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Application of Governance Principles in Public Sector Contexts: An Analysis of Accountability for Public Works Contracts in the State of Minas Gerais

ABSTRACT

Objective: To examine the accountability practices for public works contracts in the state of Minas Gerais, focusing on the application of three governance principles in the public sector: openness, integrity, and accountability.

Method: This study adopts a descriptive and explanatory approach, employing quantitative methods. The research methodology includes bibliographic and documentary analysis. The sample consists of 96 public works contracts under the jurisdiction of the Department of Buildings and Highways (DEER/MG).

Originality/Relevance: The study underscores the critical need to enhance data availability on the Court of Auditors' website to ensure transparency and improve public access to information.

Results: The findings indicate that compliance with the three governance principles was unsatisfactory. Specifically, the analysis of public works contract accountability in Minas Gerais, through the lens of the three principles of governance in the public sector (openness, integrity, accountability), revealed that the lack of contract data on the TCE/MG website compromised all three principles.

Theoretical contributions: The research highlights that governance in public procurement should be institutionalized rather than fragmented, emphasizing the necessity for a cohesive framework in public sector governance.

Social/Management contributions: The study provides actionable insights to improve the management of public works contracts by aligning them with corporate governance principles, thereby mitigating risks associated with the mismanagement of public funds. Moreover, it advocates for the promotion of the best practices in the management of public works contracts.

Keywords: Contracts, Public works, Governance.

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1 INTRODUCTION

Accurately predicting all transactional components and potential events associated with a public contract is inherently challenging due to the bounded rationality of public administration. Qualitative variables are particularly difficult to define within contracts, making them more vulnerable to unforeseen events during their execution. This creates significant risks when delegating governmental activities that cannot be fully articulated contractually (Hart, Shleifer & Vishny, 1997; Bloomfield et al., 2019).

The core principle guiding public administration and its contracts for public works is centered on maximizing benefits for citizens, as improving public services remains the primary goal of public managers (Beuve & Saussier, 2021). This necessitates a focus on enhancing the efficiency and effectiveness of public works and their corresponding contracts (Beuve & Saussier, 2021).

The Federal Court of Auditors (TCU) defines public work as any construction, renovation, manufacturing, restoration, or expansion of a public asset. Such works can be executed directly by the public administration using its own resources or indirectly through third-party contractors selected via a bidding process. Regardless of the contracting regime, adherence to fundamental project steps is crucial for ensuring successful outcomes and maintaining the project triangle (cost, time, and scope). Achieving balance among these three constraints is pivotal to the overall quality of the project (Brasil, 2019).

Private entities must understand and navigate the bureaucratic demands of public administration (Cabral, 2017). Public managers, in turn, face the challenge of addressing institutional limitations, reconciling conflicting objectives, and fostering value in public-private partnerships (Mahoney et al., 2009). Conversely, further research should explore factors influencing service contract performance, the conditions under which specific strategies are most effective, and how the integration of diverse, complementary skills from public and

private agents can create value for society as a whole (Cabral, 2017). This is especially relevant as public procurement increasingly serves as a strategic tool for promoting sustainable and inclusive growth (Nemec et al., 2022).

Society increasingly demands that governance practices be applied not only to private companies but also to public administration (De Benedicto et al., 2008). In the 1990s, adopting tools from the private sector was seen as the final frontier of state reforms (Bresser-Pereira, 2010). One example of such a tool is contractualization, which involves defining desired outcomes and employing mechanisms to program, induce, and monitor their achievement (Ostrom, 2019). Recognizing that public works contracts can adopt rigorous and transparent management practices, the following research question is proposed: how is the management of public works contracts in Minas Gerais associated with the principles of corporate governance in the public sector (openness, integrity, and accountability)?

The basic principles of resource management were extensively discussed by Jensen and Meckling (1976) within the framework of Agency Theory, which conceptualizes society as a network of explicit and implicit contracts that establish functions and define the rights and obligations of all participating entities. Agency Theory identifies two main actors: the principal, whose returns depend on the actions of the agent, and the agent, who performs on behalf of the principal. The theory analyzes conflicts and costs arising from the separation of ownership and control, which lead to informational asymmetries, risks, and other issues inherent in the principal-agent relationship (Jensen & Meckling, 1976).

Governance in public and private organizations shares significant similarities, particularly regarding challenges associated with the separation of ownership and management, which frequently result in agency problems. Fundamentally, the principles guiding governance in both sectors—transparency, fairness, legal compliance, accountability, and ethical conduct—are largely identical (Matias-Pereira, 2018). According to Matias-Pereira (2010), governance

in public administration must explicitly define the roles, objectives, responsibilities, decision-making processes, and routines of all actors involved.

Therefore, the general objective of this research was to determine how the management of public works contracts in Minas Gerais aligns with the three principles of corporate governance within the public sector (openness, integrity, and accountability). Data was collected by examining the accountability records of public works contracts available on the website of the Minas Gerais State Court of Auditors (TCE/MG).

2 LITERATURE REVIEW

2.1 Agency Theory

Developed by Jensen and Meckling in 1976, Agency Theory examines the relationship between owners (principals) and managers (agents) within an organization. It aims to explain conflicts of interest that arise when agents, tasked with managing the principal's resources, make decisions that do not necessarily align with the goal of maximizing value for the owners. The theory also explores the costs and conflicts stemming from the separation of ownership and control—commonly referred to as the "agency problem"—and the informational asymmetries inherent in the principal-agent relationship.

At the core of Agency Theory is the contract between the principal and the agent, which establishes the delegation of authority from the principal to the agent to act on their behalf. However, due to information asymmetry and misaligned interests, agency costs emerge. These costs include monitoring expenses (incurred by the principal to oversee the agent's actions), bonding costs (incurred by the agent to demonstrate commitment to the principal's goals), and residual loss (the value lost when the agent's decisions deviate from the principal's interests) (Jensen & Meckling, 1976).

Informational asymmetry occurs when one party (typically the agent) possesses more information about the task or situation than the other (the principal). This imbalance can result in opportunistic behaviors by the agent, such as adverse selection (misrepresentation of abilities or intentions before the contract is signed) and moral hazard (risk-taking behavior after the contract is established, as the agent bears less risk) (Akerlof, 1970).

In the realm of public administration, Agency Theory is often applied to examine the relationships between public managers (agents) and citizens or elected officials (principals). Public procurement management is a particularly relevant domain for analyzing agency problems, given the inherent complexity and transactional nature of the processes involved (Matias-Pereira, 2018).

Corporate governance in the public sector seeks to uphold the principles of transparency, fairness, accountability, and legal compliance to address and mitigate agency problems. Transparency (openness) and integrity are fundamental to ensuring that public managers prioritize the interests of citizens (Matias-Pereira, 2010). Research by Beuve and Saussier (2021) and Bloomfield et al. (2019) underscores the critical role of governance mechanisms in enhancing accountability and improving the efficiency of public procurement processes.

2.2 Public administration

The nation-state's activities are centered on public management, which aims to uphold rights, deliver services, and allocate resources effectively. In turn, public management represents a complex governance framework involving diverse actors with often conflicting interests, spanning from local to national governments. A key challenge for contemporary governments is to pursue sustainable development, encompassing economic, social, political, and environmental dimensions, with the ultimate goal of ensuring societal well-being. This

necessitates redefining governance structures, management models, and accountability practices within public administration (Matias-Pereira, 2018).

From a systemic perspective, the state can be visualized as a fictitious entity on one side, society on the other, and public administration positioned between the two. Within this framework, the public administration acts as the intermediary, responsible for addressing society's needs, delivering high-quality public services, and ensuring transparency (Jiménez et al., 2022). This intermediary role emphasizes public administration as the bridge connecting the state with society (Wilson, 1887).

To fulfill its responsibilities effectively, public administration at federal, state, and municipal levels must be well-structured and operate with efficiency, effectiveness, and efficacy, ultimately serving the public interest. The budget serves as a vital tool for preventive control, authorizing tax collection, and regulating expenditures within predetermined limits, including those related to public works. According to Lima (2018), the budget's primary advantage lies in its ability to set clear objectives, enabling the coordination and oversight of activities to improve the quality and scope of services delivered to society both quantitatively and qualitatively.

Governments, alongside their ongoing efforts to improve public management performance by delivering more goods and services with fewer resources, must prioritize issues of ethics, morality, and transparency in public administration (accountability) (Matias-Pereira, 2018).

Certain characteristics of public management, particularly after the enactment of the 1988 Federal Constitution, the introduction of the Fiscal Responsibility Law, and the establishment of other anti-corruption regulations, are underpinned by three key dimensions: transparency and fiscal accountability, prevention and control, and punishment. Together, these measures aim to address the pervasive issue of impunity in the country (Dower, 2005).

The Fiscal Responsibility Law (Complementary Law No. 101/2000, LRF) represents a significant milestone in Brazilian public finance. Transparency, defined as the systematic production and dissemination of information, is one of the foundational pillars of this legislation. Beyond being a fundamental principle of good governance, transparency fosters closer ties between the state and society, enhancing citizens' access to information about public management. By mandating government officials to provide detailed accounts of their administration, the law subjects their performance to public scrutiny and evaluation (Culau & Fortis, 2006).

2.3 Public procurement

A contract is defined as a mutual agreement between two or more parties with the objective of acquiring, safeguarding, modifying, transferring, or extinguishing rights (Larousse, 1998). Similarly, it can be understood as a bilateral or multilateral legal transaction designed to establish, alter, or terminate rights and obligations of a proprietary nature.

Unlike private entities, which have significant flexibility in selecting and conducting processes related to purchasing, selling, contracting, and executing works and engineering services, public administration is bound by a series of legally regulated and pre-established procedures. These procedures are stipulated in Federal Law No. 8.666/93 (Brasil, 1993) and have been updated by the new Law No. 14.133/2021 (Brasil, 2021). The main distinctions between these two legal frameworks are summarized in Table 1.

This is an instrumental administrative procedure, serving as a necessary mechanism to achieve the goal of public procurement. According to Article 175 of the Constitution of the Federative Republic of Brazil, public services may be provided by the government, either "directly or under a concession or permission regime, and must always involve a bidding process for the provision of public services." A public service concession contract is the legal

instrument through which the Public Administration (grantor) delegates the execution of a public service to a third party (concessionaire) for a specified period (Brasil, 2019).

Table 1

Differences between Federal Law No. 8.666/93 and the new Law No. 14.133/2021.

	Law No. 8.666/1993	Law No. 14.133/2021
Bidding Modalities	Specifies modalities such as competition, price quotation, invitation to bid, contest, and auction.	Simplifies the wording into five modalities: competition, contest, auction, trading session, and competitive dialogue.
Judging Criteria	Includes lowest price, best technique, technique and price, and highest bid or offer.	Adds new criteria such as highest economic return and combinations of technique and price.
Planning and Innovation	Limited focus on planning and innovation.	Emphasizes planning, risk management, a risk allocation matrix, and innovation.
Phases of the Bidding Process	Internal phase (preparatory), external phase (publication of call for tenders), qualification, judgment of tenders, approval, and award.	Retains these phases but introduces a more robust preparatory phase and allows the reversal of qualification and judgment phases.
Administrative Contracts	Rules for contract management are less flexible.	Introduces flexible management rules, including technology and innovation tools for contract oversight.
Transparency and Control	Places less emphasis on transparency and social oversight.	Strengthens transparency with provisions for social oversight and the use of transparency portals and electronic tools.
Sustainability	Minimal references to sustainable practices.	Mandates the inclusion of environmental, social, and economic sustainability criteria.
Sanctions and Penalties	Limited scope for sanctions and penalties.	Expands the range of sanctions and defines broader penalties for administrative infractions.

Source: Federal Law No. 8.666/93 and Law No. 14.133/2021.

Public works contracts are critical tools for executing infrastructure projects. Proper planning of these contracts is essential to ensure efficiency, cost-effectiveness, and adherence to applicable regulations. The application of Governance, Risk, and Compliance (GRC) practices can mitigate common challenges, such as delays, budget overruns, and corruption (Lima & Oliveira, 2019).

Suppliers must be selected based on transparent and objective criteria outlined in the public notice. The chosen bidding modality—whether competitive bidding, price quotation,

invitation to bid, contest, auction, or trading session—must align with the value and complexity of the contract (Brasil, 1993). A thorough evaluation of the technical and financial capacities of bidders is crucial to ensuring successful project execution (Beuve & Saussier, 2021).

Public works contracts must undergo stringent supervision and management, regardless of their modality—be it a global price contract, unit price contract, task contract, or full contract. Public-private interactions in public procurement contracts present significant risks to public organizations and the services they deliver (Hart et al., 1997; Beuve et al., 2019). These risks arise when parties prioritize their own interests at the expense of the common good. To address these challenges, government organizations rely on public procurement regulations, which mandate a framework of formal contractual procedures and mechanisms to manage their relationships with private for-profit and non-profit entities (Hart et al., 1997; Plaček et al., 2019).

Risk management plays a critical role in identifying, assessing, and mitigating risks that could hinder an organization's ability to achieve its objectives. In the realm of public works contracts, effective risk management is essential for anticipating and minimizing issues such as delays, cost overruns, and compliance failures. Tools such as SWOT analyses and risk matrices are frequently employed to map and manage these risks (Hillson & Murray-Webster, 2017).

The research highlights that governance in public procurement should be institutionalized rather than fragmented, emphasizing the necessity for a cohesive framework in public sector governance. Public agents, whose discretionary decisions are bound by legislation and contractual clauses, may respond to issues in numerous ways—ranging from inaction to informal resolution or the application of sanctions of differing severity to private operators (Girth, 2014).

Moore (2002) highlights how public managers should consider and act to create public value, recognizing that public administration serves a social function, unlike the private sector,

which prioritizes profit generation. However, he underscores that public managers can and should leverage management tools to enhance performance and efficiency, particularly in terms of productivity, outcomes, and the equitable delivery of projects through fair contracts that benefit the population.

The clear and precise definition of project requirements represents a critical first step in planning public works contracts. This includes detailing technical specifications, deadlines, estimated budgets, and performance criteria. A poorly defined scope can result in ambiguities that heighten risks related to execution and compliance (Kerzner, 2017).

Law No. 8.666/93 not only establishes bidding as the standard procedure for public service contracting but also accounts for exceptional circumstances where conventional procurement methods are not feasible. Articles 24 and 25 of Law No. 8.666/93 authorize public administrators to bypass the bidding process under specific conditions: either through a waiver of the bidding requirement, provided the principles of morality and equality are upheld, or through an unenforceable bidding process when applicable (Brasil, 1993). Table 2 outlines the types of tenders permitted under the law.

Table 2

Bidding procedures according to Law No. 8.666/9

Competition	A bidding modality open to all interested parties.
Price Quotation	Restricted to parties who are duly registered or meet all the conditions required for registration.
Invitation to Bid	A process involving competition among at least three invited participants, registered or not, who are selected within the relevant field.
Contest	A competitive process open to all interested parties, aimed at selecting a technical, scientific, or artistic work.
Auction	A procedure for selling movable assets deemed unserviceable to the administration, legally seized or attached items, or immovable assets, awarded to the highest bidder, provided the bid equals or exceeds the appraised value.

Source: Adapted from Law No. 8.666/93.

In Article 23, Law No. 8.666/93 establishes the monetary thresholds that determine the appropriate bidding modality for engineering works and services. These value ranges are outlined in Table 3.

Table 3

Bidding modalities versus value thresholds for engineering services

Bidding Modality	Value Thresholds for Engineering Services (Until 18/06/18)	Value Thresholds for Engineering Services (After 18/06/18)
Invitation to Bid	Up to R$ 150.000,00	Up to R$ 330.000,00
Price Quotation	Up to R$ 1.500.000,00	Up to R$ 3.300.000,00
Competition	1,500,000.00 and above	3,300,000.00 and above

Source: Adapted from Law No. 8.666/93, Decree No. 9.412/18.

Effective contract management requires diligent monitoring of project progress, managing changes, and ensuring adherence to agreed terms. Governance tools, such as control dashboards and periodic audits, are essential for identifying and addressing deviations, thus promoting accountability and maintaining project integrity (PMI, 2017).

2.4 Corporate governance applied to the public sector

The concept of corporate governance has been studied for over 50 years (Da Silva, 2004). However, the term gained prominence in the 1980s. Prior to this period, research largely focused on the separation of ownership and control within firms, as well as on theories such as the theory of the firm, transaction costs, and the conflicts between majority and minority shareholders (Da Silva, 2004). Seminal works in this field include those by Berle and Means (1932) and Jensen and Meckling (1976).

Governance encompasses the processes and structures employed to direct and manage an organization. It involves the establishment of policies, procedures, and internal controls designed to ensure that the entity achieves its strategic and operational objectives in an ethical and transparent manner. In the public sector, governance plays a critical role in ensuring that resources are utilized effectively and that decisions prioritize the public interest (Matias-Pereira, 2018).

Governance is commonly defined by four main criteria: the protection of rights, the system of relationships, the exercise of power, and the normative framework. Its core values are disclosure, fairness, accountability, and compliance (IBGC, 2018). The implementation of these values is integral to fulfilling the social responsibility inherent in good governance. As Andrade and Rossetti (2004) emphasize, corporate governance is not merely a passing trend; its development is firmly rooted in sound principles, and its widespread adoption is both necessary and well-justified.

Compliance refers to the adherence to laws, regulations, norms, and both internal and external standards. In the public sector, compliance ensures that entities operate within established legal frameworks, mitigating risks of fraud, corruption, and other unlawful activities. Examples of regulations that public entities in Brazil must comply with include the Fiscal Responsibility Law and Law No. 8.666/93, which governs public procurement and administrative contracts (Brasil, 1993; Brasil, 2000).

One of the earliest and most influential definitions of corporate governance was introduced in the Cadbury Report (Fontes Filho & Picolin, 2008). Sir Adrian Cadbury, then Chairman of the UK Board of Directors' Financial Affairs Committee, led a committee tasked with developing a Code of Best Practice on Corporate Governance in 1991. The resulting Cadbury Report, published in December 1992, set foundational standards for corporate governance. According to Tinoco et al. (2011), corporate governance as a formal subject of study and discussion did not emerge until the 1990s.

In recent decades, the concept of governance has become integral to the vocabulary of public management. As noted by Peters and Pierre (1998), governance offers an alternative to traditional public administration paradigms. Corporate governance in the public sector involves managing public sector agencies according to principles of corporate governance derived from

the private sector. These principles are fully applicable within the broader state sector, particularly among non-public service agencies (Bhatta, 2003).

Organizational control, in its broadest sense, is a fundamental component of discussions surrounding corporate governance. According to Slomski (2005), the principles of transparency, fairness, accountability, and corporate responsibility must underpin the conduct of public affairs. These principles, also advocated by the Brazilian Institute of Corporate Governance, are integral to the implementation of corporate governance in public management. It is the responsibility of government leaders to spearhead this process and define the methods by which internal control mechanisms can be most effectively applied (de Carvalho Ferreira, 2016).

Indeed, the principles of public governance closely align with those of corporate governance. The key distinction lies in the nature of public governance: public managers are entrusted with the stewardship of assets owned by society. This stewardship requires an exceptionally high level of commitment, responsibility, transparency, ethics, and fairness in their management practices (Matias-Pereira, 2018).

The institution acknowledges that public administration involves complexities not present in the management of private companies. Drawing on the concepts of corporate governance outlined in the Cadbury Report and the principles for the public sector established in the Nolan Report, the PSC/IFAC (2001), through Study 13, identified the following principles of corporate governance within the public sector:

- Openness: Transparency ensures that stakeholders can trust the decision-making processes and actions of public sector entities, as well as the management of their activities and leadership.
- Integrity: Rooted in honesty, objectivity, and ambitious standards of decency and probity, integrity governs the management of public funds and organizational affairs. It relies

on the effectiveness of control structures and professional standards, which are reflected in decision-making processes and the quality of financial and performance reports.

- Accountability: This principle entails holding public entities and managers answerable for their actions, including the stewardship of public resources. Accountability requires a clear understanding of responsibilities and the delineation of roles within the organization's structure. It represents the obligation to provide a justified response to the assigned responsibilities.

According to the International Federation of Accountants (IFAC), the aforementioned principles and dimensions must be upheld irrespective of whether governments are elected or appointed, and regardless of whether they are composed of groups or individuals.

3 METHODOLOGY

This study is characterized as descriptive and explanatory in terms of objectives, quantitative in its approach, and bibliographical and documentary in its technical procedures. The data were analyzed objectively, with the treatment focusing on the physical and financial adherence of public works to establish an association for their improvement through the principles of corporate governance applied to the public sector. Additionally, the analysis included an assessment of resource availability in works contracts, categorized by region of the state and public service sector. Percentages related to bidding processes were also examined.

Physical adherence is defined as the percentage index of the actual execution time of the work compared to the originally proposed execution time in the contract. This includes contracts with and without time amendments. Financial adherence refers to the percentage of the total expenditure on completed works relative to the initial agreed contract cost. This encompasses contracts without cost amendments, those with negative amendments (reductions in the original contract amount), and contracts where the initial agreed amount has been modified.

3.1 Data collection

The documents analyzed in this study included public works contract records from the state of Minas Gerais, accessible via the State Court of Auditors (TCE-MG) website. The research sample comprised contracts registered in GeoObras, a system implemented by the Court of Auditors in January 2014 under Resolution No. 16/2013. This system monitors public works contracts and, through Normative Instruction No. 06/2013 (Brasil, 2013), registration in GeoObras became mandatory for state and municipal jurisdictions involved in bidding and contracting public works.

The sample consisted of secondary data, comprising 96 public works contracts under the jurisdiction of the Department of Buildings and Highways (DEER/MG). The dataset included contracts for works that were completed, halted, restarted, or newly initiated. The selection of DEER/MG contracts was motivated by their relevance, as they involve infrastructure projects serving diverse sectors of the state.

3.2 Data analysis

The data collected were analyzed through descriptive analysis of clusters formed based on input variables, including the year the contract was signed, the year the closing agreement was signed, the percentage of time extensions, the percentage of value adjustments, the value of the contracts compared to the amount paid, and the stage of the work (completed or halted).

It is important to note that the GeoObras database on halted works, available on the State Court of Auditors (TCE-MG) website, did not include sufficient data to analyze the percentage of the amount paid in relation to the percentage of work completed or the number of days actually worked. This limitation resulted from a lack of detailed records.

The results were presented in two parts. The first part involved a numerical analysis of the sample, followed by a descriptive analysis of variables segregated by the stage of construction (completed or halted). This analysis utilized measures of central tendency (mean

and median), variability (standard deviation, minimum, and maximum), and frequency (absolute and relative).

Next, the preliminary results of the cluster analysis were presented. This technique aims to divide the elements of the sample or population into groups, ensuring that elements within the same group are similar concerning the measured variables, while elements in different groups exhibit significant heterogeneity regarding these same characteristics (Mingoti, 2007).

The preliminary findings identified the number of groups, the distance metric, and the partitioning method to be applied in segregating completed and stalled contracts. Making these choices required consideration of a specific characteristic of the database analyzed in this study: the inclusion of both quantitative and qualitative variables in the cluster analysis.

- Quantitative variables: Percentage of term added, percentage of value added, and the value of contracts relative to the amount paid.
- Qualitative variables: The year the contract was signed, the year the works closure agreement was signed, and the stage of the works (used exclusively in cluster analyses that incorporated both types of works).

The year was treated as the sole qualitative indicator, with the aim of determining whether the initiation or completion of works correlates with election years. The numerical values for the "year" variable corresponded directly to those in the existing database. Regarding the stage of the works, a value of 1 was assigned to completed works and 2 to stalled works. To mitigate the impact of differing variances among the indicators used as inputs in the cluster analysis, all variables were standardized. Standardization was performed by subtracting the mean from the observed values for each variable and sample element and then dividing the result by the standard deviation (Mingoti, 2007).

To determine the most suitable distance metric and clustering method for each case, results from the Euclidean and Minkowski distances were compared with those from the simple

link, complete link, and average distance methods. For datasets containing outlier values, the Minkowski distance was selected due to its robustness and reduced sensitivity to outliers compared to the Euclidean distance (Mingoti, 2007).

Table 4

Steps for conducting cluster analysis

Stage	Description	Operationalization
1) Standardization of variables	This step converts the variables into Z-scores. While some variables share the same unit of measurement, standardization was performed to prevent differences in variance from influencing clustering results.	Standardization was performed by "subtracting the mean from the observed values for each variable and sample element and then dividing the result by the standard deviation" (Mingoti, 2007).
2) Selection of input variables	Input variables were chosen based on their variability and the extent of their contribution to contract segregation into clusters. Input variables included: % of time added % of value added Value of contracts relative to the amount paid The year the contract was signed The year the works closure document was signed Stage of the work (completed or halted, used only in analyses that combined completed and stalled works).	Variability was assessed using box plots and bar graphs.
3) Choosing the right number of clusters, distance, and method	The distance metric and clustering method were chosen to best reflect the similarity/dissimilarity of sample elements. The method selected aimed to approximate the natural partitioning of the data.	The number of clusters was determined using the majority rule approach described by Charrad et al. (2014). Euclidean and Minkowski distances were tested alongside simple linkage, complete linkage, and average linkage methods. The best method was selected based on the highest CH and Gamma coefficients and the lowest Cindex coefficient.
4) Descriptive analysis of the clusters formed	--	Measures of central tendency, variability, frequency, and graphical analyses were evaluated.

Source: Prepared by the authors.

The majority rule methodology described by Charrad et al. (2014), was employed to identify the optimal number of clusters. This approach involved calculating 26 different clustering validity indices and determining the ideal number of partitions suggested by each. Subsequently, the three partitions generated using the three methods and two distance metrics

mentioned above were compared based on their coefficients in the Calinski and Harabasz (CH), Cindex, and Gamma indices. These indices were chosen as they demonstrated superior performance in cluster analysis simulations conducted by Milligan and Cooper (1985).

After identifying the appropriate partitioning, the analysis advanced to the final stages of the result presentation. This included the application of measures of central tendency, variability, and detailed analysis.

Table 4 summarizes the steps undertaken for the cluster analysis. Data analysis was conducted using Minitab (version 17.1.0) and R (version 1.1.414) software.

4. RESULTS

The primary objective of this research was to determine how the management of public works contracts in Minas Gerais aligns with the principles of corporate governance within the public sector (openness, integrity, and accountability). A total of 96 contracts were identified in the TCE/MG registry, with a combined initial contract value of R$ 591,764,624.45 (Table 5, Figure 1).

Table 5

Detailed status of public works from DEER/MG

Status of Public Works	Number	Contract Value (R$)
Completed with final delivery	37	59,338,035.17
Completed with provisional delivery	3	9,059,269.57
Halted	13	71,148,409.72
Terminated before completion	21	208,921,151.90
Restarted	13	200,609,383.31
Newly started	9	42,688,374.78
Total	96	591,764,624.45

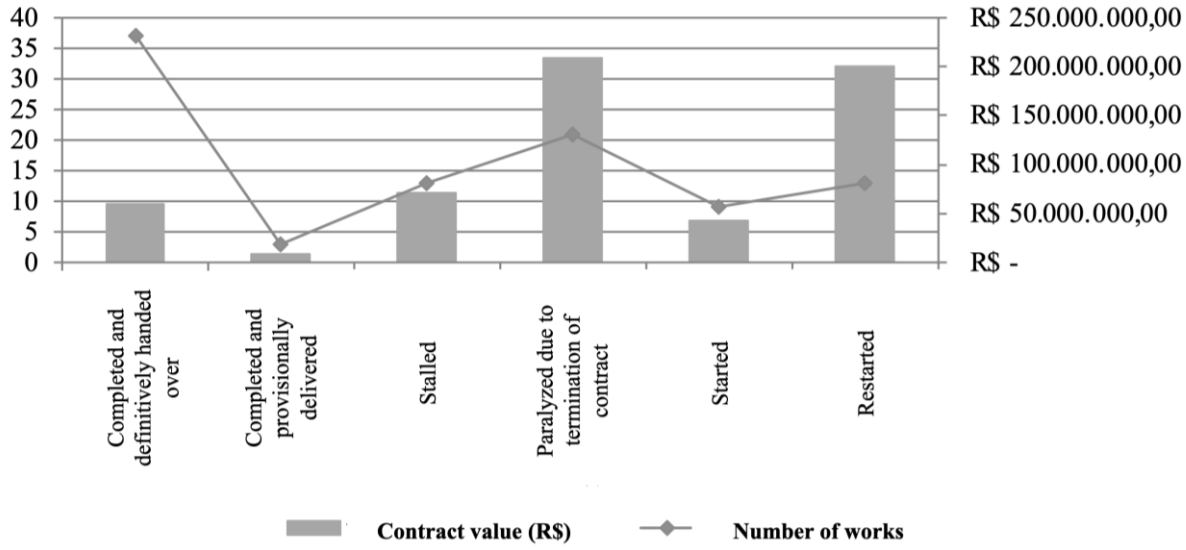
Source: Research Data

The analysis of the contract registry revealed the following: 38.54% of the works have been fully completed and handed over definitively, 3.13% of the works have been completed but are under a provisional handover term, 13.54% of the works are currently at a standstill,

and 21.88% of the works were terminated before the completion of services. Of the works previously halted, 13.54% have since been restarted, while 9.38% of the total contracts correspond to projects that have recently commenced.

Figure 1

Quantity and value of contracts by situation



Source: Research Data.

Regarding resource allocation, based on the initial contract values, contract terminations accounted for 35.30% of the resources, followed by restarted works, which utilized 33.90% of the financial resources. A total of 12.02% of the initial resources were allocated to works at a standstill. Contracts for newly initiated works represented 7.21% of the financial resources, while 10.03% were allocated to works completed with definitive delivery. Only 1.53% of the total contract values corresponded to works completed with provisional delivery.

The database for restarted contracts includes only two stalled contracts. Although the financial resources tied to halted works are significant, the original database lacks records for other restarted works.

The public sectors served by these works were distributed as follows: Education accounted for 37.50% of the contracts, concentrating 10.51% of the financial resources; Public

Safety represented 19.79% of the contracts and utilized 35.96% of the financial resources; the Infrastructure and Transportation sector comprised 16.67% of the contracts, accounting for 38.10% of the resources; the Health sector accounted for 12.50% of the contracts but represented only 2.38% of the resources; Culture comprised 5.21% of the contracts, utilizing 2.51% of the funds; the Central Administration sector represented 3.13% of the contracts, with just 0.30% of the resources allocated; and Urbanization and Housing accounted for 3.13% of the contracts, utilizing 10.06% of the resources; Finally, the Environment and Justice sectors each accounted for just 1% of the contracts and less than 1% of the financial resources allocated (see Table 6, Figure 2).

Table 6.

Breakdown of DEER/MG contracts by public sector

Public Sector Served	Number of Contracts	Contract Value (R$)
Education	36	62,165,069.88
Public Safety	19	212,825,511.40
Infrastructure and Transportation	16	225,468,706.80
Health	12	14,083,126.18
Culture	5	14,857,261.79
Central Administration	3	1,756,569.16
Urbanization and Housing	3	59,535,305.68
Environment	1	526,500.00
Justice	1	546,573.54
Total	96	591,764,624.45

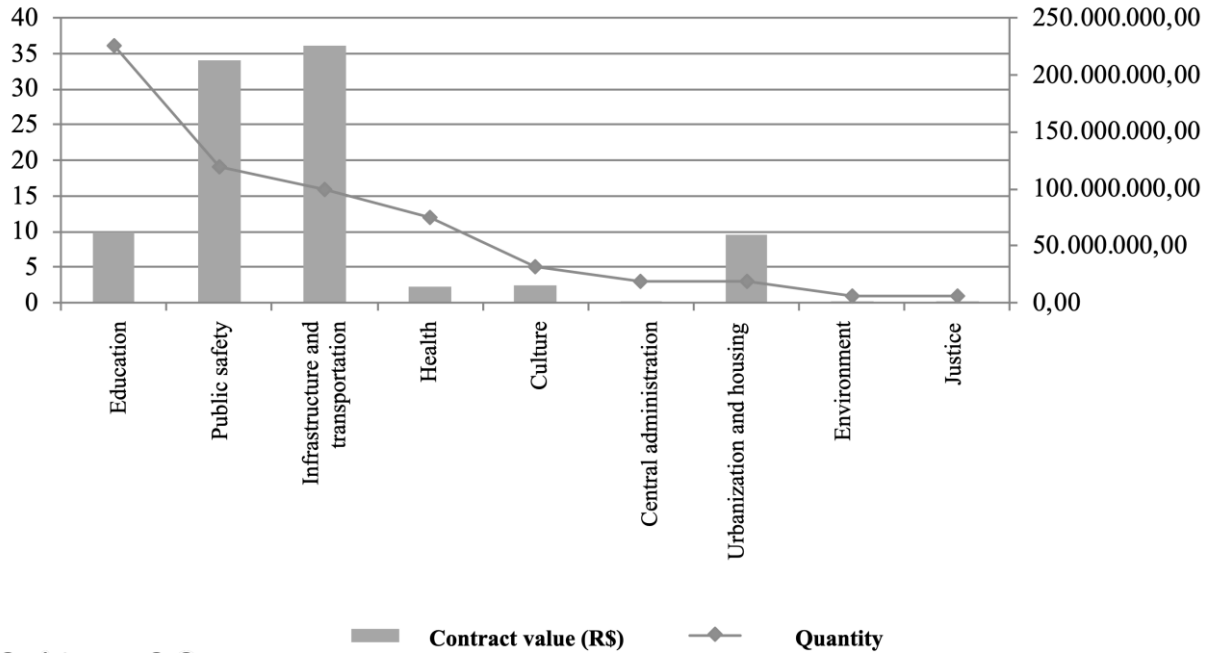
Source: Research Data

According to the population distribution by planning mesoregion (Table 7, Figure 3) available on the government website, the central region, which represents 32.04% of the state's population, received 54.26% of the financial resources allocated to public works. The Southern Minas region, the second most populous with 12.17% of the population, received 15.29% of the resources. The Mata region followed, receiving 6.60% of the financial resources to benefit 10.36% of the population. Meanwhile, the Northwest region received no resources, and the

remaining regions of Minas Gerais, comprising 35.01% of the population, accounted for 23.85% of the financial resources allocated to public works.

Figure 2

Number and value of DEER contracts registered



Source: Research Data

Table 7

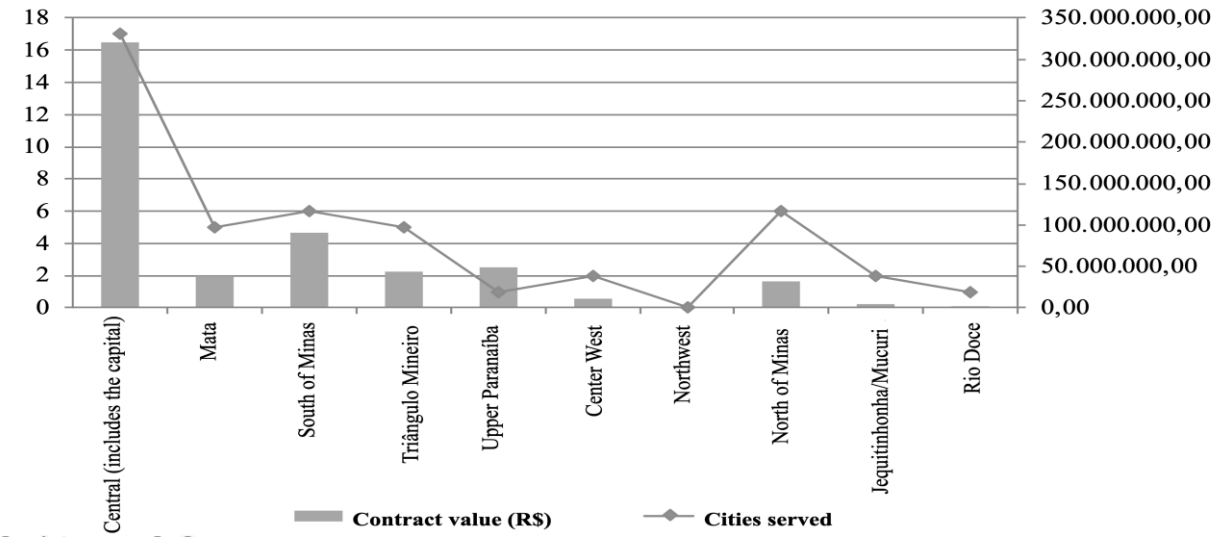
Breakdown of contracts by municipality and region

Region	Municipalities Served	Population by Region	Number of Contracts	Contract Value (R$)
Central (includes the capital)	17	6,278,865	53	321,073,722.04
Mata	5	2,030,856	8	39,048,550.69
South	6	2,384,851	9	90,508,678.90
Triângulo Mineiro	5	1,280,022	5	43,518,372.28
Alto Paranaíba	1	589,864	1	49,437,677.09
Central-West	2	987,765	3	10,495,813.05
Northwest	0	334,509	0	0
North	6	1,492,715	11	31,810,082.93
Jequitinhonha/Mucuri	2	977,779	4	4,876,027.05
Rio Doce	1	1,534,268	2	995,700.42
Total	45		96	591,764,624.45

Source: Research Data

Figure 3

Number and value of DEER contracts



Source: Research Data

Table 8 and Figure 4 present an analysis of the contracting modalities for public works contracts managed by the Department of Buildings and Highways of Minas Gerais (DEER/MG).

The Invitation to Bid modality accounted for 4.17% of the contracts registered on the Minas Gerais Court of Auditors' website, representing four projects, all with initial contract values below R$150,000.00 (one hundred and fifty thousand reais). Even with amendments to the contracts, none exceeded the upper limit for this modality.

Table 8

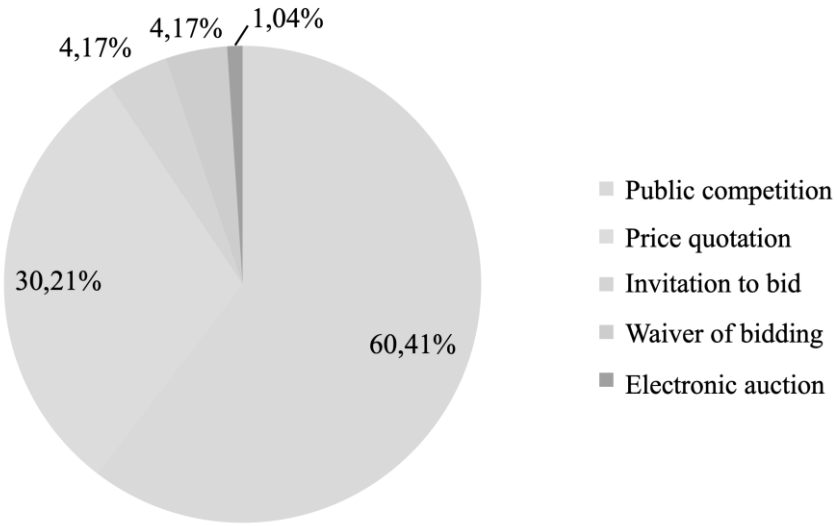
Breakdown of contracts by contracting modality

Contracting Modality	Number of Contracts	Contract Value (R$)
Public Competition	58	534,990,231.62
Price Quotation	29	14,910,181.91
Invitation to Bid	4	352,122.84
Waiver of Bidding	4	41,456,888.08
Electronic Auction	1	55,200.00
Total	96	591,764,624.45

Source: Research Data

Figure 4

Breakdown of DEER public works contracts by contracting modality



Source: Research Data

Among the public works contracts, 30.21% were executed in the form of a Price Quotation, all with initial contract values below R$1,500,000.00 (one million five hundred thousand reais), as stipulated by Law No. 8,666 of June 21, 1993, governing public administration bids and contracts. After considering amendments, only one project exceeded this legal threshold.

Of the registered contracts, 60.41% were executed under the Public Competition modality. The contract with the lowest value in this category was Contract No. 20012/2018-3, initially valued at R$119,208.22 (one hundred and nineteen thousand, two hundred and eight reais and twenty-two cents). The highest-valued contract was Contract No. 060/2014-1, totaling R$97,327,405.20 (ninety-seven million, three hundred and twenty-seven thousand, four hundred and five reais and twenty cents). All contracts with initial values exceeding R$1,500,000.00 (one million five hundred thousand reais) were executed through Public Competition.

Four contracts, representing 4.71% of the total, included documentation justifying the Waiver of Bidding based on Article 24, item XI of Law No. 8,666 of June 21, 1993, governing public administration bids and contracts.

Additionally, only one contract, comprising 1.04% of the total, was executed using the Electronic Auction method, as established by Law No. 10.520/2002. This law, applicable at the federal, state, and municipal levels under Article 37, item XXI of the Federal Constitution, introduces the Auction modality for the procurement of common goods and services and includes related provisions.

The survey revealed that only two of the 34 suspended contracts, with a combined initial value of R$10,334,035.89 (ten million, three hundred and thirty-four thousand, thirty-five reais and eighty-nine cents), were restarted under new contracts. The remaining suspended contracts, accounting for 94% of the total, remain in the same state. Of the financial resources allocated to these 34 halted contracts, 27.30% were disbursed despite the works being stalled. Although these contracts account for a sizable portion of the funds allocated to registered works (47.33%), the GeObras system does not provide a way to trace the original records of halted works.

4.1 Physical adherence

An analysis of physical adherence revealed that 22.5% of the contracts did not undergo term amendments, while the remaining 77.5% included term amendments. Among the contracts with term amendments, 38.71% experienced amendments extending the contractual term by more than 50% of the initially stipulated duration.

4.2 Financial adherence

Regarding the financial adherence of completed and delivered works, 30% of the contracts had no cost amendments; 12.5% had negative amendments, resulting in a reduction of the initial contract value; and 57.5% had positive amendments, increasing the initial contract

value. In terms of financial figures, the initial total value of completed and delivered contracts was R$68,397,304.74, which increased to R$76,630,211.68 after amendments.

The five contracts with negative amendments adhered to the suppression limit of 25% prescribed by Article 65 of Law No. 8,666 of June 21, 1993, governing public administration bids and contracts. Of the 23 contracts with positive amendments, five had increases ranging from 25% to 50% of the original contract value. However, as these contracts pertained to the refurbishment of buildings, they remained compliant with the aforementioned legislation. Lastly, 20 contracts had amendments of less than 25% of their original value.

However, Contract No. 001/2015-1 included a positive amendment amounting to 58% of the original contract value. The documentation available on the TCE/MG website contains a legal opinion justifying the approval of a final addendum on the grounds of maintaining the contractual balance. It is worth noting that this project has only a Provisional Delivery Certificate.

Finally, the financial adherence of the completed works was 114.77%, while the physical adherence reached 218.33%. Notably, adherence to deadlines demonstrated significantly deficient performance.

4.3 Cluster analysis of completed works

To evaluate the performance of different cluster validity methods, coefficients were calculated for each method based on the cluster validity indices. The results are summarized in Table 9.

The analysis concluded that the three clustering methods produced identical CH, Cindex, and Gamma coefficients, as well as the same number of optimal groups (2) and identical partitions (classification of contracts within clusters). The first cluster comprised 33 contracts, while the second cluster contained only one.

Table 9

Optimal number of clusters and cluster validity indices

Method	Optimal Number of Clusters *Majority Rule*	Cluster Validity Indices		
		CH	Cindex	Gamma
Single Linkage	2	6.988	0.442	0.985
Complete Linkage	2	6.988	0.442	0.985
Average Linkage	2	6.988	0.442	0.985

Source: Research Data

The primary distinction between the contract in the second cluster and those in the first was its performance on the "value of contracts in relation to the amount paid" variable. While this contract scored 52.23%, most contracts in the first cluster had values ranging from approximately 85.00% and 110.00%. The presence of only one outlier in Cluster 2 suggested that the partitioning was not optimal. This distortion was attributed to the extreme values in the input variables. As noted by Mingoti (2007), "clustering methods are sensitive to the presence of outliers."

For completed works, the cluster analysis was conducted using the following parameters:

- Input variables: Percentage of term added, percentage of value added, year of contract signing, and year of signing the works closure agreement.
- Removed variable: Value of contracts in relation to the amount paid.
- Method: Average linkage (average distance).
- Distance metric: Euclidean or Minkowski (both produced the same partition).
- Number of clusters: 3

4.4 Cluster analysis of halted works

The average distance method achieved the highest CH and Gamma coefficients and the lowest Cindex coefficient. Based on the majority rule criterion, the analysis resulted in the division of the data into 10 clusters (Tables 10 and 11).

Table 10

Optimal number of clusters and cluster validity indices by method (halted works)

Method	Optimal Number of Clusters Majority Rule	Minkowski Distance		
		CH	Cindex	Gamma
Single Linkage	2	18.907	0.460	0.958
Complete Linkage	2	18.907	0.460	0.958
Average Linkage	10	43.566	0.418	0.961

Source: Research Data.

Table 11

Descriptive analysis of quantitative variables by cluster (halted works)

Cluster	Measurements	% of value added	Value of Contracts/Value Paid	% of time added
1	Average (Mean)	0.73	19.49	37.09
	Median	0	7.51	0
	Standard deviation	2.06	26.09	80.71
	Minimum value	-2.01	0	0
	Maximum value	6.56	85.68	361.33
2	Average (Mean)	13.33	68.44	271.22
	Median	12.69	68.52	242.67
	Standard deviation	2	4.79	49.46
	Minimum value	11.72	63.61	242.67
	Maximum value	15.57	73.19	328.33

Source: Research Data.

Data analysis revealed that the percentage of time added was not an effective variable for distinguishing between the groups. Notably, Cluster 2 exhibited high variability, with percentages ranging from 54.17% to 245.56%.

For halted works, the cluster analysis was conducted using the following parameters:

- Input variables: Year the contract was signed and the value of the contracts in relation to the amount paid.
- Removed variables: Year the works closure agreement was signed, percentage of value added, and percentage of time added.
- Method: Complete linkage
- Distance metric: Euclidean or Minkowski (both produced the same partition).
- Number of clusters: 2;

5 DISCUSSION

The Access to Information Law No. 12.527 of 2011, grants citizens the right to access public information, applying to all three branches of the Federal Government, as well as to the States, the Federal District, and Municipalities, effective May 16, 2012. In this context, it was anticipated that the principles of corporate governance in the public sector (openness, integrity, and accountability) could be analyzed and correlated with data on public works contracts in Minas Gerais, as made publicly available.

Regarding openness, which ensures that stakeholders can trust the decision-making and actions of public sector entities, the availability of contract data on the TCE/MG website proved insufficient to meet satisfactory transparency standards. The analysis revealed a lack of clarity regarding the physical status of halted works, as the contracts available on the platform represented only 5% of the state's municipalities. This limited coverage may indicate that many contracts are not accessible through the website. Furthermore, discrepancies were observed between the physical and financial statuses of completed works, raising additional concerns about the reliability of the data.

As noted by Matias-Pereira (2010), transparency is a fundamental requirement for public managers to act in the best interests of citizens. The absence of adequate data undermines public trust in governance, exacerbating agency problems, where information asymmetry plays a critical role (Matias-Pereira, 2010).

Indeed, transparency is crucial for reducing information asymmetry between the principal (citizens) and the agent (public managers). The absence of accessible data limits the principal's ability to monitor the agent's actions, thereby exacerbating agency problems (Eisenhardt, 1989). Moreover, insufficient transparency undermines ethics in public administration, as citizens are left unable to evaluate the integrity of governmental actions (Kass, 1989).

Integrity is rooted in honesty, objectivity, and adherence to ambitious standards of decency and probity in the management of public funds and organizational affairs. It relies on the effectiveness of control structures and professional standards, which are reflected in decision-making processes and the quality of financial and performance reports.

Based on the analysis of the available data, although only one contract exceeded the bidding limits (with judicial approval), the absence of comprehensive information to ensure that all construction project contracts across the state are registered on the website compromises the integrity principle. This lack of data diminishes public confidence in the management of public works and raises concerns about the robustness of control mechanisms.

Integrity relies on effective control structures, adherence to professional standards, access to accurate information for monitoring agents' actions (Kivistö, 2008), and the implementation of clear, well-managed contracts to mitigate agency problems (Hart et al., 1997). The absence of reliable data undermines the ability to perform monitoring and control functions, which are essential to ensuring integrity in principal-agent relationships.

For agents to act in the interests of principals, integrity is paramount. The lack of clear and detailed information regarding contracts significantly impairs the ability to evaluate the integrity of public managers (Lane, 2020).

Finally, accountability—the process by which public entities and managers are held responsible for their actions, including their management of public resources—requires a transparent framework. Accountability requires a clear understanding of responsibilities and the delineation of roles within the organization's structure.

The website provides substantial information on contracts in a clear and accessible manner, except for data regarding the status of halted works. However, it lacks critical information on the total financial resources allocated for the year, which would allow for a comparison with the amount of work carried out and ensure that all completed, halted, or

ongoing projects in the state are publicly disclosed. Consequently, the available data does not adequately support accountability.

Jensen and Meckling (1976) emphasize that accountability requires a clear understanding of the responsibilities of all parties and the explicit definition of roles within the organizational structure (Jensen & Meckling, 1976). The absence of complete information inhibits citizens from holding public managers accountable, thereby exacerbating agency problems (Muhlberger & PytlikZillig, 2016). Similarly, accountability is vital to ensuring that agents are held responsible for their actions. However, the lack of comprehensive data continues to impede this process, further intensifying agency issues (Mengiste, 2022).

The findings suggest that the management of public works contracts in Minas Gerais has not effectively adhered to the principles of corporate governance in the public sector. Deficiencies in transparency, questionable integrity, and limited accountability underscore the urgent need for significant improvements. Agency theory provides a valuable theoretical framework for analyzing and addressing these issues, highlighting the importance of complete and accessible information to reduce informational asymmetries and align the interests of public managers with those of citizens.

6 CONCLUSIONS

An analysis of the data from contracts registered on the TCE/MG website provided insights into their performance, revealing that over 50% of the contracts underwent financial amendments, accounting for 12% of the total funds allocated to the completed works. Additionally, the initial term of the works was altered in 77.5% of the contracts, with more than 50% of the original term extended in 38.71% of them.

Given the lack of physical and financial adherence, it can be concluded that the performance of the contracts was unsatisfactory. A study conducted directly at the Department

of Buildings and Highways (DEER/MG), utilizing physical data from the contracts rather than relying solely on the website, could refine these findings and allow for more precise evaluations of contract performance.

The research also grouped completed and halted contracts into clusters with minimal intra-group variance and maximum inter-group variance. However, the presence of discrepant values in the database complicated the formation of homogeneous groups. This challenge was less pronounced in the classification of completed contracts but significantly affected the clustering of halted contracts.

The findings from this stage of the study highlight the limitations in applying clustering techniques to the target population due to the high degree of data inconsistency. This result serves as a stimulus for researchers to explore more advanced and detailed analytical techniques for future studies.

As an institutional contribution, this study provides actionable insights to improve the management of public works contracts by aligning them with corporate governance principles, thereby mitigating risks associated with the mismanagement of public funds. The social contribution lies in promoting the adoption of good management practices for public works contracts, particularly in light of numerous reports in the national media highlighting issues of public resource mismanagement and the poor performance of such contracts. Additionally, the study assesses the effectiveness of the publicly available data on public works contracts in Minas Gerais.

Finally, it is anticipated that this article will inspire academics to pursue further research on this topic. From a social perspective, it is crucial to address the role of transparency in enhancing the accountability of contracts involving public resources. Institutionally, ongoing research like this can encourage greater adherence to corporate governance principles—openness, integrity, and accountability—in the public sector. This can be achieved by ensuring

that publicly available information is consistent with the criteria outlined in Law No. 14.133/2021**.** Consequently, there is an urgent need to improve the availability and quality of information on the allocation and use of public funds for construction projects.

REFERENCES

Akerlof, G. A. (1970). The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84(3), 488-500. https://doi.org/10.2307/1879431

Andrade, A., & Rossetti, J. P. (2004). *Governança corporativa: fundamentos, desenvolvimento e tendências*. São Paulo: Atlas.

Berle, A. A., & Means, G. C. (1932). *The modern corporation and private property*. Harcourt, Brace & World

Beuve, J., & Saussier, S. (2021). Renegotiations and Renewals of Public Contracts. *Review of Industrial Organization,* 59, 461-482. https://doi.org/10.1007/s11151-021-09819-w

Beuve, J., Moszoro, M. W., & Saussier, S. (2019). Political contestability and public contract rigidity: An analysis of procurement contracts. *Journal of Economics & Management Strategy*, 28(2), 316-335. https://doi.org/10.1111/jems.12268

Bhatta, G. (2003). Post-NPM Themes in Public Sector Governance. *State Services Commission Working Paper*,17(1-15).

Bloomfield, K., Williams, T., Bovis, C., & Merali, Y. (2019). Systemic risk in major public contracts**.** *International Journal of Forecasting*, 35(2), 667-676. https://doi.org/10.1016/j.ijforecast.2018.10.005

Brasil, Tribunal de Contas do Estado de Minas Gerais. Instrução normativa nº 03/2013. Dispõe sobre os procedimentos da tomada de contas especial no âmbito dos órgãos e entidades das Administrações Diretas e Indiretas, estaduais e municipais, e dá outras

providências. Disponível em: https://cge.mg.gov.br/phocadownload/tomada_contas/pdf/instruo%20normativa%20TCEMG.pdf

Brasil, Lei 8.666 de 21 jun, de 1993. Institui normas para licitações e contratos da Administração Pública e dá outras providências. <http://www.planalto.gov.br/ccivil_03/Leis/L8666cons.htm>. Acesso em: 15 jun 2019.

Brasil. (2000). Lei Complementar n.º 101 de 4 de maio de 2000. Estabelece normas de finanças públicas voltadas para a responsabilidade na gestão fiscal e dá outras providências. Disponível em: http://www.planalto.gov.br/ccivil_03/leis/lcp/lcp101.htm.

Brasil. (2021). Lei 14.133 de 1 de abril de 2021. Estabelece normas gerais de licitação e contratação para as Administrações Públicas diretas, autárquicas e fundacionais da União, dos Estados, do Distrito Federal e dos Municípios Lei de Licitações e Contratos Administrativos. Disponível em: https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2021/lei/l14133.htm.

Brasil, Tribunal de Contas da União. (2019). *Obras públicas: Recomendações básicas para a contratação e fiscalização de obras públicas.* TCU.

Bresser-Pereira, L. C. (2010). Democracia, estado social e reforma gerencial. *Revista de Administração de Empresas*, 50, 112-116. https://doi.org/10.1590/S0034-75902010000100009

Cabral, S. (2017). Reconciling conflicting policy objectives in public contracting: The enabling role of capabilities. *Journal of Management Studies*, 54(6), 823-853. https://doi.org/10.1111/joms.12269

Charrad, M., Ghazzali, N., Boiteau, V., & Niknafs, A. (2014). NbClust: an R package for determining the relevant number of clusters in a data set. *Journal of Statistical Software*, 61, 1-36. https://doi.org/10.18637/jss.v061.i06

Culau, A. A., & Fortis, M. F. D. A. (2006). Transparência e controle social na administração pública brasileira: avaliação das principais inovações introduzidas pela Lei de Responsabilidade Fiscal. In Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública (Vol. 11, pp. 7-10)..

Da Silva, A. L. C. (2004). Governança corporativa, valor, alavancagem e política de dividendos das empresas brasileiras. *Revista de Administração da Universidade de São Paulo*, 39(4).

De Benedicto, S. C., Rodrigues, A. C., & Abbud, E. L. (2008). Governança corporativa: uma análise da sua aplicabilidade no setor público. *Encontro Nacional de Engenharia de Produção*, 28.

de Carvalho Ferreira, G. J. B. (2016). Governança Corporativa aplicada ao Setor Público: O Controle Interno como um dos núcleos de implementação. *Revista Controle: Doutrinas e artigos*, 14(1), 39-73.

Dower, N. G. B. (1995). *Instituições de direito público e privado*. Nelpa.

Eisenhardt, K. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14, 57-74. https://doi.org/10.5465/amr.1989.4279003

Fontes Filho, J. R., & Picolin, L. M. (2008). Governança corporativa em empresas estatais: avanços, propostas e limitações. *Revista de Administração Pública*, 42, 1163-1188. https://doi.org/10.1590/S0034-76122008000600007

Girth, A. M. (2014). A closer look at contract accountability: Exploring the determinants of sanctions for unsatisfactory contract performance. *Journal of Public Administration Research and Theory*, 24(2), 317-348. https://doi.org/10.1093/jopart/mus033

Governo do Estado de Minas Gerais. Dados geográficos. Disponível em https://www.mg.gov.br. Acesso em: 10 de janeiro de 2020.

Hart, O., Shleifer, A., & Vishny, R. W. (1997). The proper scope of government: theory and an application to prisons. *The Quarterly Journal of Economics*, 112(4), 1127-1161. https://doi.org/10.1162/003355300555448

Hillson, D., & Murray-Webster, R. (2017). *Understanding and Managing Risk Attitude*. Gower Publishing, Ltd.

Hobbes, T. (2002). *Do cidadão* (R. J. Ribeiro, Trad.; 3ª ed.). Martins Fontes. (Obra original publicada em 1642).

IFAC. (2001). *Governance in the public sector: A governing body perspective (Study 13)*. International Federation of Accountants (IFAC), Public Sector Committee (PSC).

Instituto Brasileiro de Governança Corporativa. (2018). *Código das melhores práticas de governança corporativa* (5ª ed.). IBGC.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

Jiménez, A., Hanoteau, J., & Barkemeyer, R. (2022). E-procurement and firm corruption to secure public contracts: The moderating role of governance institutions and supranational support. *Journal of Business Research*, 149, 640-650.

Kass, H. D. (1989). Exploring agency as a basis for ethical theory in American public administration. *International Journal of Public Administration*, 12, 949-969. https://doi.org/10.1080/01900698908524661

Kerzner, H. (2017). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. John Wiley & Sons.

Kivistö, J. (2008). An assessment of agency theory as a framework for the government–university relationship. *Journal of Higher Education Policy and Management*, 30, 339-350. https://doi.org/10.1080/13600800802383018

Lane, J. (2020). The principal–agent approach and public administration. *Oxford Research Encyclopedia of Politics.*

Larousse, C. (1998). *Grande enciclopédia Larousse cultural*. São Paulo: Nova Cultural, 12, 2295.

Lima, D. D. (2018). *Orçamento, contabilidade e gestão no setor público*. São Paulo: Atlas.

Lima, R. S., & Oliveira, P. T. (2019). *Gestão de riscos em contratos públicos: uma abordagem integrada*. Revista Brasileira de Gestão de Projetos, 10(3), 45-62.

Mahoney, J. T., McGahan, A. M., & Pitelis, C. N. (2009). Perspective—The interdependence of private and public interests. *Organization Science*, 20(6), 1034-1052. https://doi.org/10.1287/orsc.1090.0472

Mengiste, B. W. (2022). Agency Theory: Its Discourse and Practice in the Selected Public-Sectors. *Journal of Social Sciences and Management Studies*, *1*(4), 34-43. https://doi.org/10.56556/jssms.v1i4.342

Matias-Pereira, J. (2010). A governança corporativa aplicada no setor público brasileiro. *Administração Pública e Gestão Social*, 2(1), 109-134. https://doi.org/10.21118/apgs.v2i1.4015

Matias-Pereira, J. (2018). *Administração pública*. Foco nas Instituições e Ações Governamentais. 5a ed. rev. atual. São Paulo: Atlas.

Milligan, G. W., & Cooper, M. C. (1985). An examination of procedures for determining the number of clusters in a data set. *Psychometrika*, 50, 159-179.

Mingoti, S. A. (2007). Análise de dados através de métodos estatística multivariada: uma abordagem aplicada. In: *Análise de dados através de métodos estatística multivariada*: uma abordagem aplicada. Belo Horizonte: Editora UFMG, (pp. 295-295).

Moore, M. H. (2002). *Criando valor público*: gestão estratégica no governo. Rio de Janeiro: Uniletras.

Muhlberger, P., & Pytlik-Zillig, L. (2016). Agency theory: Toward a framework for research in the public's support for and understanding of science. https://doi.org/10.31274/sciencecommunication-180809-10

Nemec, P., Štefko, R., & Kubák, M. (2022). Better Environmental Value Using Public Procurement: Evidence from Visegrad Group Countries. Finance a Uver: Czech *Journal of Economics & Finance*, 72(4). https://doi.org/10.32065/CJEF.2022.04.01

Ostrom, E. (2019). Institutional rational choice: An assessment of the institutional analysis and development framework. In: *Theories of the policy process* (pp. 21-64). Routledge.

Peters, B. G., & Pierre, J. (1998). Governance without government? Rethinking public administration. *Journal of Public Administration Research and Theory*, 8(2), 223-243. https://doi.org/10.1093/oxfordjournals.jpart.a024379

Plaček, M., Schmidt, M., Ochrana, F., Vaceková, G. and Soukopová, J. (2019). Repeated selection of supplier, factors and results: the Czech Republic. *Journal of Public Procurement*, 19(4) 322-344. https://doi.org/10.1108/JOPP-12-2018-0049

PMI. (2017). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*. 6th ed. Project Management Institute.

Slomski, V. (2005). Controladoria e governança na gestão pública. São Paulo: Atlas.

Tinoco, J. E. P., Escuder, S. A. L., & Yoshitake, M. (2011). O conselho fiscal e a governança corporativa: transparência e gestão de conflitos. *Revista Contemporânea de Contabilidade*, 8(16), 175-202.

Wilson, W. (1887). *The Study of Administration in Political Science.* Quarterly Vol. 2:Qouted in Adebayo, A. 91981), Principles and Practice of Public Administration in Nigeria.

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REVISTA CONTABILIDADE, GESTÃO E GOVERNANÇA
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Aplicação dos Princípios de Governança no Contexto do Setor Público: Uma Análise das Prestações de Contas dos Contratos de Obras Públicas do Estado de Minas Gerais

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RESUMO

***Objetivo**: Analisar as prestações de contas dos contratos de obras públicas do estado de Minas Gerais, sob a ótica da aplicação dos três princípios de governança, no contexto do setor público (openness, integrity, accountability).*

***Método:** Este estudo se caracteriza como descritivo, explicativo e quantitativo e, quanto aos procedimentos técnicos, como pesquisa bibliográfica e documental. A amostra desta pesquisa é composta por 96 contratos de obras de competência do Departamento de Edificações e Estradas de Rodagem (DEER/MG).*

***Originalidade/Relevância:** A pesquisa contribuiu para constatar a necessidade de melhorias na disponibilidade de dados no site do Tribunal de Contas, para garantia da transparência do que é apresentado à população.*

***Resultados:** Apurou-se que o cumprimento dos três princípios de governança corporativa na amostra foi insuficiente. Ao analisar as prestações de contas dos contratos de obras públicas do estado de Minas Gerais, sob a ótica da aplicação dos três princípios de governança no contexto do setor público (openness, integrity, accountability), foi possível identificar que a ausência dos dados dos contratos disponíveis no site do TCE/MG prejudica ambos os princípios.*

***Contribuições Teóricas**: A governança, nos contratos públicos, deve ser institucionalizada e não apresentada de forma fragmentada.*

***Contribuições Sociais/para a Gestão**: O estudo fornece elementos para que a gestão de contratos de obras públicas possa ter a influência dos princípios de governança corporativa, de forma a minimizar efeitos indesejáveis de má gestão de recursos públicos. Além disso, esta pesquisa chama a atenção para a disseminação de boas práticas de gestão de contratos de obras públicas.*

***Palavras-chave**: Contratos. Obras públicas. Governança.*

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