses (GP) was significant at 1% level, and showed a positive coefficient, in line with Lima and Diniz (2016) and Donato (2020), who mentioned the high percentage of these expenses as a measure of greater budget rigidity, which could cause a reduction in financial condition. Thus, we infer that as personnel spending grew, the financial condition of the small municipalities in Minas Gerais in the sample increased. This can be justified by the fact that municipalities, in general, have a high structure of personnel expenditure, given their social function, especially in small municipalities (as is the case of this study), where a large part of the budget is often committed to personnel expenses. This is confirmed by looking at the descriptive statistics, where, in the four years of analysis, the means and medians showed percentages above 50% of personnel costs, in relation to current expense. In other words, high GP is an inherent characteristic of the municipalities studied.

Another variable that proved significant at 1% level was the Degree of Indebtedness (GE), which had a negative coefficient, indicating that municipalities with lower indebtedness tend to have better financial condition, confirming the expected result. This finding is in line with Lima and Diniz (2016), who mention that the higher the ratio between consolidated debt and net current revenue, the greater the compromise of the public body's financial condition; with Lira et al. (2018), who found that the higher the indebtedness, the lower the resources

available for using in goods and services to society, thus affecting the financial condition; and with Donato (2020), for whom the increase in GE leads to an increase in states' fiscal stress.

The variable Share of Tax Revenue (PRT) showed a positive coefficient, and Accounts Payable (RP), a negative coefficient. However, both variables were not significant in the model, which could mean that they do not help estimating the financial condition of the small municipalities in the sample. Finally, Table 9 summarizes the results found in the regression, comparing them with the expected results.

Table 9
Summary of research results

Variable		Indicator	Expected Result	Observed Result
Personnel Expenses (GP)		$\frac{\text{Personnel Expenses}}{\text{Current Expense}}$	-	+
Share of Tax Revenue (PRT)		$\frac{\text{Tax Revenue}}{\text{Current Revenue}}$	+	Not significant
Degree of Indebtedness (GE)		$\frac{\text{DConsolidated Gross Debt}}{\text{Net Current Revenue}}$	-	-
Accounts Payable (RP)		$\frac{\text{Accounts Payable}}{\text{Cash Availability}}$	-	Not significant

Source: Research data.

In general, the model proved appropriate for explaining financial condition, although it showed low predictive power. Only GP and GE variables were significant, at 1% level, for explaining the variations in the financial condition of small municipalities in Minas Gerais, with GP having a positive impact and GE a negative impact on the dependent variable.

5 Final Remarks

The purpose of this study was to identify the factors that explain the financial condition of small municipalities. To this end, we chose municipalities in the state of Minas Gerais with an estimated population of up to 5,000 inhabitants in 2020. In order to achieve the proposed objective, we selected all municipalities that met this criterion, totaling 229, from 2017 to 2020. After the necessary exclusions, the total number was 695 observations.

The results indicate that municipalities have low tax revenue generation, compared to total revenue, a reflection of Brazilian fiscal federalism, which concentrates most of tax collection in the Union and the States. The low level of indebtedness and the high share of personnel expenses in current expenditure structure are also characteristics of small municipalities in Minas Gerais, according to our findings.

Considering the three dimensions of solvency studied, we noticed that, in terms of long-term solvency (general indebtedness) and cash solvency (accounts payable), the municipalities in the sample show a good performance, according to descriptive statistics. However, when we observe the two variables chosen to represent budget solvency (share of tax revenue and personnel expenses), there are signs of problems, such as little capacity to generate own revenue and high commitment of current expenditure to personnel expenses.

Analyzing if these solvency variables are explanatory factors of financial condition, measured by Brown's model (1993), only personnel expenditure and general indebtedness were significant. General indebtedness showed a negative relationship with financial condition, indicating that less indebted small municipalities tend to have a better financial condition, already mentioned in the literature (Lima & Diniz, 2016; Lira et al., 2018).

Personnel expenditure, on the other hand, showed a positive coefficient, indicating that the higher these expenses, the better the financial condition, a result that was not expected. However, looking at the descriptive statistics, which shows high means and medians for personnel costs, with a low standard deviation, and considering that small municipalities are, in brief, providers of public services, thus requiring municipal servants, we can infer that high percentages of personnel costs are present in most municipalities studied, including those with a good financial condition.

In general, it is important to understand the financial condition of small municipalities and the factors that reflect this condition, especially in the current context, with discussions on the possibilities of reorganizing municipalities, including the extinction of some, as proposed by PEC 188/2019. We should keep in mind that financial condition goes beyond cash or budget solvency, and is also linked to the public entity's ability to meet society's demands for public goods and services.

As a limitation, this study only examined small municipalities in Minas Gerais, and the sample was chosen by convenience, based on data accessibility and availability; hence, the results cannot be generalized to all municipalities in the country.

This research contributes to the discussion and proposition of predictive models for the financial condition of public entities, which still lack more attention, especially in the national literature. For future research, we suggest analyzing other economic, financial, and budgetary factors that could be considered as explanatory factors of financial condition, besides examining other Brazilian municipalities, to check if the behavior found in this study is present in other regional realities.

References

- Araújo, R. A. M., Leite, K. K. M., & Leite, P. A. M., Filho. (2019). Influência da condição financeira nas subvenções governamentais dos estados brasileiros em cenário de crise econômica. *Enfoque: Reflexão Contábil*, 38(3), 1-18.
<https://doi.org/doi:10.4025/enfoque.v38i3.43027>
- Araújo, R. J. R., Souza, D. C. F., Diniz, J. A., Rêgo, C. J. F. N. & Lira, A. R. (2023). Medidas objetivas e subjetivas de condição financeira governamental: os gestores públicos municipais conhecem sua condição financeira? *Enfoque: Reflexão Contábil*, 42(1), 154-172.
<https://doi.org/10.4025/enfoque.v42i1.57075>
- Bahl, R. (1982). The Fiscal Health of State and Local Governments: 1982 and Beyond. *Public Budgeting & Finance*, 2(4), 5–22.
<https://doi.org/10.1111/1540-5850.00576>
- Brasil. (2019). *PEC 188/2019—Senado Federal*.
<https://www25.senado.leg.br/web/atividade/materias/-/materia/139704>
- Brown, K. W. (1993). The 10-point test of financial condition: Toward an easy-to-use assessment tool for smaller cities. *Government Finance Review*, 9(6), 21–26.
<https://localgovernment.extension.wisc.edu/files/2016/04/kenneth-brown-Ten-point-test.pdf>
- Caetano, C. C. R., Ávila, L. A. C. D., & Tavares, M. (2017). A relação entre as transferências governamentais, a arrecadação tributária própria e o índice de educação dos municípios do estado de Minas Gerais. *Revista de Administração Pública*, 51, 897-916.
<https://doi.org/10.1590/0034-7612174433>
- Carvalho, V. D. B. (2020). Os Municípios no Federalismo Brasileiro. *Revista de Teorias da Democracia e Direitos Políticos*, 6(1), 130–145.
<https://doi.org/10.26668/IndexLawJournals/2525-9660/2020.v6i1.6688>
- Clark, B. Y. (2015). Evaluating the Validity and Reliability of the Financial Condition Index for Local Governments. *Public Budgeting & Finance*, 35(2), 66–88.
<https://doi.org/10.1111/pbaf.12063>
- CNM (2020). *Parecer Jurídico sobre a proposta de extinção de municípios*. Confederação Nacional de Municípios.
<https://www.cnm.org.br/biblioteca/exibe/14298>

Dantas, A. F., Jr., Diniz, J. A., & Lima, C. de L. (2019). A Influência do Federalismo Fiscal sobre o Estresse Fiscal dos Municípios Brasileiros. *Advances in Scientific and Applied Accounting*, 12(3), 062–078.

<https://doi.org/10.14392/ASAA.2019120304>

Donato, I. T. S. (2020). *Fatores financeiros determinantes do stress fiscal dos estados brasileiros*. Dissertação de Mestrado em Ciências Contábeis, Programa de Pós-graduação em Ciências Contábeis Universidade Federal do Rio Grande do Norte, Rio Grande do Norte, Brasil.

<https://repositorio.ufrn.br/handle/123456789/32164>

Firjan. (2019). *IFGf—Índice Firjan de Gestão Fiscal*. Firjan.

<https://www.firjan.com.br/>

Galvarro, Q. S., Salinas, M. P., Braga, M. J., Ferreira, M. A. M., & Ramos, S. F. O. (2009). Disparidades regionais na capacidade de arrecadação dos municípios do estado de Minas Gerais. *Revista de Economia e Administração*, 8(1).

Gerigk, W., Ribeiro, F., & Lepchak, A. (2019). Desempenho fiscal dos pequenos municípios brasileiros. *Revista Contabilidade e Controladoria*, 11(1), 85–103.

<http://dx.doi.org/10.5380/rcc.v11i1.63014>

Gonçalves, M. C., & Caldas, O. V. (2019). Condição Financeira dos Municípios Brasileiros e Fatores Determinantes. *Anais do Congresso ANPCONT*, XIII, 1–15.

https://anpcont.org.br/pdf/2019_CPT32.pdf

Gujarati, D. N., & Porter, D. C. (2011). *Econometria básica*. ed. Porto Alegre: AMGH.

Hendrick, R. M. (2011). *Managing the Fiscal Metropolis: The Financial Policies, Practices, and Health of Suburban Municipalities*. Georgetown University Press.

Kang, H., & Chen, G. (2022). Can better financial conditions lead to more fiscal transparency? Evidence from municipalities in California. *Local Government Studies*, 48(5), 821-841.

<https://doi.org/10.1080/03003930.2021.1919634>

Kloha, P., Weissert, C. S., & Kleine, R. (2005). Developing and Testing a Composite Model to Predict Local Fiscal Distress. *Public Administration Review*, 65(3), 313–323.
<https://doi.org/10.1111/j.1540-6210.2005.00456.x>

Leite, F. L. B. (2014). *Fusão de municípios: Impactos econômicos e políticos da diminuição do número de municípios em Minas Gerais* Dissertação de mestrado em Administração Pública, Universidade do Minho, Braga, Portugal.
<http://repositorium.sdum.uminho.pt/>

Lima, S. C. de, & Diniz, J. A. (2016). *Contabilidade pública: Análise financeira governamental*. (1ª ed.) São Paulo, SP: Grupo Gen - Atlas.
<https://public.ebookcentral.proquest.com/choice/publicfullrecord.aspx?p=4883291>

Lira, A. R. de, Diniz, J. A., & Lima, S. C. de. (2018). Fatores Determinantes do Nível de Recursos Internos nos Estados Brasileiros. *Anais do XII Congresso ANPCONT*, 18.
http://anpcont.org.br/pdf/2018_CPT382.pdf

Moreira, R. S. (2020). A Incorporação de Municípios no Federalismo Brasileiro: A Proposta de um Novo Pacto Federativo. *Anais do 10o Seminário de Administração Pública do IDP Instituto Brasileiro de Ensino, Desenvolvimento e Pesquisa*, 15.
<https://portalgt.idp.edu.br/seminarioadmpublica/article/view/346>

Prior, D., Castellanos, I., Pérez-López, G., & Zafra, J. (2019). Cost efficiency and financial situation of local governments in the Canary Isles during the recession. *Revista de Contabilidad*, 22, 129–144.
<https://doi.org/10.6018/rcsar.376091>

Ramsey, T. K. (2013). *Measuring and evaluating the financial condition of local government*. Tese de Doutorado, MPPA, Public Policy and Administration, California State University, California, Estados Unidos. Recuperado de <http://dspace.calstate.edu/handle/10211.9/2187>

Raup, F. M., & Beuren, I. M. (2006). *Como Elaborar Trabalhos Monográficos em Contabilidade. Teoria e Prática* (3ª edição). São Paulo, SP: Atlas.

Ritonga, I. T. (2014). *Modelling local government financial conditions in Indonesia*. Tese de Doutorado, Victoria University, Melbourne, Australia. Recuperado de https://vuir.vu.edu.au/25831/1/RITONGA%20Irwan%20Taufiq-thesis_nosignature.pdf

Rivenbark, W. C., Roenigk, D. J., & Allison, G. S. (2010). Conceptualizing Financial Condition In Local Government. *Journal of Public Budgeting, Accounting & Financial Management*, 22(2), 149–177.
<https://doi.org/10.1108/JPBAFM-22-02-2010-B001>

Santos, A. M. S. P. (2009). Desenvolvimento Local e Autonomia Financeira dos Municípios. *Revista de Economia Mackenzie*, 7(2), 112–137.
<https://www.proquest.com/openview/d9f7d0e86c4db0f74b4f6da43dbcde29/1?pq-origsite=gscholar&cbl=3962595>

Sousa, K. M. D., Leite Filho, P. A. M., & Pinhanez, M. D. M. S. F. (2019). Condição financeira e os fatores socioeconômicos dos municípios brasileiros. *Pensar Contábil*, 21(75). Recuperado de <http://www.atena.org.br/revista/ojs-2.2.3-06/index.php/pensarcontabil/article/viewFile/3495/2650>

Souza, F., Andrade, A., & Silva, M. C. D. (2015). Eficiência na Alocação de Recursos Públicos destinados ao Ensino Fundamental: um Estudo da sua relação com a condição financeira de Municípios Brasileiros. *ConTexto, Porto Alegre*, 15(31), 81-99. Recuperado de <https://ssrn.com/abstract=2828833>

Suzart, J. A. da S., Zuccolotto, R., & Rocha, D. G. da. (2018). Federalismo Fiscal e as Transferências Intergovernamentais: Um Estudo Exploratório com os Municípios Brasileiros. *Advances in Scientific and Applied Accounting*, 127–145.
<http://dx.doi.org/10.14392/asaa.2018110107>

Wang, X., Dennis, L., & Tu, Y. S. (Jeff). (2007). Measuring Financial Condition: A Study of U.S. States. *Public Budgeting & Finance*, 27(2), 1–21.
<https://doi.org/10.1111/j.1540-5850.2007.00872.x>

Zafra-Gómez, J. L., López-Hernández, A. M., & Hernández-Bastida, A. (2009). Evaluating financial performance in local government: maximizing the benchmarking value. *International Review of Administrative Sciences*, 75(1), 151–167.
<https://doi.org/10.1177/0020852308099510>