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Glass Ceilings in the State: Gender and Discretionary Appointments in Brazil's Federal Bureaucracy

Abstract

This study investigates the intersection of gender and political affiliation in Brazil's federal bureaucracy, focusing on discretionary appointments to high-level positions within ministerial departments. Drawing on data from the SIAPE system (1999–2018) and employing logistic regression models, it analyses the influence of gender, race, partisan affiliation, ties to the public sector, and education on appointments to levels 5, 6, and 7. The findings reveal that gender and political affiliation are pivotal factors: women are significantly underrepresented at higher hierarchical levels, with their likelihood of appointment decreasing at levels 6 and 7. Conversely, partisan affiliation increases the probability of securing these positions, underscoring the enduring role of political patronage in Brazil's coalition presidential system. The study highlights the dual challenges of gender bias and political opportunism in achieving equitable representation in public administration. While the presence of women in level 5 roles has increased, their progression to higher positions remains constrained by structural and cultural barriers. This research contributes to the discourse on representative bureaucracy by providing empirical evidence on the gendered dynamics of political appointments. It advocates for policies to address these disparities, including transparent selection processes and measures promoting gender equality, ultimately enriching governance and policymaking in Brazil.

Keywords: gender; political appointments; public bureaucracy; Brazil; policymaking

Introduction

Political power has been historically concentrated in the hands of men, with most nations led by male political figures. However, the dynamics of policymaking deserves a more nuanced examination. While numerous studies have explored the barriers faced by women in the private sector and electoral politics (e.g., Hessami & Fonseca, 2020; Purcell et al., 2010; Taparia & Lenka, 2022), research addressing similar challenges within the public sector remains relatively limited.

Given that bureaucrats play a pivotal role in policy design and implementation, understanding the composition of the leading bureaucratic body is essential for assessing both the constraints and opportunities of representative democracy. In this sense, representative bureaucracy theories state that public bureaucracy should mirror the population's socioeconomic characteristics to promote equitable and responsive public policies (Kennedy et al., 2025). Therefore, understanding the barriers women face in advancing within the public sector is essential for developing more equitable gender policies.

This article presents the findings of an unprecedented statistical study analysing the gender composition of the central government bureaucracy in Brazil. Brazil's federal civil service system is hybrid, with positions filled through both competitive public examinations and discretionary political appointments. Drawing on institutional theories, most studies on the Brazilian federal system examine the role of political parties in appointing individuals to these discretionary high-ranking roles. These studies suggest that the President of the Republic strategically allocates these appointments in exchange for political support, reinforcing the patronage dynamics that characterise the country's governance structure (Lopez & Silva, 2019).

Hence, existing studies on discretionary appointments primarily focus on the role of political parties, often overlooking other factors that influence the likelihood of appointment to high-level bureaucratic positions. Meanwhile, research on women's access to leadership roles has predominantly centred on the private sector. This study seeks to bridge this gap by analysing the composition of Brazil's central government bureaucracy, quantitatively estimating the impact of gender on the odds of being appointed to the highest posts.

This article advances the field by employing inferential statistical methods to assess the impact of multiple factors on political appointments, offering novel insights and suggesting new directions for future research. Using data from the Brazilian public bureaucracy's human resources system (SIAPE, 1999–2018), I applied probit and logit models to estimate the effects of gender on appointments to the highest positions within the federal bureaucracy, also comparing Dilma Rousseff (2011), the only female president Brazil had, and Michel Temer (2016 and 2018) administrations. In addition to verifying correlation between gender and appointment, the models also tested if having a woman as the president of Brazil resulted in more women holding high-echelon posts.

This is the first large-scale quantitative study to systematically examine the impacts of gender in the Brazilian public bureaucracy. The statistical analysis revealed that gender is as influential as partisan affiliation in determining appointments to these roles, but having a female Chief Executive does not necessarily translate into increased female representation at the top levels of government. These findings underscore the need for further research to examine the barriers and opportunities women face in advancing within the public bureaucracy, ultimately contributing to a more representative bureaucracy.

The remainder of this article is structured as follows. The next section presents a narrative literature review, synthesising the literature on representative bureaucracy and discretionary appointments in Brazil. The subsequent section, "Data and Methods," outlines the methodological approach and research design, detailing the procedures employed in the analysis. The results section presents the findings derived from the regression models, supplemented by additional empirical evidence. Finally, the conclusion summarises the key insights and proposes future directions for advancing the research agenda on gender and the public bureaucracy.

Literature Review

Gender Dynamics and Representative Bureaucracy

The concept of representation in the social sciences lacks a single, universally accepted definition. However, a broad and widely recognised interpretation associates representation with the act of "acting on behalf of someone." In her seminal work, Pitkin (1967) distinguishes be-

tween different forms of representation, including substantive representation and descriptive representation. Substantive representation occurs when a representative advocates for the interests and needs of their constituents, whereas descriptive representation refers to a demographic resemblance between representatives and those they represent (Pitkin, 1967). This distinction has been extensively applied in gender studies, which often discuss if increasing the number of women in leadership and decision-making positions will enhance the alignment between public policies and women's preferences or empower women (Hinojosa, 2021; Mendelberg et al., 2014).

Similarly to the concept of "descriptive representation", representative bureaucracy theories state that the composition of the public bureaucracy should mirror the demographic and social characteristics of the population. Passive representation refers to the extent to which the public bureaucracy reflects the demographic composition of society, whereas active representation occurs when the social groups that bureaucrats passively represent actually benefit from the policies they help design or implement (Kennedy et al., 2025). Although passive representation does not translate necessarily into active representation, identity is a key component in this field. Gender identity, in particular, is an important component of policy outcomes. As a sociological term, gender comprises social relations implying an unbalance of power in which men get social, economic or political benefits (Kennedy et al., 2020).

The ideal of masculinity – a series of traits related to "being a man" – was historically institutionalised as the correct way to act in public organisations (Kennedy et al., 2020). Not surprisingly, political institutions are often dominated by men. The United States, one of the most important liberal democracies, have never had a female president. In Brazil, Dilma Rousseff was the only female president, and she was impeached in 2016 in a dubious process full of misogynist manifestations. Likewise, the high-echelon posts in the Brazilian public bureaucracy are dominated by men, with a few exceptions in specific policy domains – most of them related to social care or less prioritised areas (D'Araújo & Ribeiro, 2018).

Masculinity continued to be the "dominant and invisible ideology of public administration" (Kennedy et al., 2020, p. 1107). Whereas the first studies of representative bureaucracy focused on socioeconomic elements and class, gender and race became increasingly relevant in this field (Kennedy et al., 2025). Gender is one of the broad demographic terms that define "identity", the core element of descriptive representation and studies on representative bureaucracy. However, data collection is still a major challenge, as most studies use quantitative data and techniques largely based on surveys or census in which individuals check off boxes identifying themselves by the binary definition of sex – female or male (Kennedy et al., 2020).

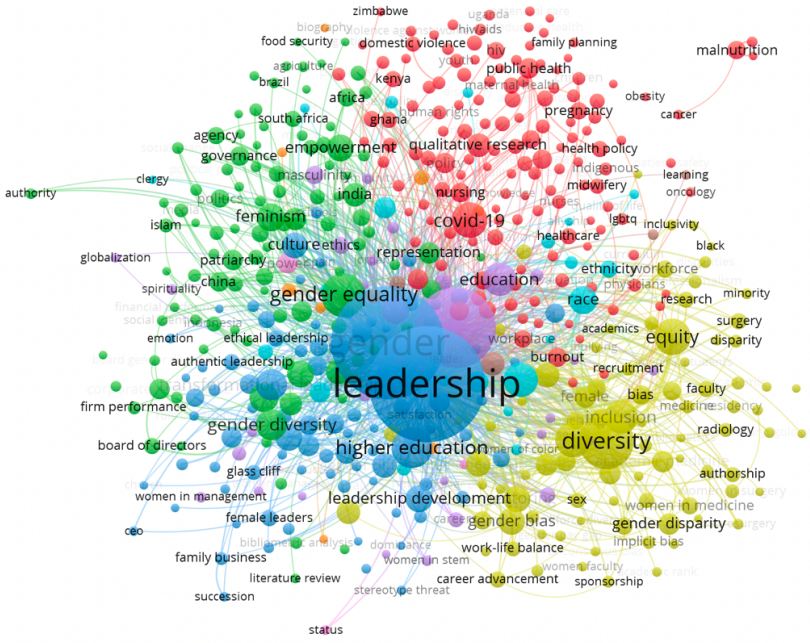
Moreover, these studies focus predominantly on the United States or European countries. Despite the relevance of the gender inequalities in Brazil, there are few empirical studies that analyse gender-related data within the public bureaucracy. Most existing research on gender in Brazil tends to focus on the private sector or politically elected positions, often overlooking non-elected roles such as government officials. Most gender studies focus on the private sector, addressing the "glass ceiling", the unofficial barriers for women to advance their professions (Purcell et al., 2010). The glass ceiling is intrinsically related to the private sector, as studies

on gender in public organisations are still scarce (Caceres-Rodriguez, 2011) compared to the private sector[1].

Figure 1 illustrates the field through a network map of keywords. Using the keywords 'gender' and 'leadership', I downloaded the metadata of 18,676 publications from 2000 to 2025. The lines measure the force of links between keywords and the circles the occurrence. Words such as "firms" and "business" are part of clusters, whereas there is no mention to public administration or civil service. Most keywords related to representation refer to the private sector, such as "board of directors", "family business", and "firm performance". Keywords related to the public sector refer to public health or politics.

Figure 1

Network map (co-occurrence of keywords)



Note. Source: metadata from Scopus. Network map made via VOSviewer. Co-occurrence = 15.

Studies on gender usually give more emphasis to managerial positions in the private sector or electoral institutions and actors, such as parliaments and candidates. There are less studies focused on gender inequalities related to government officers. Empirical studies on the public bureaucracy, which examine how public posts are filled, focus on other variables that might affect the likelihood to be appointed to high-level positions in the public bureaucracy, which refers to non-elected government officers. Women's access to leadership positions in public bureaucracies—specifically non-elected roles—remains underexplored in this literature compared to the private sector.

[1]I conducted a search on Scopus using two keyword combinations: (1) "glass ceiling" AND ("public sector" OR "public administration" OR "public office"), and (2) "glass ceiling" AND ("companies" OR "private sector" OR "firms"). The first search returned 64 publications, whereas the second yielded 252. When searching for "female" and "leadership", the network maps helped to identify connections among keywords, which were predominantly associated with the private sector, as discussed above.

Women's leadership in public bureaucracy is essential for analysing representation, as bureaucrats play a pivotal role in policy design and implementation. Representative bureaucracy, therefore, posits that greater identity congruence between bureaucrats and citizens enhances policy effectiveness and public trust. It assumes that a more diverse bureaucracy, reflecting the social composition of the population, can lead to more equitable and responsive governance (Kennedy et al., 2020). Thus, the role of gender in public administration has still much to advance in studies on gender, public policy, and representation.

Discretionary Appointments in Brazil

The Brazilian political system is described as a "coalition presidentialism," a term that reflects its distinctive institutional framework, which combines a multi-party system, federalism, and a presidential form of government. This unique configuration leads to intricate negotiations between the president and multiple political parties, shaping governance through complex bargaining dynamics (Abranches, 1988, 2018). Governability is only possible if the president negotiates with parties with diverse ideologies. In this context, public offices are considered a currency for the president to buy political support from political parties (Perlin & Santos, 2019).

Regarding its civil service, Brazil has a hybrid system in which most positions are held by career civil servants recruited via competitive public examinations. However, managerial posts are primarily discretionary, which means that the president or the minister has the formal authority to appoint anyone. Most of these discretionary posts (called 'DAS', an abbreviation for direction and superior management in Portuguese) were historically held by career civil servants. Until 2021[2], there were six official managerial positions, the sixth being the highest among the bureaucrats, usually the heads of the secretariats and departments[3]. The database used in this study has an extra level (7), which sits above this formal hierarchy.

There is a solid and expanding body of research that examines the factors influencing the appointment of individuals to high-echelon positions within the public bureaucracy in several countries or regions. Considering the coalition presidentialism in Brazil, most national studies focus on the role of political parties in appointing individuals in exchange to supporting the president. The main independent variable in these studies is partisan affiliation. "Politization" or "bureaucratic partisanship" are often estimated through the number of partisans appointed to discretionary posts. Other variables, such as gender and race, remain underexplored in this literature, largely due to the predominant focus on specific organisations and rules, particularly political parties and electoral systems (Albrecht, 2023, 2024).

Empirically, most studies address the role of political parties by investigating high-level officers' partisan affiliations (Borges & Coêlho, 2015; Lopez & Silva, 2019; Praça & Lopez, 2018) . They introduce measures to analyse the Ministers' profiles (Borges & Coêlho, 2015), analyse patronage appointments against bureaucratic autonomy (Bersch et al., 2016) or estimate the effects of partisan affiliation on appointments (Lopez & Silva, 2019; Praça & Lopez, 2018). The term "patronage" is typically employed in reference to the actions of political parties trying to appoint their partisans to public posts (Albrecht, 2024). These studies point out that public offices are part of the president's "toolbox" as a political strategy to gather support from political parties (Lopez & Silva, 2019; Perlin & Santos, 2019).

[2]This structure changed due to a new presidential decree (1042/2021) approved by Jair Bolsonaro.
[3]In this research, level 7 posts refer to particular high-level positions which are not officially part of the hierarchy.

There is less focus on other political organisations, such as interest groups (Lopes & Vieira, 2020). Some scholars investigated other characteristics of the public bureaucracy, presenting rates related to gender distribution and ties with trade unions or other types of organisations (D'Araújo & Petek, 2018). These revealed that the number of women in managerial posts has increased over time (D'Araújo, 2014; D'Araújo & Petek, 2018), but this number diminishes according to the hierarchical level (Cavalcante & Carvalho, 2017; D'Araújo, 2014). Moreover, women's participation is superior in specific areas (Cavalcante & Carvalho, 2017; Ventura, 2018). However, these studies are mainly descriptive.

Only a few studies address the underrepresentation of women in ministerial and executive bureaucratic roles, but these are limited to specific political roles or domains. While examining ministerial appointments, Palotti and Cavalcante (2019) highlight the strategic political calculations that often disadvantage women in these roles. Likewise, Gitirana and Kreuz (2020) conduct a prosopography of female ministers in Brazil, showing that while women have gained access to high-ranking positions, institutional and political barriers still limit their influence. Belançon (2019) brings a historical analysis of feminist policies and social movements in Brazil. Other works focus on specific domains, such as academia (Siqueira et al., 2016) or the judicial branch (Fragale Filho et al., 2015).

There were a few recent initiatives to examine gender dynamics within the public bureaucracy, such as the special issue from the Brazilian Journal of Civil Service (*Revista do Serviço Público*, 2026). Still, most studies are qualitative or descriptive (e.g., Bussmann & Monteiro, 2026; Guedes et al., 2025). Large-N studies on the impacts of gender on political appointments to other posts within the central government (e.g., directors) are still scarce. Viana and Tokarski (2019) analyse the impacts of gender and race, but they use a survey from 2018.

This paper complements the previous studies by bringing a quantitative analysis of gender and discretionary appointments in the central government, estimating the impacts of gender on appointments to the highest leadership roles at ministerial departments. By focusing on the intersection between gender and political appointments, this study contributes to filling a critical gap in the literature and offers new empirical evidence on the dynamics of representational equity within Brazil's federal bureaucracy.

Data and Research Methods

This article introduces the findings of an unprecedented quantitative study on the public bureaucracy. Brazil has a hybrid system in which public offices are filled through competitive public examinations and discretionary appointments. Between 2011 and 2018, these discretionary positions—known as DAS (*Direção e Assessoramento Superior*)—were organized into six hierarchical levels. Within ministries, levels 1 and 2 correspond to administrative posts, level 3 to coordination roles, level 5 to director positions, and level 6 to heads of Secretariats (Albrecht, 2022). In the dataset used in this study, level 7 refers to special appointments that sit above this formal hierarchy.

The main research technique was probit and logit regression models, which are used when the dependent variable is binary. These models were employed to analyse the odds/probability of being appointed to the highest posts (levels 6 and 7) in the central government. Therefore, the event of interest is "being appointed". The model was expressed according to the following expression:

$$P(\text{Appointed} = 1 \mid X) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}}$$

In the models, the dependent variable (Y) represents the probability of appointment to a high-level position (level 6 or 7). As the number of level-7 posts is relatively small, I combined these positions with level-6 posts[4]. The vector of independent variables (X) includes gender (male), race (white), partisan affiliation (affiliated with a political party), education level, and formal ties to the public service (whether the individual is a career civil servant). The central hypothesis guiding the analysis is that being a man (or self-identifying as male) increases the likelihood of the event of interest—that is, being appointed to a high-echelon position in the federal bureaucracy.

I tested this hypothesis using probit and logit models, applied first to the full dataset and then separately to each presidential administration. The analysis focused on three key points in time: Dilma Rousseff (2011), Michel Temer I (2016), and Michel Temer II (2018). For the models covering the full sample, the unit of analysis was the individual officer. To address the fact that some officers held multiple roles over time and could therefore appear more than once in the dataset, I created a unique identifier for the individual-post dyad. This allowed me to control for repeated observations at the officer/post level. Subsequent models were conducted as cross-sectional snapshots for each administration year, enabling a comparison of patterns in appointments across different political contexts. This approach helps to capture both the overall trends and the specific dynamics of each government period.

Probit and logistic regression were carried out to analyse the impacts of gender on the likelihood of being appointed to a high-level position, with race, ties with public service, partisan affiliation, and education as control variables. Logit regression was chosen as a nonlinear model for binary dependent variables, analysing the probability of an event happening (Stock & Watson, 2020). The analysis was conducted with R (scripts are available on open repositories). The likelihood of being appointed to one of the highest post was calculated through marginal effects (probit) and odds-ratio (logit)[5].

The microdata used in this research was extracted from the Federal Government's Personnel Administration System (SIAPE), a system with information on officers working for the central government and the Superior Electoral Court (same dataset used by Lopez & Silva, 2019). SIAPE provides the names, race (self-stated), gender, ties with civil service, and level of education of officers, whereas the Electoral Court has information on their partisan affiliations. The two datasets were merged into a single database with data from 1999 to 2018. This dataset was provided by the Institute for Applied Economic Research (IPEA) [6].

The dataset includes information on public officers occupying positions at levels 5, 6, and 7 of the federal bureaucracy in May and November of each year between 1999 and 2018. Given this longitudinal structure, the same individual may appear in multiple observations across different time points. This occurs because the unit of analysis is not the individual officer but the

[4]I previously ran tests with levels 5, 6, and 7 separately.

[5]For more details on the coefficients, see the statistical appendix.

[6]I would like to acknowledge the contributions of the Institute for Applied Economic Research (IPEA) for building and sharing the dataset, especially Acir dos Santos Almeida and Felix Lopez, who coordinate relevant projects on the public bureaucracy in Brazil. This dataset cannot be shared with the public, as it contains sensitive information. All the scripts used for the analysis are available in a public repository.

position held at each specific point in time. To avoid issues of autocorrelation and the risk of drawing misleading conclusions from repeated observations of the same individuals, I opted to work with the person as the unit of analysis and cross-sectional "snapshots" of the data. This approach, used in other studies (Ban et al., n.d.; Lopez & Silva, 2019), enables a clearer assessment of the composition of the bureaucracy at distinct political moments, reflecting the characteristics of officeholders at key points during different administrations.

Thus, the unit of analysis for the full dataset is the individual–post dyad, which avoids duplication when someone was appointed more than one time[7]. In addition to the full sample ("dataset_full"), I constructed three separate datasets, each corresponding to a specific political context and time frame:

i. data_rousseff11: A snapshot of all government officers holding levels 5 to 7 positions in November 2011, during the first term of President Dilma Rousseff ($N = 774$).
ii. data_temer16: A snapshot of officeholders in November 2016, reflecting the early period of President Michel Temer's administration following the impeachment ($N = 733$).
iii. data_temer18: A snapshot from November 2018, capturing the composition of the high bureaucracy at the end of Temer's presidency ($N = 817$).

By focusing on these three critical time points, the analysis captures variation across different political contexts while maintaining comparability and minimising potential bias associated with repeated observations of the same individuals over time. I selected the years 2011, 2016, and 2018 for comparison based on both theoretical and practical considerations. Empirical studies on political appointments suggest that most changes in high-level bureaucratic positions occur during the initial years of a new presidential term, as incoming governments typically seek to align the bureaucracy with their policy priorities.

Therefore, 2011 represents the early phase of Dilma Rousseff's first mandate, while 2016 reflects the beginning of Michel Temer's administration following the impeachment process. 2018 was included as it was the most recent data available in the dataset, offering a snapshot of the bureaucracy at the end of Temer's presidency. Moreover, Dilma Rousseff remains the only female president in Brazil's history, making her administration a particularly relevant case for analysis, especially in research that examines the role of gender in elite bureaucratic appointments.

The variables included in the models were:

i) High echelon ("highechelon"): a binary variable indicating if the person holds a level 6 or 7 post, with yes (=1) or no (=0). Brazil's discretionary system has six levels for public offices. The fifth usually refers to the post of director. The sixth refers to the position of the Secretary, who controls the departments in the ministries. An extra level (7) refers to special positions, such as Junior Ministers. There is no consensus on how to classify high-echelon bureaucrats in Brazil. Some scholars classify DAS-5 positions as part of the mid-level bureaucracy (Cavalcante et al., 2018), while others consider them to be high-ranking posts (Lopez & Silva, 2019). For the purposes of this article, the statistical models focused on the highest

[7]This coding strategy may entail some information loss, as posts are distinguished only by hierarchical level (5, 6, or 7). Consequently, multiple appointments of the same individual to level-5 posts are collapsed into a single observation. Despite this limitation, the approach remains appropriate for the purposes of this analysis. The research focuses on access to and circulation within hierarchical levels of the public bureaucracy rather than on specific organisational units or job functions. Collapsing multiple appointments at the same hierarchical level into a single observation therefore does not affect the core analytical objective, which is to capture individuals' presence at a given level of authority. Moreover, this strategy reduces duplication and avoids over-representing individuals with multiple appointments at the same level, thereby producing more conservative and robust estimates.

positions in the federal bureaucracy, corresponding to DAS levels 6 and 7 while the article also presents some descriptive statistics on all high-level posts (from 5 to 7).

ii) Gender ("gender"): a binary variable indicating if the person is male (=1) or female (=0)
iii) Race ("race"): a binary variable indicating if the person is white (=1) or non-white (=0)
iv) Situation ("career"): a binary variable indicating if the person is a career civil servant (=1) or not (=0). This variable indicates if the person has formal ties with the public sector or is an outsider.
v) Partisan affiliation ("party") is a binary variable indicating whether a person is affiliated with a political party (=1) or not (=0).
vi) Education ("edu"): a three-factor variable with the categories 'Primary School' (=1), 'Secondary School' (=2), and 'Higher Education' (=3).

This study has some limitations. First, the variables used for sex and race serve only as proxies for the broader concepts of gender and ethnicity. In the Brazilian context, race is self-reported and often reflects how individuals perceive their own racial identity, while gender is typically inferred from biological sex as recorded in official documents. Secondly, the sample is restricted to public officers already appointed to high-level positions (levels 5, 6, and 7), which limits generalisability to the broader civil service. Nevertheless, statistical analysis remains feasible and meaningful, as this dataset represents a talent pool from which most high-echelon appointments are drawn. Despite these constraints, the research offers important insights into the role of gender and political parties in shaping appointment patterns, as well as highlighting differences across hierarchical levels within the bureaucracy.

The code in R used for this research was developed with the assistance of GPT 5. It was constantly reassessed and tested by the researcher. All the scripts are available in a public repository. The statistical appendix provides more details on the models.

Analysis and Discussion

The Brazilian civil service system (brief contextualisation)

In Brazil, there are two main entry routes into the public service: competitive public examinations (known as "*concurso público*" in Portuguese) and discretionary appointments. DAS positions (*Direção e Assessoramento Superior* – Senior Management and Advisory Positions) are open to any individual, regardless of whether they already belong to the civil service or come from outside government careers. In contrast, FCPE roles (*Funções Comissionadas do Poder Executivo* – Commissioned Functions of the Executive Branch) are reserved exclusively for career civil servants, that is, individuals who entered the public service through competitive examinations (Albrecht, 2022).

The DAS posts are officially divided into six levels. The first two levels (DAS 1 and 2) are primarily administrative roles. The intermediate levels (DAS 3 and 4) are coordination positions, typically involving managerial responsibilities. The top two levels (DAS 5 and 6) correspond to senior posts with greater political influence—usually held by directors and secretariat heads. Additionally, the database includes a seventh level (DAS 7), which refers to special high-ranking positions within the administrative hierarchy, such as junior ministers. The databases used in this study contain information on DAS levels 5 to 7, which represent the upper echelons of the

Brazilian public bureaucracy. The analysis focuses exclusively on the national (central) government.

This dual structure of entry routes and diverse career streams reflects Brazil's hybrid civil service system, which combines elements of merit-based recruitment with spaces for political discretion in appointments, especially at higher managerial levels. The research literature focuses on the DAS posts, as these are discretionary roles – anyone can be appointed by the authorities. Previous studies focus on partisan affiliation of government officers as a proxy for politicisation (Borges & Coêlho, 2015; Lopez & Silva, 2019) and the evolution of the rules regarding these appointments (Albrecht, 2022). Although some studies mention gender (Belançon, 2018; Gitirana & Kreuz, 2020), there is no systematic analysis of the impacts of gender and race on discretionary appointments. The analysis presented here fills this gap by evaluating the statistical significance of these variables and their impacts on appointments.

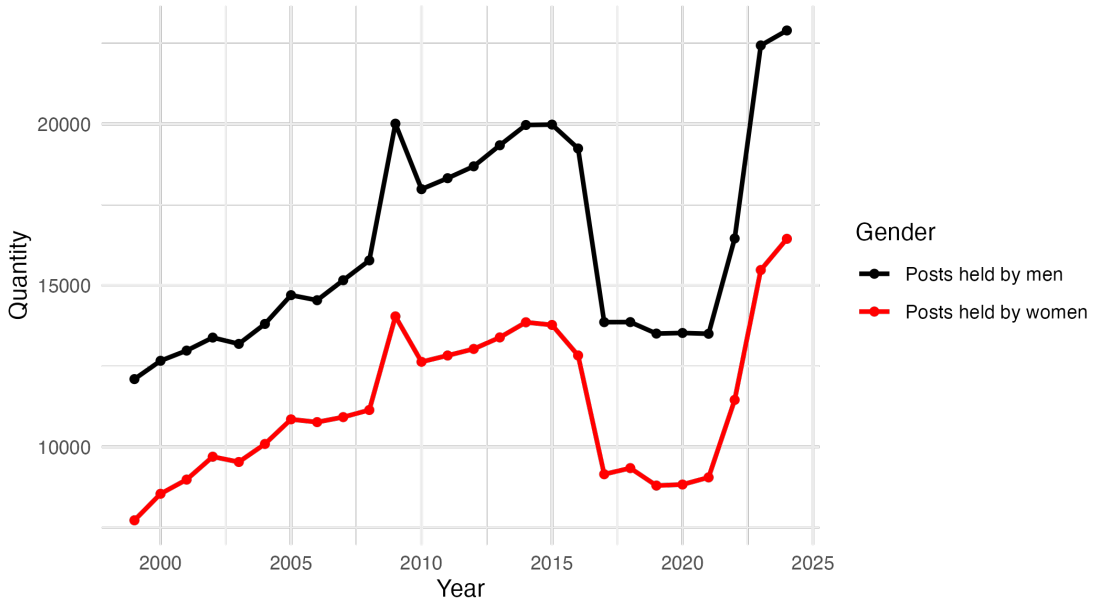
Descriptive statistics

Before presenting the results of the statistical models, it is important to first examine the database through descriptive statistics. Recent research highlights a notable increase in the representation of women in managerial positions within the Brazilian central government (D'Araújo & Petek, 2018). However, this increase in female representation has not been linear across the main categories of managerial posts. The data for this section comes from the *Atlas do Estado Brasileiro*, produced by IPEA, which provides the number of positions occupied by men and women across different managerial levels.

As shown in Figure 2, over the past two decades, the trends in appointments for both men and women have followed similar trajectories, reflecting broader shifts in the composition of the federal bureaucracy.

Figure 2

Discretionary posts (5, 6, 7) held by women and men by year (line graph)

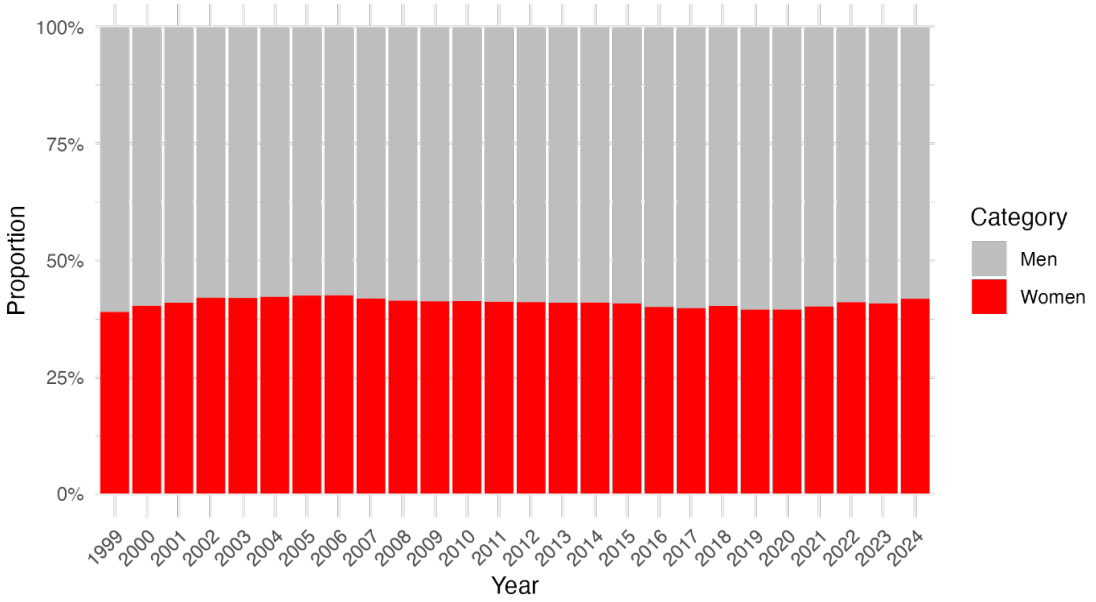


Note. Source: IPEA (*Atlas do Estado Brasileiro*).

Previous research (D'Araújo, 2014; D'Araújo & Petek, 2018) has pointed that the number of women holding top-level positions have increased over the years. However, the proportion of women holding posts was low the entire period. The bar graph in Figure 3 shows that the proportion of women in managerial positions fluctuated between 1999 and 2024, with a slight increase observed from 1999 to 2006. Throughout the entire period, women consistently held less than 50% of these posts.

Figure 3

Discretionary posts (5, 6, 7) held by women and men by year (proportion)



Note. Source: IPEA (*Atlas do Estado Brasileiro*).

Overall, the data reveal increases in the total number of discretionary posts (DAS 5 to 7) over the past two decades. However, despite this overall growth, the gender distribution remained imbalanced. As shown in Figure 2, the proportion of women in these positions has fluctuated over time, showing modest increases in certain periods—such as between 1999 and 2006 and more recently (2022-2025)—but consistently remaining below the 50% threshold throughout the entire period from 1999 to 2024.

The increase observed by the research literature (D'Araújo, 2014; D'Araújo & Petek, 2018) might result from a broader increase in the quantity of posts. The following sections examine whether gender has a statistically significant effect on the likelihood of holding a discretionary post, using regression models that control for additional individual characteristics.

Regression analysis

The models employed in this analysis included the following independent variables: gender, race, education, partisan affiliation, and career status (whether the individual is a career civil servant). The main variable is gender while the others are control variables. These variables are commonly used in the research literature as proxies for levels of politicisation and professionalisation within the bureaucracy (e.g., Lopez & Silva, 2019, for partisanship). Tables 1 and 2 present the results of probit and logit models applied to the highest posts (6–7). The analysis

uses the full dataset covering the period from 1999 to 2018, with the individual-post dyad as the unit of analysis ($N = 5{,}640$).

Table 1
Probit and logit models – Levels 6–7 positions (full dataset)

	Dependent variable:	
	Appointed to Level 6 or 7	
	probit	*logistic*
	Probit	Logit
	(1)	(2)
Man	0.247***	0.425***
	(0.045)	(0.079)
White	0.047	0.082
	(0.051)	(0.087)
Edu2	−0.057	−0.099
	(0.310)	(0.514)
Edu3	−0.028	−0.054
	(0.298)	(0.495)
Party	0.272***	0.453***
	(0.052)	(0.086)
Career	−0.204***	−0.347***
	(0.039)	(0.067)
Constant	−0.844***	−1.390***
	(0.302)	(0.503)
Observations	5,100	5,100
Log likelihood	−2,769.339	−2,769.483
Akaike inf. crit.	5,552.678	5,552.967

Note. Source: dataset_full (unit of analysis: individual-post dyad), $N = 5{,}640$. $^{*}p < .10$. $^{**}p < .05$. $^{***}p < .01$.

Both the probit and logit models confirm that being a man significantly increases the likelihood of appointment to a high-echelon post. In both models, gender, party affiliation, and career background emerge as statistically significant factors at a significance level of 0.001 (99% confidence). Specifically, being male and a partisan are positively associated with the probability of appointment, while having a formal career in the civil service shows a negative relationship. This suggests that most individuals appointed to senior discretionary positions come from outside the permanent bureaucracy, reinforcing findings from previous studies (Lopez & Silva, 2019).

In this sense, Lopez and Silva (2019) argue that the number of partisans increased during the Workers' Party mandate and is higher among professionals who do not have formal ties with civil service. They also highlight that the quantity of partisans is relatively low among appointees. They do not mention gender or race, limiting their analysis to partisan politics.

According to the probit model—based on the analysis of marginal effects (see Statistical Appendix)—being a man increases the probability of appointment by 7.5 percentage points, a result comparable to the effect of party affiliation (8.3 percentage points). The logit models show even stronger effects: being male increases the odds of appointment by 52%, while party affiliation increases the odds by 57%.

Overall, the models yielded results largely consistent with expectations regarding the statistical significance of gender. However, when the analysis was disaggregated by presidential mandate, some unexpected patterns emerged. As shown in Tables 2, 3, and 4, being male was statistically significant only during the Rousseff administration—and notably at the 1% significance level, with an unexpected positive coefficient (with "man" as the reference). In contrast, gender was statistically insignificant during the first Temer administration (2016). By 2018, gender became statistically significant again, this time at the 5% level. In 2016 and 2018, career background and party affiliation remained consistent and significant predictors of appointments.

Table 2

Probit and logit models – Levels 6–7 positions (Rousseff, 2011)

	Dependent variable:	
	Appointed to Level 6 or 7	
	probit	*logistic*
	Probit	Logit
	(1)	(2)
Man	0.348***	0.612***
	(0.120)	(0.216)
White	0.112	0.199
	(0.144)	(0.255)
Edu2	−0.282	−0.470
	(0.735)	(1.262)
Edu3	−0.166	−0.233
	(0.687)	(1.175)
Party	0.255*	0.432**
	(0.130)	(0.220)
Career	−0.129	−0.226
	(0.107)	(0.185)
Constant	−0.942	−1.627
	(0.699)	(1.198)
Observations	743	743
Log likelihood	−379.541	−379.544
Akaike inf. crit.	773.083	773.089

Note. Source: data_rousseff11 ($N = 774$). $^{*}p < .10$. $^{**}p < .05$. $^{***}p < .01$.

Tables 3 and 4 introduce the results of probit and logit models estimating the odds of being appointed to the highest posts during Temer administrations (2016 and 2018). Career and party affiliation are the most significant predictors. Having a civil service background (i.e., ties to the public sector) decreases the likelihood of appointment, whereas partisan affiliation increases it. These findings are consistent with previous research, which suggests that lacking ties to the public sector—being an "outsider"—combined with strong political connections, increases the odds of being appointed to the highest posts (Lopez & Silva, 2019).

However, gender was unexpectedly insignificant in 2016 and significant at the 5% significance level in 2018.

Based on the analysis of marginal effects from the probit model using the 2018 data (see Statistical Appendix), being male increases the probability of appointment by 7.9 percentage

Table 3
Probit and logit models – Levels 6–7 positions (Temer, 2016)

	Dependent variable:	
	Appointed to Level 6 or 7	
	probit	*logistic*
	Probit	Logit
	(1)	(2)
Man	0.049	0.071
	(0.129)	(0.225)
White	0.074	0.140
	(0.150)	(0.266)
Edu2	3.799	11.886
	(146.954)	(535.411)
Edu3	4.137	12.448
	(146.954)	(535.411)
Party	0.492^{***}	0.822^{***}
	(0.137)	(0.228)
Career	-0.377^{***}	-0.656^{***}
	(0.113)	(0.197)
Constant	−4.943	−13.777
	(146.954)	(535.411)
Observations	696	696
Log likelihood	−340.452	−340.596
Akaike inf. crit.	694.904	695.192

Note. Source: data_temer16 ($N = 733$). $^{*}p < .10$. $^{**}p < .05$. $^{***}p < .01$.

points, while partisan affiliation increases it by 10.1 percentage points. In contrast, having a civil service career background decreases the probability by 6.9 percentage points. The logit model (odds ratios) yields similar patterns: being male increases the odds of appointment by 67%, partisan affiliation increases the odds by 87%, and a civil service background reduces the odds by 36%. Therefore, we can conclude that partisan affiliation was particularly relevant during Temer administrations. However, it is still surprising that being a male played a more important role in Rousseff's first mandate.

These results highlight the need for a closer examination of the data from the Rousseff and Temer administrations. Figures 4 and 5 illustrate the proportion of women holding posts at each level during the Rousseff administration (2011) and the Temer administration (2016), respectively.

The proportion of women holding level 5 and 6 positions was higher during the Rousseff administration. However, somewhat unexpectedly, the proportion of women in level 7 positions was greater during the Temer administration. These findings may help explain why gender was statistically significant during the Rousseff administration, with men still having a higher likelihood of being appointed to these positions in the probit and logit models using 2011 data. This does not imply that having a female leader is irrelevant for advancing gender equality; however, it does highlight that female leadership alone does not guarantee an increased presence of women in top-level posts.

Table 4

Probit and logit models – Levels 6–7 positions (Temer, 2018)

	Dependent variable:	
	Appointed to Level 6 or 7	
	probit	*logistic*
	Probit	Logit
	(1)	(2)
Man	0.296**	0.516**
	(0.123)	(0.222)
White	0.140	0.264
	(0.130)	(0.233)
Edu2	−1.200	−2.078
	(0.945)	(1.558)
Edu3	−0.463	−0.740
	(0.896)	(1.440)
Party	0.375***	0.628***
	(0.134)	(0.226)
Career	−0.256**	−0.446**
	(0.107)	(0.187)
Constant	−0.623	−1.095
	(0.912)	(1.472)
Observations	790	790
Log likelihood	−380.822	−380.952
Akaike inf. crit.	775.643	775.903

Note. Source: data_temer18 ($N = 817$). $^{*}p < .10$. $^{**}p < .05$. $^{***}p < .01$.

Figure 4

Proportion of women holding posts (DAS 5, 6, and 7) by level – Rousseff (2011)

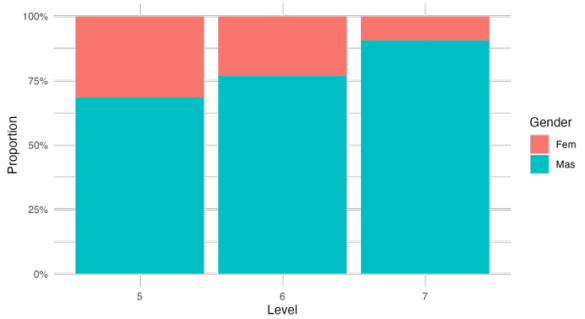
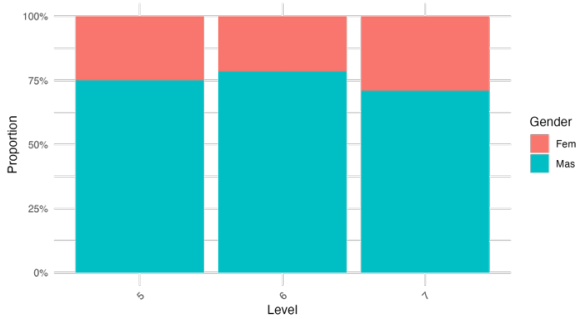


Figure 5

Proportion of women holding posts (DAS 5, 6, and 7) by level – Temer (2016)



Note. Sources: data_rousseff11 and data_temer16.

It is important to interpret these results with caution. The analysis of race remains inconclusive due to substantial missing data, which poses challenges for robust statistical inference. Moreover, because race in Brazil is self-declared, there are potential issues with data accuracy and consistency. This is a limitation that warrants greater attention in future research. In addition, the database has only information on appointees to levels 5 to 7 posts. Ideally, there would be a database with a random sample of the population, but this is impractical.

Nonetheless, the results from the models based on the full dataset remain valid and reinforce key findings from the literature: party affiliation and career background are consistently significant variables influencing appointments, but gender emerges as an equally relevant factor. Gender demonstrated an effect comparable in magnitude to that of political party affiliation. Therefore, the study reinforces the relevance of further analysing the "glass ceiling" in the public sector.

Women might face similar challenges in the private and public sectors. However, public administration implies additional challenges as it is intricated with politics – particularly in discretionary appointments. Brazil's institutional framework leads to complex negotiations between presidents and political parties (Abranches, 1988, 2018; Lopez & Silva, 2019; Perlin & Santos, 2019). One might ask how gender interplays within this dynamic.

While analysing Minister's profiles, Gitirana and Kreuz (2020) point out that the women who are successful in being appointed are a specific group which could accumulate political capital. Which types of political capital and cultural aspects are relevant for discretionary appointments? Coalition presidentialism might be not enough to understand the reasons discretionary appointments, as culture, informal institutions, and personal relations may also play a key role. Hence, this research reveals that there might be other factors in addition to formal institutions.

Final remarks

This study has provided empirical evidence on the interplay between gender and other variables in shaping the composition of Brazil's federal bureaucracy. Complementing previous studies (Bussmann & Monteiro, 2026; D'Araújo, 2014; D'Araújo & Petek, 2018; Guedes et al., 2025), which were mainly descriptive, it provided a quantitative estimation of the impacts of gender on the odds of being appointed to a top-level post within the Brazilian federal bureaucracy.

The findings confirm that gender remains a significant barrier to achieving higher bureaucratic positions overall, and that the presence of women in public administration has not increased as much as pointed out by the research literature (D'Araújo, 2014; D'Araújo & Petek, 2018). According to data on managerial posts, women continue to be underrepresented at the upper levels of bureaucracy, revealing persistent institutional and societal obstacles that hinder gender equality in discretionary appointments. Moreover, the study revealed that gender is as important as political parties although it receives less attention from the research literature on discretionary appointments. This underscores the need for further examination of how political dynamics shape bureaucratic structures and the extent gender interplays with other variables (education, race, partisan affiliation) in recruitment processes.

This research literature is dominated by analytical frameworks developed in the Global North (Albrecht, 2023, 2024), notably presidential studies in the United States (e.g., Lewis, 2011) and studies on political parties and patronage in Europe (Kopecký et al., 2016, 2022). The re-

search literature on Brazil mixes both approaches by analysing the presidential dilemma and negotiation with political parties. It gives too much emphasis to partisan politics whereas overlooking other variables.

Although race and education were not statistically significant in this study, this does not imply their irrelevance. Instead, potential data limitations—such as the lack of disaggregated racial information and the absence of detailed education variables beyond the bachelor's level[8]—may have constrained the analysis. Future research should incorporate more comprehensive datasets to examine these dimensions in greater depth, ensuring a more nuanced understanding of the factors influencing bureaucratic career trajectories. Moreover, this research has not examined interactions between variables. Future studies could conduct a more in-depth analysis of interaction effects, such as the relationship between education and gender or race and gender.

The findings point to the need for policy interventions aimed at promoting gender equality and reducing partisan biases in discretionary appointments within the public bureaucracy. Possible measures include the implementation of gender quotas, the establishment of more transparent selection processes, and mechanisms that prioritise merit-based appointments while fostering greater diversity within the public administration. In addition, mixed-method studies—combined qualitative techniques such as semi-structured interviews and quantitative approaches—could provide deeper insights into the recruitment processes and informal barriers that may hinder women's advancement within public administration, i.e., the "glass ceiling" in the public sector.

Finally, this study underscores the importance of expanding research on public administration in the Global South. The field remains largely dominated by studies focused on the United States and European contexts, often overlooking the unique institutional, political, and cultural dynamics of developing democracies. A research agenda that is more attuned to the specificities of Brazil and similar contexts is essential for advancing a more comprehensive understanding of bureaucratic representation. For instance, systematic studies focusing on informal institutions are notably limited.

By shedding light on the complexities surrounding gender and discretionary appointments in Brazil, this study lays the groundwork for further investigations into how these dynamics impact broader governance and policymaking processes. Future research should continue to examine the intersection of gender, race, education, and partisan affiliation, ensuring that bureaucratic structures evolve towards greater equity, inclusivity, and democratic legitimacy.

Data Availability Statement

The data that support the findings of this study are available from the Institute of Applied Economic Research (IPEA). Restrictions apply to the availability of these data, which were used under license for this study. Data are available from the authors with the permission of IPEA.

References

Abranches, S. H. H. (1988). Presidencialismo de coalizão: O dilema institucional brasileiro. *Dados: Revista de Ciências Sociais*, *31*(1).

[8]There is not enough information about master and PhD degrees in this database; this results in less variation for the variable "education".

Abranches, S. H. H. (2018). *Presidencialismo de coalizão: Raízes e evolução do modelo político brasileiro*. Companhia das Letras.

Albrecht, N. F. M. de M. (2022). Distribuição de cargos, contexto político e presidencialismo brasileiro: Uma análise institucional do sistema de livre provimento. *Opinião Pública*, *28*, 828–856.

Albrecht, N. F. M. de M. (2023). Bureaucrats, interest groups and policymaking: A comprehensive overview from the turn of the century. *Humanities and Social Sciences Communications*, *10*, 1–10. https://doi.org/10.1057/s41599-023-02044-8

Albrecht, N. F. M. de M. (2024). Parties are not the only patrons: Towards a new typology of patronage. *Brazilian Political Science Review*, *18*(3). https://doi.org/10.1590/1981-3821202400030001

Ban, P., et al. (n.d.). *Bureaucrats in Congress: The politics of interbranch information sharing*.

Belançon, M. C. (2018). A participação de feministas na burocracia estatal: Dinâmica e efeitos. *Revista Eletrônica de Ciência Política*, *9*, 36–51.

Belançon, M. C. (2019). Feminismo de Estado pós 2016: O contexto importa? *MovimentAção*, *6*(10), 31–44. https://doi.org/10.30612/mvt.v6i10.10569

Bersch, K., Praça, S., & Taylor, M. (2016). State capacity, bureaucratic politicization, and corruption in the Brazilian state. *Governance*, *30*(1). https://doi.org/10.1111/gove.12196

Borges, A., & Coêlho, D. B. (2015). O preenchimento de cargos da burocracia pública federal no presidencialismo de coalizão brasileiro: Análise comparada de dois ministérios – Ciência e Tecnologia e Integração Nacional. In F. G. Lopez (Ed.), *Cargos de confiança no presidencialismo de coalizão brasileiro*. IPEA.

Bussmann, T. B., & Monteiro, W. F. (2026). Desigualdade de gênero no governo federal: Análise geral em cargos de liderança. *Revista do Serviço Público*, *76*(Especial C). https://doi.org/10.21874/rsp.v76ic.11067

Cavalcante, P., & Carvalho, P. (2017). Profissionalização da burocracia federal brasileira (1995–2014): Avanços e dilemas [The professionalization of Brazilian federal bureaucracy (1995–2014): Advances and dilemmas]. *Revista de Administração Pública*, *51*(1), 1–26. https://doi.org/10.1590/0034-7612144002

Cavalcante, P. L., Lotta, G. S., & Yamada, E. M. (2018). Exploring mid-level bureaucracy: A tentative typology. *Revista Brasileira de Ciência Política*, (26). https://periodicos.unb.br/index.php/rbcp/article/view/18911

D'Araújo, M. C. S. (2014). Elites burocráticas, dirigentes públicos e política no Poder Executivo. In M. C. S. D'Araújo (Ed.), *Redemocratização e mudança social no Brasil* (pp. 205–229). FGV.

D'Araújo, M. C. S., & Petek, J. (2018). Recrutamento e perfil dos dirigentes públicos brasileiros nas áreas econômicas e sociais entre 1995 e 2012. *Revista de Administração Pública*, *52*(5), 840–862. https://doi.org/10.1590/0034-761220170111

D'Araújo, M. C. S., & Ribeiro, G. L. (2018). Trajetória socioeducacional dos ministros brasileiros na Nova República (1985–2014). *Revista de Sociologia e Política*, *26*(65), 39–61. https://doi.org/10.1590/1678-987317266503

Fragale Filho, R., Moreira, R. S., & Sciammarella, A. P. de O. (2015). Magistratura e gênero: Um olhar sobre as mulheres nas cúpulas do judiciário brasileiro [Courts and gender: An overview of the women on the top of Brazilian judicial system]. *e-cadernos CES*, (24). https://doi.org/10.4000/eces.1968

Franceschet, S., Krook, M. L., & Piscopo, J. M. (Eds.). (2012). *The impact of gender quotas*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199830091.001.0001

Franceschet, S., Piscopo, J. M., & Thomas, G. (2016). Supermadres, maternal legacies and women's political participation in contemporary Latin America. *Journal of Latin American Studies*, *48*(1), 1–32. https://doi.org/10.1017/S0022216X15000814

Gitirana, J. H. S., & Kreuz, L. R. C. (2020). Ministras de Estado: Uma análise prosopográfica das mulheres nos cargos máximos da República de 1985 a 2019. *Revista da Faculdade de Direito da UFRGS*, (43), 245–266. https://doi.org/10.22456/0104-6594.94386

Guedes, D. R., Passos, L., Silva, J. S., & Gorayeb, D. S. (2025, May 6–9). *Burocracia não representativa: Assimetria de gênero e raça nas lideranças da Administração Pública Federal* [Paper presentation]. International Meeting of Democratic Participation and Public Policy, Brasília, DF, Brazil.

Hessami, Z., & Fonseca, M. L. da. (2020). Female political representation and substantive effects on policies: A literature review. *European Journal of Political Economy*, *63*, Article 101896. https://doi.org/10.1016/j.ejpoleco.2020.101896

Hinojosa, M. (2021). The descriptive representation of women in politics. In *Oxford research encyclopedia of politics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228637.013.1978

Kennedy, A. R., Bishu, S. G., & Heckler, N. (2020). Feminism, masculinity, and active representation: A gender analysis of representative bureaucracy. *Administration & Society*, *52*(7), 1101–1130. https://doi.org/10.1177/0095399719888470

Kennedy, B., Bishu, S., & Kennedy, A. (2025). Expanding the boundaries of representative bureaucracy. *American Review of Public Administration*. https://doi.org/10.1177/02750740241309902

Kopecký, P., Meyer-Sahling, J.-H., Panizza, F., Scherlis, G., Schuster, C., & Spirova, M. (2016). Party patronage in contemporary democracies: Results from an expert survey in 22 countries from five regions. *European Journal of Political Research*, *55*(2), 416–431.

Kopecký, P., Meyer-Sahling, J.-H., & Spirova, M. (2022). (Extreme) political polarization and party patronage. *Irish Political Studies*, *37*(2), 218–243.

Lewis, D. E. (2011). Presidential appointments and personnel. *Annual Review of Political Science*, *14*, 47–66.

Lopes, A. V., & Vieira, D. M. (2020). Nomeações para cargos comissionados e grupos de interesse: Usos, motivações e desafios retratados em pesquisas recentes. *Revista Eletrônica de Administração* (*READ*), *26*(2), 439–462.

Lopez, F. G., & Silva, T. M. da. (2019). Party filiation and appointment for positions in the Brazilian federal bureaucracy (1999–2018). *Revista de Administração Pública*, *53*(4), 711–731. https://doi.org/10.1590/0034-761220180387x

Mendelberg, T., Karpowitz, C. F., & Goedert, N. (2014). Does descriptive representation facilitate women's distinctive voice? How gender composition and decision rules affect deliberation. *American Journal of Political Science*, *58*(2), 291–306. https://doi.org/10.1111/ajps.12077

Palotti, P. L. de M., & Cavalcante, P. L. C. (2019). Estratégias de nomeações ministeriais: Entre a política e as políticas públicas. *Revista de Sociologia e Política*, *27*(70). https://doi.org/10.1590/1678987319277001

Paxton, P., & Hughes, M. (2014). *Women, politics, and power: A global perspective*. SAGE.

Perlin, G., & Santos, M. L. (2019). *Presidencialismo de coalizão em movimento*. Edições Câmara.

Pitkin, H. F. (1967). *The concept of representation*. University of California Press.

Praça, S., & Lopez, F. (2018). Political appointments, political parties, and bureaucracy. In *Routledge handbook of Brazilian politics*. Routledge. https://doi.org/10.4324/9781315543871-21

Purcell, D., MacArthur, K., & Samblanet, S. (2010). Gender and the glass ceiling at work. *Sociology Compass*, *4*(9), 705–717. https://doi.org/10.1111/j.1751-9020.2010.00304.x

Siqueira, R. F. B. de, et al. (2016). A presença de docentes mulheres em cargos gerenciais nas universidades federais do estado de Minas Gerais. *Revista Gestão Universitária na América Latina (GUAL)*, 49–69. https://doi.org/10.5007/1983-4535.2016v9n2p49

Stock, J. H., & Watson, M. (2020). *Introduction to econometrics*. Pearson Education.

Taparia, M., & Lenka, U. (2022). An integrated conceptual framework of the glass ceiling effect. *Journal of Organizational Effectiveness: People and Performance*, *9*(3), 372–400. https://doi.org/10.1108/JOEPP-06-2020-0098

Taylor-Robinson, M., & Geva, N. (2023). *The image of gender and political leadership: A multinational view of women and leadership*. Oxford University Press.

Ventura, O. (2018). A distribuição de capitais entre a mão esquerda e a mão direita da burocracia brasileira. *Revista de Sociologia e Política*, *26*(67), 107–128.

Viana, R. R., & Tokarski, C. P. (2019). Burocracia representativa: Uma (re)produção de desigualdades de gênero e raça no setor público federal? *NAU Social*, *10*(19). https://doi.org/10.9771/ns.v10i19.33968

Statistical Appendix

Table A1

Full dataset

	Probit	Logit
Deviance residuals, Min	−0.9949	−1.0011
Deviance residuals, 1Q	−0.8110	−0.8073
Deviance residuals, Median	−0.6996	−0.6994
Deviance residuals, 3Q	−0.5512	−0.5556
Deviance residuals, Max	2.0029	1.9919
Null deviance (df)	5627.9 (5099)	5627.9 (5099)
Residual deviance (df)	5538.7 (5093)	5539.0 (5093)
Observations deleted due to missingness	540	540
AIC	5552.7	5553
Fisher scoring iterations	4	4
	Marginal effects	**Odds ratios**
(Intercept)	–	0.2491596
male	0.07549	1.5292867
white	0.01453	1.0855254
party	0.08323	1.5729392
career	−0.06236	0.7068652
edu2	−0.01748	0.9055349
edu3	−0.008679	0.9476238

Note. Source: dataset_full.

Table A2

Rousseff 2011

	Probit	Logit
Deviance residuals, Min	−0.9233	−0.9291
Deviance residuals, 1Q	−0.7117	−0.7104
Deviance residuals, Median	−0.6529	−0.6478
Deviance residuals, 3Q	−0.5283	−0.5312
Deviance residuals, Max	2.2053	2.1985
Null deviance (df)	774.13 (742)	774.13 (742)
Residual deviance (df)	759.08 (736)	759.09 (736)
Observations deleted due to missingness	31	31
AIC	773.08	773.09
Fisher scoring iterations	4	4
	Marginal effects	Odds ratios
(Intercept)	–	0.1964902
male	0.09986	1.8435707
white	0.03206	1.2204854
party	0.07295	1.5406702
career	−0.03699	0.7976302
edu2	−0.08256	0.6250638
edu3	−0.05052	0.7922920

Note. Source: data_rousseff11.

Table A3

Temer 2016

	Probit	Logit
Deviance residuals, Min	−1.0510	−1.0544
Deviance residuals, 1Q	−0.7541	−0.7521
Deviance residuals, Median	−0.5589	−0.5598
Deviance residuals, 3Q	−0.5243	−0.5245
Deviance residuals, Max	2.3030	2.2613
Null deviance (df)	712.34 (695)	712.34 (695)
Residual deviance (df)	680.90 (689)	681.19 (689)
Observations deleted due to missingness	37	37
AIC	694.9	695.19
Fisher scoring iterations	12	12
	Marginal effects	Odds ratios
(Intercept)	–	0.000001039139
male	0.01347	1.073643937190
white	0.02027	1.150266215209
party	0.1345	2.274670461035
career	−0.1033	0.518938774765
edu2	0.1313	145215.775506720471
edu3	0.2123	254712.731354273245

Note. Source: data_temer16.

Table A4

Temer 2018

	Probit	Logit
Deviance residuals, Min	−1.0531	−1.0473
Deviance residuals, 1Q	−0.6752	−0.6673
Deviance residuals, Median	−0.6143	−0.6146
Deviance residuals, 3Q	−0.4335	−0.4411
Deviance residuals, Max	2.5651	2.5084
Null deviance (df)	790.64 (789)	790.64 (789)
Residual deviance (df)	761.64 (783)	761.90 (783)
Observations deleted due to missingness	27	27
AIC	775.64	775.9
Fisher scoring iterations	4	5
	Marginal effects	Odds ratios
(Intercept)	–	0.3345805
male	0.07975	1.6760885
white	0.03767	1.3027185
party	0.101	1.8737154
career	−0.06901	0.6402992
edu2	−0.2928	0.1251966
edu3	−0.149	0.4769599

Note. Source: data_temer18.