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GOVERNANCE IN PUBLIC UNIVERSITIES: AN UPPER ECHELON THEORY APPROACH

GOVERNANÇA EM UNIVERSIDADES PÚBLICAS: UMA ABORDAGEM TEÓRICA DE ALTO NÍVEL

MANUEL SALGUEIRO RODRIGUES JUNIOR
ORCID iD - http://orcid.org/0000-0003-3824-7976
Instituição/Afiliação Ceará State University

THAMARA MARCOS DOS SANTOS
ORCID iD - http://orcid.org/0009-0006-9728-9438
Instituição/Afiliação Federal University of Ceará

ABSTRACT:
Purpose: Public governance uses leadership, strategy, and control mechanisms, so good governance practices are necessary for university management. Thus, the heterogeneity of characteristics would aggregate broader sets of knowledge. In this way, our objective is to identify how the diversity of the attributes of top management team influences the quality of governance in Brazilian public universities.

Design/methodology/approach: This is an explanatory study of a quantitative nature, using the ordinary least squares method for the regression of panel data. We collected the identification of the management team on the universities' website and we identified the governance situation in Brazilian Federal Court of Accounts survey.

Findings: The results indicate that the diversity of managers' titles had a positive influence, and age diversity had a negative effect.

Research limitations/implications: The research informs public policymakers and managers about the best composition of management teams, aiming for better performance. Furthermore, based on results, we observed the importance of training programs to improve the skills of managers of newer Higher Education Institutions. This study's results are specific to Brazilian public universities.

Originality: Governance in public universities is a topic that has little explored and the most of the studies found are limited to analysis the level of adherence to good governance practices. Different from previous research, we seek to identify factors that motivate the variations in the quality of governance. This study is pioneer in exploring the Upper Echelons Theory in the management of Brazilian public universities.

Keywords: Upper Echelons Theory; Public Governance; Diversity.

RESUMO:

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Propósito: Governança pública utiliza mecanismos de liderança, estratégia e controle, portanto, boas práticas de governança são necessárias para a gestão universitária. Assim, a heterogeneidade das características agregaria conjuntos mais amplos de conhecimento. Dessa forma, nosso objetivo é identificar como a diversidade dos atributos da equipe de alta gestão influencia a qualidade da governança nas universidades públicas brasileiras.

Design/metodologia/abordagem: Este é um estudo explicativo de natureza quantitativa, utilizando o método ordinário dos mínimos quadrados para a regressão de dados painel. Coletamos a identificação da equipe de gestão no site das universidades e identificamos a situação de governança na pesquisa do Tribunal Federal de Contas do Brasil. Resultados: Os resultados indicam que a diversidade dos títulos dos gestores teve uma influência positiva, e a diversidade etária teve um efeito negativo.

Limitações/implicações da pesquisa: A pesquisa informa formuladores de políticas públicas e gestores sobre a melhor composição das equipes de gestão, visando um melhor desempenho. Além disso, com base nos resultados, observamos a importância dos programas de treinamento para aprimorar as habilidades dos gestores de novas instituições de ensino superior. Os resultados deste estudo são específicos para universidades públicas brasileiras.

Originalidade: A governança em universidades públicas é um tema pouco explorado e a maioria dos estudos encontrados se limita a analisar o nível de adesão às boas práticas de governança. Diferente de pesquisas anteriores, buscamos identificar fatores que motivam as variações na qualidade da governança. Este estudo é pioneiro na exploração da Teoria dos Altos Escalões na gestão das universidades públicas brasileiras.

Palavras-chave: Teoria dos Altos Escalões; Governança Pública; Diversidade.

1 INTRODUCTION

Public Administration, as a result of the approach given by New Public Management (NPM), is increasingly similar to management in private companies, emphasizing quality management and social participation (Mills et al., 2021). Given this, public governance seeks to use leadership, strategy, and control mechanisms (Villanueva, 2023).

Governance presents itself as a way of changing the relationship between the State and society, with the latter becoming essential for the formulation, planning, and execution of public policies and playing an essential role in social control (Jing & Hu, 2017). Therefore, good governance practices become necessary in managing any public entity, including universities, which are mainly responsible for developing society, being a public good directly linked to a country's project (Hamdan, 2023).

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Part of university education in Brazil is public and such universities have faced budgetary challenges in recent years, such as budgetary urgency and the offer of places without proportional allocation of personnel and budget (Bouwma-Gearhart et al., 2021). With the advent of the COVID-19 pandemic, public spending was primarily directed towards the public health emergency, which influenced the reduced educational resources (Al-Samarrai et al., 2020). These challenges require better management of these entities to improve performance, meet service demands, and provide transparency in the management of public universities (Ansell et al., 2021).

Governance in public universities is a topic that has little explored (Hattke & Blaschke, 2015). Most of the studies found are limited to analysis and surveys on the level of adherence of Higher Education Institutions (HEIs) to good governance practices (Hong, 2018; Mulili, 2014). Therefore, they did not seek to identify factors that motivate variations in the quality of governance. From this perspective, as universities generate essential economic and social impact, understanding the factors influencing good governance practices improves public management.

The top management team are mainly responsible for adopting good governance practices. By exercising their influence on decision-making, they influence the efficiency and effectiveness of the action (Davis et al., 1997). In this aspect, several factors associated with the management team explain the quality of an entity's governance.

Hambrick and Mason (1984), in their seminal work on the Upper Echelons Theory (UET), highlight the influence of managers' characteristics on organizational performance. This theory states that their perceptions, cognitions, and values interfere with strategic decision-making.

Based on these statements, the heterogeneity of characteristics would aggregate broader sets of knowledge and resources (Liu, 2023). Using UET, the influence of the diversity of the management team on the organizational performance of different businesses, impact on decision making and the way they lead their team was verified (Boadi et al., 2022; Janahi et al., 2023; Neukirchen et al., 2022; Fernández-Temprano & Tejerina-Gaite, 2020; He & Jiang, 2019; Ullah et al., 2020; Bennouri et al., 2018; Hattke & Blaschke, 2015; Finkelstein & Hambrick, 1996).

Regarding university management and UET, Hattke and Blaschke (2015) present a study that evaluated the influence of top management diversity on academic

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excellence in 75 German public universities based on four hypotheses associated with educational level, age, sexual diversity, and size of the top management team (TMT).

Furthermore, there is a lack of research on models for improving the public sector, especially for HEIs (Hattke & Blaschke, 2015). Given that few studies exist on the management of these entities in light of the Higher Echelons Theory, we decided to work with this object of study to fill this theoretical gap.

This leads to the research question that guides this investigation: How does the diversity of the top management team's characteristics influence the quality of governance in public universities in Brazil?

Thus, the general objective of the work is to identify how the diversity of characteristics of the senior team influences the quality of governance in public universities in Brazil.

This study contributes to the literature on UET, deepening its application in public management and universities, where little is explored. It is also expected to improve understanding of leadership and strategy in public governance, allowing public policy formulators and managers to consider better the best composition of management teams and the engaged sectors of society to understand variations in the quality of public governance.

2 THEORETICAL FRAMEWORK

2.1 CHARACTERISTICS OF TOP MANAGERS

The Upper Echelons Theory comprises two central and interconnected ideas: Managers act according to their interpretations of strategic situations, and their experiences, values and personalities influence these interpretations (Hambrick & Mason, 1984). The following topics address the personal characteristics studied in research involving UET.

2.2 AGE DIVERSITY

The age heterogeneity of senior management members is an essential attribute since the age of managers represents not only the team members' total experience

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level but also their maturity concerning the business (Neukirchen et al., 2022; Fernández-Temprano & Tejerina-Gaite, 2020).

Studies provide evidence that older senior managers tend to have more conservative management; they are more averse to risk. On the other hand, younger managers are more receptive to taking risks and seeking more innovative growth strategies (Ali et al., 2021; Walter & Scheibe, 2013; Mcclelland et al., 2012).

This personal characteristic can mean that organizations managed by managers with different age groups can perform better, making teams diverse by age more effective in monitoring decision-making (Janahi et al., 2023). Other studies also indicate that age heterogeneity provides greater informative power and encourages the adoption of sustainable practices (Neukirchen et al., 2022; Sutarti et al., 2021; Fernández-Temprano & Tejerina-Gaite, 2020; Ferrero-Ferrero et al., 2015).

At the governmental level, age diversity influences the quality of public governance as managers' skills result in a more excellent repertoire and expertise to better deal with budget restrictions and seek greater effectiveness of services. Therefore, we formulate the first hypothesis of this research:

Hypothesis 1: The age diversity of the senior team positively influences the quality of public governance.

2.3 SEXUAL DIVERSITY

Sexual diversity in the management of organizations has already been the subject of many studies within the scope of UET, with the female presence being explored with the quality of organizational decisions (Fine et al., 2020; Khan et al., 2019). Women include better problem-solving processes and improve the entity's level of governance, as they reduce agency conflicts (Boadi et al., 2022; Park, 2020; He & Jiang, 2019; Ullah et al. 2020). Still, concerning governance, there is evidence that the representation of women in senior management can play a positive role in the development of environmental strategies (He & Jiang, 2019).

However, research reveals that female representation in senior management negatively affects the organization's performance (Matsa & Miller, 2013; Ujunwa, 2012; Ahern et al., 2011).

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Studies also suggest there is no significant relationship between sexual diversity and organizational performance (Fernández-Temprano & Tejerina-Gaite, 2020; Bennouri et al., 2018; Hattke & Blaschke, 2015).

Considering that the results of previous research are antagonistic, we decided to establish the following hypothesis:

Hypothesis 2: Sexual diversity in the senior team positively influences the quality of public governance.

2.4 DIVERSITY OF TITLES

The Upper Echelons Theory predicts that managers with a specific educational level develop different management styles (Finkelstein & Hambrick, 1996). Diversity of skills and degrees is a crucial aspect of a management team, considering that diverse educational levels enable the team to make high-quality decisions, as members have different cognitive abilities to process and analyze information and execute more complex decisions to manage poorly structured situations (Boadi & Osarfo, 2019; Cheng et al., 2010; Bantel, 1993).

Board members with different levels of education are valuable for organizational performance as they improve managers' abilities to recognize new insights (Ahmed & Brennan, 2019). It also enables the team to carry out faster and more in-depth assessments and make better decisions in the long term (Mahadeo et al., 2012; Kim & Lim, 2010).

In public management, the diversity of titles can improve the quality of public governance. By analogy, managers with a high level of titles may have a better aptitude for dealing with control and strategy practices, which are elements of public governance. Managers with a lower degree level are more willing to demonstrate innovative and adaptable skills in the short term.

On the other hand, other studies reveal that there is a negative relationship between the diversity of the manager's degree and organizational performance (Fernández-Temprano & Tejerina-Gaite, 2020; Escribá-Esteve & Sánchez-Peinado; Sánchez-Peinado, 2009). And yet, without significant influence (Hosny & Elgharbawy, 2022; Khan et al., 2019).

Since the research results are divergent, we decided to define the following hypothesis:

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Hypothesis 3: The diversity of senior team titles positively influences the quality of public governance.

2.5 SIZE OF THE TOP MANAGEMENT TEAM (TMT)

The TMT size is an element that represents the structural and compositional context of a team (Amason & Sapienza, 1997). As the size of the TMT grows, the diversity of opinions, interests, and values increases (Li & Hambrick, 2005; Bantel & Jackson, 1989). Larger teams may also face more significant conflict due to potentially diverse points of view. They may also suffer from problems coordinating and controlling activities and interests. Interaction and reciprocity between team members decrease as teams grow since size can restrict the exchange of information between managers (Escribá-Esteve et al., 2009; Simsek et al., 2005).

On the other hand, more prominent groups have more significant cognitive resources, group performance, and creativity at their disposal, which can contribute to improving strategic innovations (Certo et al., 2006; Haleblian & Finikelstein, 1993). Consequently, the size of the TMT can result in higher quality decision-making and increased collaborative performance due to the range of knowledge and experience group members possess (Knippenberg et al., 2004).

In this case, the benefits of team size at federal universities may be inhibited by potential communication and coordination problems among other public managers. For this reason, we considered the following hypothesis:

Hypothesis 4: The size of the TMT team negatively influences the quality of public governance.

2.6 CONTROL VARIABLES

Other aspects inherent to public higher education institutions can influence the quality of governance. This study explored maturity based on the HEIs' time of existence, considering that this can contribute to their solidity and performance, improving management over time. More mature organizations can present better strategies, more robust processes, and greater capacity to achieve success in their projects and meet the demands of stakeholders (Eckardt, 2018).

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Furthermore, the influence of universities' size on the quality of Governance was analyzed, and the budget allocated to each HEI was considered. The size of entities influences aspects such as investments in innovation and greater adherence to people management practices (Szász et al., 2023). Likewise, financial resources provide an advantage by creating value, which results in superior performance (Januri et al., 2023).

3 METHODOLOGY

This is an explanatory study, as it aims to analyze which factors contribute to the quality of public governance in federal universities. Regarding the nature of the method, this research is defined as quantitative, given that it aims to measure the hypotheses and analyze the cause-and-effect relationship between the variables studied through regression analysis with panel data.

3.1 RESEARCH PARTICIPANTS

The initial population studied consisted of 62 universities. However, three universities were disregarded because they did not have data available for 2017 on the Federal Court of Accounts (Tribunal de Contas da União – TCU) portal. Thus, the final population consists of 59 federal universities each year. The years in which the TCU surveyed the governance profile of federal public entities were examined: 2017, 2018, and 2021, resulting in 177 observations for the dependent variable.

3.2 DATA COLLECTION INSTRUMENT

For the dependent variable, we based the data collection on the Federal Court of Accounts (Tribunal de Contas da União – TCU) integrated survey, which assesses the governance situation in entities that constitute direct and indirect public administration (Brazil, 2020).

Therefore, the dependent variable (GOV) corresponds to the public governance index, which represents all practices evaluated in the theme of public governance based on three mechanisms: leadership, strategy, and accountability. The index mentioned above measures the capacity of the public entity to establish the

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governance model, manage the performance of senior management, promote strategic management, manage risks, and promote transparency.

Regarding the independent variables, the Rectors, Vice-Rectors, and Pro-Rectors were considered high-level managers. From this, we collected, on the federal universities' website, the identification of the management team in the period studied, and data on sexual diversity, title, age, and team size. Table 1 below presents the independent variables, their hypotheses, the measurement method, and the previous studies that support their use.

Regarding control variables, the federal budget allocated to each HEI was used and collected on the federal government's Transparency Portal. Regarding maturity, it was sought to identify the HEIs' year of foundation and time of existence on the entities' electronic portals.

Table 1 – Independent and control variables studied

Variable	Code	Measurement	Operationalization	Expected impact	Previous studies
Age	H1: AGE	Age of top managers	Coefficient of variation	Positive	Fernandéz-Temprano & Tejerina-Gaite, 2020; Sutarti et al., 2021 Janahi et al., 2023; Neukirchen et al., 2022.
Sexual diversity	H2: SX	0 (if female) and 1 (if male)	Coefficient of variation	Positive	Fine et al., 2020; He & Jiang, 2019; Ullah et al., 2020; Boadi et al., 2022.
Degree	H3: TIT	1 (specialization), 2 (master's degree) and 3 (doctorate)	Coefficient of variation	Positive	Cheng et al., 2010; Kim & Lim, 2010; Boadi & Osarfo, 2019.
Size TMT	H4: TMT	Number of managers	Team Size	Negative	Simsek et al., 2005; Escribá-Esteve et al., 2009.
Input	POR	Total federal budget	Natural logarithm of the total budget amount	Positive	Januri et al., 2023
Maturity	MAT	Time of existence	Years of existence	Positive	Eckardt, 2018.

Using budget ranges, the descriptive analysis explored the average governance index concerning university size. It then conducted regression analysis with panel data according to the empirical model presented in the following topic.

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3.3 EMPIRICAL MODEL

The following equation can be formulated by measuring the variables and presenting the expected results.

$GOV_i = \beta_0 + \beta_1(AGE) + \beta_2(SX) + \beta_3(TIT) + \beta_4(TMT) + \beta_5(POR) + \beta_6(MAT)$

Equation 1

Using the ordinary least squares (OLS) method for panel data regression, we performed the Chow and Hausman tests to choose between the fixed and pooled effect models. The Chow test result was significant, identifying that the unobservable characteristics of the data will be important in the modeling. The Hausman test result showed that the specific characteristics correlate with some regressor. Therefore, we identified that the most appropriate estimation is with the fixed effects model, explained in the following section.

4 RESULTS AND DISCUSSIONS

4.1 EVOLUTION OF THE GOVERNANCE INDEX

Table 1 presents the average governance index for the size of the universities and the general average during the years studied. From this analysis, it is possible to state that the average public governance in federal universities has grown over the years.

Table 1 – Average Governance index by size.

Tracks	Input	2017	2018	% (2017-2018)	2021	% (2017-2021)
1st Track	Up to 500,000,000	0,404	0,418	**3,36%**	0,583	**39,51%**
2nd Track	Above 500,000,000 and up to 1,000,000,000	0,374	0,425	**13,52%**	0,597	**40,46%**
3rd Track	Above 1,000,000,000 and up to 1,500,000,000	0,411	0,453	**10,41%**	0,600	**32,42%**
4th Track	Over 1,500,000,000	0,323	0,434	**34,16%**	0,706	**62,84%**
	Overall Average	**0,384**	**0,426**	**10,94%**	**0,612**	**43,66%**

Table 1 shows that the average governance index continuously increased in all ranges, with a more pronounced increase in 2021.

The improvement of governance in federal universities represents a greater responsibility with public governance, that is, with the improvement of standards, management strategies, and the application of governance principles over the years, indicating that entities sought to adapt to the precepts from TCU.

Furthermore, the table shows that more prominent universities grew more than others and had the highest average governance in 2021, with an increase of 62.84% compared to 2018.

The following analysis addresses the factors that motivated the governance performance of federal universities.

4.2 FACTORS THAT IMPACT GOVERNANCE

The following tables present the regression results with panel data.

Table 2- Regression analysis with panel data with the polled, fixed, and variable effects model.

Variable	Polled		Fixed effects		Variable effects	
	Coef	p-value	Coef	p-value	Coef	p-value
CV_Age	-0,3691	0.215	-0,2486	0.391	-0,6275*	0.044
CV_Sx	0,0219	0.458	-0,0304	0.411	0,0162	0.641
CV_Tit	0,1879*	0.083	0,1134	0.431	0,2602*	0.042
TMT_Tot	-0,0290*	0.009	-0,0338	0.124	-0,0255*	0.089
Maturity	0,0003	0.372	0,0380*	0.000	0,0005	0.359
Size	0,0134	0.374	0,1999	0.278	0,0190	0.408
Constant	0,6501	0.020	-4,8468	0.167	0,5293	0.210

After applying the Chow test, Breusch and Pagan, and Hausman, the fixed-effects model was identified as the best-adjusted. However, the results were presented with the three models for greater transparency. Furthermore, as UET is rarely explored in public universities, the behavior of the variables in all models was analyzed.

The results obtained from the fixed effects model indicate that none of the variables were significant, and consequently, all hypotheses were rejected. Thus, the UET does not explain the variation in the quality of governance of HEIs. Regarding the control variables studied, maturity showed significance at the governance level,

confirming the expected impact. On the other hand, the size of the HEIs did not have a significant influence.

Therefore, the results are consistent with studies that indicate the lack of significance of the characteristics studied in UET for management (Fernández-Temprano & Tejerina-Gaite, 2020; Khan et al., 2019; Hattke & Blaschke, 2015). Moreover, they are not in line with those who highlighted the significance of the characteristics for governance (Boadi et al., 2022; Neukirchen et al., 2022; Boadi & Osarfo, 2019; Eckardt, 2018).

Additionally, based on the results of the other models, there is evidence that the variables title, age, and size of the TMT can influence the quality of governance. In both models, the diversity of managers' titles showed a positive influence, and the size of the TMT showed a negative influence. Age diversity resulted in a negative effect with a variable effects model.

Although these variables are not significant in the most adjusted model, it was chosen to highlight these signs, considering that such aspects may be necessary for future studies, considering the exploratory nature of this research.

Finally, it is essential to highlight that the sexual diversity and size variables were insignificant in any model. However, several studies identify some influence on management based on sexual diversity. In light of critical mass theory, the influence of female representation is not linear but conditioned to the level of such a condition (Kanter, 1977).

Based on this assumption, it was considered pertinent to explore the variables with data grouped by number of women, as shown in the table below:

Table 3- Regression analysis with panel data grouped by number of women on the team.

PANEL A – Teams with three or more women

Variable	Polled		Fixed effects		Variable effects	
	Coef	p-value	Coef	p-value	Coef	p-value
CV_Age	-0,0837	0.828	-0,3436	0.514	-0,7296*	0.087
CV_Sx	0,0351	0.433	0,0087	0.875	0,0318	0.522
CV_Tit	0,1837	0.186	0,1979	0.388	0,2948*	0.074
TMT_Tot	-0,0136	0.497	-0,0683*	0.089	-0,0190	0.432
Maturity	0,001*	0.027	0,0409*	0.000	0,0009	0.159
Size	-0,0121	0.491	0,0001	0.999	-0,0053	0.831
Constant	0,9402	0.009	0,8561	0.860	0,9342	0.058

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PANEL B – Teams with less than three women

Variable	Polled		Fixed effects		Variable effects	
	Coef	p-value	Coef	p-value	Coef	p-value
CV_Age	-0,7054	0.144	-1.6733*	0.004	-1.8152*	0.000
CV_Sx	-0,1157	0.272	-0,0091	0.914	-0,0029	0.977
CV_Tit	0,1693	0.364	-0,1424	0.650	-0,0390	0.879
TMT_Tot	-0,0463*	0.005	0,0553	0.323	-0,0085	0.751
Maturity	-0,0012*	0.072	0,0364*	0.033	-0,0003	0.830
Size	0,0836*	0.007	0,5699	0.928	0,0372	0.522
Constant	-0,4238	0.426	-2.0990	0.864	0,2762	0.796

Although the variable referring to sexual diversity remains irrelevant, the presence of women on the team affects the results of the other variables. Based on the fixed effects model, the size of the TMT and maturity were influential when three or more women were on the team. In teams with less than three women, age has a negative impact, and maturity continues to have a positive effect.

The results presented are diverse, so it is necessary to explore more observations of the variables over a more extended period to reach more precise conclusions. Therefore, the most recurrent results in all tested models will be discussed.

Regarding the variables studied, it was found that the ages of university managers are equivalent. Of the 1,547 managers explored, 58% are in the 50-60 age group. The public sphere causes a bias in this direction, as reaching a management position requires a long path.

In this case, Brazilian federal universities have the peculiarity of appointing higher-ranking managers based on their political and academic trajectory. In this way, people who reach the highest level are older, thus explaining the age equivalence between them. From this observation, it can be implied that the age equivalence between managers may have influenced the equation's result.

Age diversity can also negatively impact the quality of governance as there may be disagreement among managers; that is, older managers may be more reluctant to try to innovate in management, in contrast to younger managers with a more innovative, dynamic, and risk-prone profile.

Since the object of the study is public institutions, age heterogeneity negatively impacts governance, so there may be an imbalance between the innovation of younger

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managers and the conservatism of older managers. Therefore, the UET did not apply to the variable explored; that is, the perspective is that homogeneous teams contribute more to the quality of public governance and, therefore, establishing parameters related to the age range of public managers in the composition of the management team can improve the quality of public governance.

The results regarding sexual diversity indicated the lack of significance of this variable in the quality of governance. However, based on the critical mass theory, all variables were explored using models grouped by number of women. Therefore, we observed that, although the variable referring to sexual diversity does not have a relevant impact, female participation in university management influences the results of other variables. When the senior team comprises three or more women, the TMT size negatively impacts the performance of the HEIs. A viable explanation for this is the phenomenon of tokenism, as when forming a larger team, the team's level of sexual diversity can decrease, so women can act as tokens, who enjoy less influence compared to members of the majority.

Regarding the managers' qualifications, the result can be explained based on the diversity of skills and knowledge that the qualification levels provide to the management team. That is, the observable skills acquired through different degrees of qualifications are valid proxies for the cognitive orientation, knowledge, and values that will impact the quality of public governance. Title-related heterogeneity benefits organizational performance by exchanging and processing task-specific information and viewpoints.

Higher education indicates a more significant skill base associated with effective strategies and efficient management. In turn, managers with a lower degree may be more willing to demonstrate their technical and academic skills through improved governance in order to consolidate their careers.

In this context, the presence of managers with different qualifications positively impacted the quality of governance, as the team will tend to have good governance practices, such as responsiveness, continuous improvement, innovative leadership, promoting simplification and modernization of public management, among others. Therefore, it is pertinent to have managers with different degrees of qualifications in the management team of federal universities.

The size of the top management team negatively influences the quality of governance. Larger teams may be more likely to have recurring asymmetries of

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information and objectives between members, which, in turn, requires regulations for team coordination and control. Consequently, strengthening formal and bureaucratic coordination systems can impede the entity's ability to innovate and adapt to good governance practices.

According to the database, most teams have nine members, and the quality of governance begins to decline when the team has eight members. Furthermore, seven teams showed the best governance level, while the average governance level of teams with ten members is 0.45, and smaller teams have an average of 0.60.

The composition of public entity teams may include positions of trust, which are sometimes used to accommodate political interests. Therefore, these positions increase the team size and can negatively impact the entities' management. Team size can also restrict the exchange of information between managers; it can be less effective and more costly in communication and decision-making, thus limiting the effectiveness of planning. Therefore, it is interesting to consider the number of members when forming the management team of federal universities.

When analyzing the impact of control variables, maturity showed a positive impact on the quality of governance, providing evidence that the length of time institutions have existed influences their organizational performance. Furthermore, despite newer HEIs showing growth in governance in 2021, they still have a below-average level of governance.

Mature universities have more experience executing more consistent planning, focusing on efficient processes, improving strategies, investing in innovation, and benefiting from know-how capable of understanding the dynamism of public policies and using information to promote achievements in their environment.

Given these results, newer universities must be looked at differently to guarantee equity between HEIs and correct existing disparities about their time of existence. Furthermore, low-maturity universities need good strategic planning and control processes to create a more capable management team; these institutions require training for their managers. Therefore, it is interesting to direct training programs to the management team of these universities.

5 FINAL CONSIDERATIONS

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This study is located in management research in public higher education. It aims to analyze the quality of governance in federal universities, considering the influence of the characteristics of the high-ranking team.

The results reveal evidence that the diversity of managers' titles has a positive effect on the quality of governance, the variables age and size of the TMT had a negative impact, and sexual diversity did not produce a significant effect. In addition to these variables, the maturity and size of the HEIs were explored as control variables, confirming the positive influence of maturity on the quality of governance; that is, the longer the university has been in existence, the better the level of governance.

This study provides evidence that public governance in Brazilian federal universities is improving and makes it possible to understand how the diversity of the top management team influences strategic decisions and the quality of public governance in Brazilian federal universities.

The research contributes to the increase in studies on strategic leadership in public organizations, differentiating itself by being a pioneer in exploring the Upper Echelons Theory in the management of Brazilian federal universities to analyze its impact on the quality of governance.

The study supports governments in developing public policies to improve governance in these entities. It also highlights the importance of training programs to improve the skills of managers of newer HEIs.

Furthermore, the research informs public policymakers and managers concerned with higher education about the best composition of management teams, aiming for better performance. It also contributes to the engaged sectors of society, improving their understanding of the factors that impact the quality of governance in federal universities in Brazil.

Finally, it should be noted that this study's results are specific to Brazilian federal universities because regional and organizational peculiarities prevent the extrapolation of the results. Another limitation of this research is the temporal issue, as the three surveys made available by the TCU were used. Other research may use a more extended period in the future.

Furthermore, new research could, based on the suggested associations, investigate whether other aspects of UET affect the quality of governance of HEIs, such as evaluating the effect of the area of training of managers and differentiating

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administrative sciences, which provide better training in the form of managing other areas.

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