Job satisfaction among brazilian federal public servants: a multivariate application of the job satisfaction scale

Satisfacción en el trabajo entre los servidores públicos federales brasileños: una aplicación multivariada de la escala de satisfacción en el trabajo

Satisfação no trabalho entre servidores públicos federais brasileiros: uma aplicação multivariada da escala de satisfação no trabalho

Carlos André Corrêa de Mattos
Universidade Federal do Pará
cacmattos@gmail.com
https://orcid.org/0000-0002-3027-7479

Daniel Barbosa Cabral
Universidade Federal da Amazônia
danicabral@msn.com
https://orcid.org/0000-0002-4978-9917

Amanda Martins Lima
Universidade Federal do Pará
amandalimam@yahoo.com
https://orcid.org/0000-0002-8654-3983

Dayanne Thayná Oliveira Silva
Universidade Federal do Pará
dayetosilva@gmail.com
https://orcid.org/0000-0001-5545-8922

ABSTRACT

This research aimed to analyze and classify aspects of job satisfaction from the perspective of public servants in Brazil. A questionnaire based on the Job Satisfaction Scale (JSS) was used to collect data from a statistically significant sample composed of 139 employees of a Brazilian public higher education institution. Data were analyzed using a combination of descriptive, correlational, and multivariate statistical techniques, hypothesis testing, and cluster analysis. The psychometric quality of the scale (one-dimensionality, convergent, and discriminant validity) was examined using exploratory factor analysis (EFA), complemented by reliability measures (Cronbach's alpha coefficient and Composite Reliability). The results

of this study converged with other studies that assess the Job Satisfaction Scale (JSS) as valid, stable, and of good psychometric quality. Among the dimensions of the JSS, co-workers, managers, and the nature of work stood out as strengths in labor relations, and promotions and remuneration, as weaknesses. These results reflect the differences and imbalances in the various careers in public administration, especially about recognition for the work performed.

Keywords: Job satisfaction, public administration, public servants, human resource management, Brazil

RESUMEN

Esta investigación tuvo como objetivo analizar y clasificar aspectos de la satisfacción laboral desde la perspectiva de los servidores públicos en Brasil. Se utilizó un cuestionario basado en la Escala de Satisfacción en el Trabajo (JSS) para recolectar datos de una muestra estadísticamente significativa compuesta por 139 empleados de una institución pública de educación superior brasileña. Los datos se analizaron utilizando una combinación de técnicas estadísticas descriptivas, correlacionales y multivariadas, pruebas de hipótesis y análisis de conglomerados. La calidad psicométrica de la escala (unidimensionalidad, validez convergente y discriminante) se examinó mediante análisis factorial exploratorio (AFE), complementado con medidas de confiabilidad (coeficiente alfa de Cronbach y confiabilidad compuesta). Los resultados de este estudio confluyeron con otros estudios que evalúan la Escala de Satisfacción Laboral (JSS) como válida, estable y de buena calidad psicométrica. Entre las dimensiones de la JSS, los compañeros de trabajo, los jefes y la naturaleza del trabajo se destacaron como fortalezas en las relaciones laborales, y las promociones y remuneraciones, como debilidades. Estos resultados reflejan las diferencias y desequilibrios en las distintas carreras de la administración pública, especialmente en cuanto al reconocimiento por el trabajo realizado.

Palabras clave: *Satisfacción laboral, administración pública, servidores públicos, gestión de recursos humanos, Brasil*

RESUMO

Esta pesquisa teve como objetivo analisar e classificar aspectos da satisfação no trabalho na perspectiva de servidores públicos no Brasil. Um questionário baseado na Job

Satisfaction Scale (JSS) foi utilizado para coletar dados de uma amostra estatisticamente significativa composta por 139 funcionários de uma instituição de ensino superior pública brasileira. Os dados foram analisados usando uma combinação de técnicas estatísticas descritivas, correlacionais e multivariadas, teste de hipóteses e análise de cluster. A qualidade psicométrica da escala (validade unidimensional, convergente e discriminante) foi examinada por meio de análise fatorial exploratória (AFE), complementada por medidas de confiabilidade (coeficiente alfa de Cronbach e confiabilidade composta). Os resultados deste estudo convergiram com outros estudos que avaliam a Job Satisfaction Scale (JSS) como válida, estável e de boa qualidade psicométrica. Entre as dimensões do JSS, os colegas de trabalho, os gestores e a natureza do trabalho destacaram-se como pontos fortes nas relações de trabalho e as promoções e remuneração, como pontos fracos. Esses resultados refletem as diferenças e desequilíbrios nas diversas carreiras da administração pública, principalmente no que diz respeito ao reconhecimento pelo trabalho realizado.

Palavras-chave: *Satisfação no trabalho, administração pública, servidores públicos, gestão de recursos humanos, Brasil*

1.   INTRODUCTION

The concern with job satisfaction stands out whenever the organization manages its workforce (Sulistyo & Suhartini, 2019). This happens, according to Reijseger *et al.* (2010), because people are the driving force that sustains organizations towards their goals. Thus, modern organizations value workers who are proactive and involved with their work (Alzyoud, 2018).

In this perspective, although there is no complete and universally accepted concept of job satisfaction (Tepayakul & Rinthaisong, 2018; Urbini *et al.*, 2020), the understanding of a state of mind emerges (Mattos *et al.*, 2017), emotional-affective (Sartono & Ardhani, 2015), which results from personal judgment (Reijseger *et al.*, 2010; Sulistyo & Suhartini, 2019) and expresses a cognitive reaction concerning the employment relationship itself or the employment relationship of third parties (Orgambidez-Ramos *et al.*, 2014; Garg et al., 2018; Tepayakul & Rinthaisong, 2018). Thus, job satisfaction materializes a personal experience or evaluation (Locke, 1969; Ampofo, 2020), which makes it possible to identify: (1) aspects valued by workers and observe (2) the state of satisfaction, indifference, or dissatisfaction with aspects related to work (Sulistyo & Suhartini, 2019).

Job dissatisfaction worries organizations because it strongly contributes to the occurrence of negative manifestations of workers towards the tasks and the organization itself (Orgambidez-Ramos *et al.*, 2014; Sulistyo & Suhartini, 2019) enhancing events considered barriers to organizational results, such as absenteeism, turnover and, stress (Orgambidez-Ramos *et al.*, 2014; Tepayakul & Rinthaisong, 2018; Sulistyo & Suhartini, 2019), that contributing to low performance at work (Reijseger *et al.*, 2010).

However, when there is job satisfaction, behaviors that are valued in the organizational environment are observed, such as motivation, engagement, commitment, organizational citizenship, performance, productivity, among others (Alzyoud, 2018; Tepayakul & Rinthaisong, 2018; Sulistyo & Suhartini, 2019). Therefore, understanding job satisfaction consists, especially, in evaluating energetic and interactive elements that inspire and make it possible to understand that happy workers are, at least a priori, more productive workers (Reijseger *et al.*, 2010), since they manifest bonds stronger with the organizations in which they work (Sartono & Ardhani, 2015). These aspects are reflected in increased customers satisfaction (Garg et al., 2018), better general organizational performance (Lee, 2018), improved business environment, and increased profits (Huang *et al.*, 2016).

On the other hand, contemporary public administration has dedicated efforts to identify conditions that favor the involvement and well-being of public servants to improve the performance of organizations managed by the state, especially in the face of successive reductions in investments and cuts in expenditures that have characterized modern public management (Ancarani *et al.*, 2018). Thus, with different intensities, reductions in public expenditure impact on working conditions and on the careers of public servants, reflecting on job satisfaction.

Considering these aspects, the present study advances in the managerial perspective by proposing improvements in the management of people in the Brazilian public administration. In the theoretical perspective, the study advances by applying the Job Satisfaction Scale (Siqueira, 2008) among federal public servants who work in higher education in the Northern Region of Brazil and, with this, evidence psychometric quality and the adequacy of this scale that is widely used in research in Brazil (Carvalho *et al.*, 2021), mainly due to its adaptation to the national culture (Hora *et al.*, 2018).

The research focused on aspects that are influencing job satisfaction in the Brazilian federal public administration, more specifically among servants of universities located in the Northern Region of Brazil, when answering the question: What is the job satisfaction of

professors and administrative technicians? The objective of the research was to analyze and classify the servants in terms of job satisfaction. Therefore, a descriptive survey was carried out with 139 public servants, using the Job Satisfaction Scale (Siqueira, 2008).

The results were achieved with a combination of statistical techniques and classification of respondents into three groups with intermediate and high intensities of job satisfaction. The most comprehensive results showed that the servers are satisfied with their work and have as strengths of the working relationship: (1) the relationship with co-workers; (2) the performance of managers; and (3) the nature of the tasks performed. Although, as points to be improved: (1) the career; and (2) remuneration. The conclusions recommend further investigations that can guide people management strategies to adjust careers and balance possible compensation distortions in the Brazilian federal administration of teaching, research, and extension institutions.

2. LITERATURE REVIEW

2.1. Job satisfaction and theory of social exchanges

Job satisfaction is essentially a multifaceted construct (Sartono & Ardhani, 2015; Yalabik *et al.*, 2017) that results from workers' personal assessment of the work's contribution to meeting their needs, values, or personal characteristics (Urbini *et al.*, 2020) and for the achievement of what they desire in life (Hoigaard *et al.*, 2012). Job satisfaction can be interpreted as a single construct when a general assessment is needed (Shuck *et al.*, 2021). However, job satisfaction is understood in a multidimensional way (Huang *et al.*, 2016; Sulistyo & Suhartini, 2019), since the worker can express satisfaction with some aspects of the working relationship and dissatisfaction with others (Yalabik *et al.*, 2017; Sulistyo & Suhartini, 2019).

Thus, job satisfaction brings together a wide set of psychological, environmental, and physical conditions that, when combined, influence the personal assessment of the employment relationship (Sartono & Ardhani, 2015) and express a motivational force (Pieters, 2017). This condition highlights the need to monitor different aspects of work and develop plans that reduce ambiguities that limit the ability of workers to perform tasks (Orgambidez-Ramos *et al.*, 2014), meeting the critical aspects for organizational success (Sartono & Ardhani, 2015; Tepayakul & Rinthaisong, 2018) and the interests of workers (Sartono & Ardhani, 2015).

Several studies (Orgambidez-Ramos *et al.*, 2014; Sartono & Ardhani, 2015; Tepayakul & Rinthaisong, 2018) indicate that job satisfaction is a motivational construct that arouses scientific interest and synthesizes intrinsic and extrinsic aspects of the worker's relationship with work (Sartono & Ardhani, 2015; Klein & Mascarenhas, 2016; Garg *et al.*, 2018; Tepayakul & Rinthaisong, 2018).

The intrinsic elements involve internally mediated rewards, such as personal achievements, skills developed, personal recognition, growth, and autonomy at work. On the other hand, the external mediation elements, the extrinsic ones, catalyze aspects related to the supervision of leaders and managers, relationship with colleagues, social status, remuneration, safety at work, people management policies, work environment, among others (Sartono & Ardhani, 2015; Tepayakul & Rinthaisong, 2018). Thus, intrinsic rewards are strongly related to the nature and content of the tasks, and extrinsic rewards go beyond the worker-task relationship and reach aspects of the professional situation itself (Garg *et al.*, 2018; Tepayakul & Rinthaisong, 2018).

Penge and Cerne (2014) highlight that the Social Exchange Theory can help to explain job satisfaction. In this sense, Huang *et al.* (2016), Yalabik *et al.* (2017), Ampofo (2020), and Kaur *et al.* (2020), when dealing with SET, reinforce the perspective of reciprocity in interdependent social relationships. Thus, when workers are valued by organizations, there is a greater possibility of reciprocating in the face of a moral commitment that will result in positivity towards the tasks and towards the organization itself (Kaur *et al.*, 2020). In this way, over time and the succession of successful experiences, bonds of trust and retribution will be strengthened, translating into engagement and job satisfaction (Almeida *et al.*, 2020). In this perspective, Ismael & Yesiltas (2020, p. 221) state that "*the concept of reciprocity suggests that workers are obligated to pay for the company's beneficial activities*".

Huang et al. (2016) emphasize that the Social Exchange Theory characterizes a "*quid pro quo*" relationship, in which the good promotes the good and negativity reproduces indifference and lack of commitment. This perspective allows us to understand that, when making efforts to perform tasks, workers expect rewards from organizations (Ampofo, 2020), which can occur in different ways, including training, support, promotions, bonuses, benefits, among others (Yalabik *et al.*, 2017; Ampofo, 2020). In view of this, relationships are constituted from the perspective of voluntary and implicit mechanisms that favor the maintenance of a reciprocal balance of mutually rewarding exchanges (Kaur *et al*., 2020;

Urbini *et al.*, 2020). Almeida *et al.* (2020) reinforce that the understanding of Social Exchange Theory is structured on the subjective analysis of the cost-benefit ratio compared to the available alternatives and the efforts undertaken.

However, there is no obligation, guarantee, or proportionality in remuneration, an aspect that partly explains the behavior of the worker who leaves the organization soon after having participated in expensive qualification training and/or the one who is passed over in the selection for promotion to higher positions in the organizational hierarchy, even though success in an important project for the organization (Ampofo, 2020). Therefore, to increase the possibility of reciprocity, it must be understood that the benefits offered need to be valued and recognized as such by those who receive them. Thus, it is possible to achieve more satisfactory results both to obtain and maintain reciprocity (Yalabik *et al.*, 2017).

2.2. Job Satisfaction in Public Administration and Education

Job satisfaction is a construct associated with personal, environmental, and organizational aspects (Pieters, 2017). In this way, Homberg *et al.* (2015), when dealing with job satisfaction in public administration, reinforce that motivation is a predictor of job satisfaction, and Kjeldsen & Hansen (2018) complement by highlighting the need to understand aspects related to job satisfaction. the satisfaction of public servants, given that society expects quality services, in addition to having peculiarities that distinguish public administration from private administration, especially about cognitive conditions of work, such as pro-society behavior and loyalty to the public interest, aspects that reinforce the significance of the work and suggest that public servants are strongly motivated by intrinsic aspects (Klein and Mascarenhas, 2016).

On the other hand, Lee (2018) points out that the high emotional demands that result from greater contact with the public can increase personal exhaustion and promote dissatisfaction with work and, with this, compromise, in addition to the quality of services, the results of organizations. public. This aspect requires public servants to develop the ability to manage their own emotions and thus deal with the demands of work (Lee, 2018). In addition, the contribution of these workers to maintaining and meeting the needs of society gives work in public administration collective values that reinforce self-esteem and enhance satisfaction and motivation towards work (Homberg *et al.*, 2015; Kjeldeson & Hansen, 2018; Lee, 2018).

Thus, people who value helping others are typically more likely to pursue public careers and will be more strongly motivated by a sense of purpose, as the perspective of contributing to society is a key behavior for public service motivation and, as such, must be aligned with the tasks performed by the servers (Homberg *et al.*, 2015). On the other hand, public organization is characterized by excessively bureaucratic processes, a very rigid hierarchy and vague or imprecise goals. These aspects limit the performance of civil servants, distancing them from the most rewarding elements of the profession (Kjeldeson & Hansen, 2018) by restricting the ability to control tasks (Lee, 2018) and promoting role conflicts (Guimaraes *et al.*, 2017; Lee, 2018).

From this perspective, roles express patterns of conduct present in all social structures and expressed by rights, duties and obligations (Kossek & Lee, 2017). Thus, roles impose behaviors considered correct and expected on social agents. Consequently, roles are patterns of conduct capable of providing stability to social systems by indicating which behaviors are accepted by certain social groups (Rhnima & Pousa, 2017; Kossek & Lee, 2017). However, as individuals participate in different social arrangements, roles often reveal themselves to be conflicting and often incompatible with each other. This condition provides ambiguities, which increase stress (Guimaraes *et al.*, 2017) and compromise job satisfaction. In public administration, according to Guimaraes *et al.* (2017), pressures from society and governments can cause dualities that promote role conflicts. A similar situation occurs when the information is incomplete, a condition that creates ambiguity in the roles that must be faced by public servants (Guimaraes *et al.*, 2017).

Thus, when dealing specifically with job satisfaction in educational institutions, Figueroa *et al.* (2012) state that the constant changes in the organizational environment of these institutions have required adaptability and challenged education workers. Positioned among the organizations with the highest risk of occupational illness (Figueroa *et al.*, 2012), educational institutions, especially those of higher education, stand out for their high complexity in bringing together teaching, research and extension, a condition that, in addition to the humanistic peculiarities necessary for the formation of citizens, structural reflexes and organizational functioning that distinguish these organizations and increase their challenges in the administrative and organizational functioning perspective (Mattos, 2019). Thus, when dealing with job satisfaction in federal educational institutions, Mattos *et al.* (2017) highlight that stability, job security and relationships with colleagues are revealed

as the positive extract for job satisfaction, in the opposite position, indicating elements of dissatisfaction, the benefits offered to servers were positioned.

In this perspective, Hoigaard *et al.* (2012) emphasize that job satisfaction strongly influences the enthusiasm and relationships of teachers and students and attenuates the desire of teachers to leave the profession, which occurs mainly with the most qualified. The same authors reinforce that job satisfaction increases teaching effectiveness, combats chronic stress, which causes the burnout syndrome, and reinforces involvement with work. Robinson *et al.* (2019) converge and highlight that job dissatisfaction is one of the main aspects of abandoning the teaching profession.

These aspects reinforce the need to monitor the satisfaction of teachers, but also of other education workers, given that teaching work largely depends on a support network present in educational institutions. In this sense, the organization can act to maintain high levels of productivity, engagement, job satisfaction, well-being, among others, by carefully monitoring the dynamics of workers, providing support conditions for carrying out tasks (Robinson *et al.*, 2019; Urbuni *et al.*, 2020).

3.   METHODOLOGY

The research was characterized as a descriptive survey with non-probabilistic sampling for accessibility and treatment of quantitative data. Studies in the form of a survey occurred by directly questioning the respondent, who by knowing the phenomenon can contribute to the investigation. On the other hand, descriptive studies expose characteristics of the object under investigation without necessarily explaining cause and effect relationships, even considering that the findings can contribute to this understanding.

As for the studies typified as non-probabilistic, they limit the results to the respondents because they do not meet the statistical criteria of representativeness and randomness of the sample (Hair *et al.*, 2009). Therefore, in non-probabilistic accessibility studies, respondents are selected according to the researcher's subjective criteria or by the availability to answer the questions (Gil, 2014). On the other hand, quantitative research uses mathematical and statistical methods to systematize the data and support the interpretation of results.

Thus, the study population consisted of civil servants from a Federal Institution of Higher Education (FIHE) in the North of Brazil. Data collection took place anonymously

through a research questionnaire. The sample consisted of administrative technicians and teachers who freely agreed to answer the questionnaire, and, at the end of the field research, 139 valid research questionnaires were obtained.

The questionnaire was accompanied by the Informed Free Consent Term (ICF) and was organized into two sections: the first, with dichotomous and multiple-choice answers, gathered sociodemographic information from the respondents such as age, position, education, marital status, children, working hours of work, among others; the second, with responses on a Likert scale with 7 options, starting with 1 for "totally dissatisfied", 2 for "very dissatisfied", 3 for dissatisfied, 4 for "neither satisfied nor dissatisfied", 5 for satisfied, 6 for "very dissatisfied". satisfied" and 7 for "totally satisfied", using the Job Satisfaction Scale (JSS), by Siqueira (2008).

Table 1. Model indicators

Dimensions	Indicators
Co-workers	With the collaborative spirit of my co-workers
	With the kind of friendship that my peers show for me
	With the way I relate to my co-workers
	With the number of friends that I have among my co-workers
	With the confidence I can have in my co-workers
Remuneration	With my salary compared to how much I work
	With my salary compared to my professional capacity
	With my salary bought at my cost of living
	With the amount of money that I receive from this company at the end of each month
	With my salary compared to my efforts at work
Boss	With the way my boss organizes work in my department
	With my boss's interest in my work
	With the understanding between me and my boss
	With the way my boss treats me
	With my boss's professional ability
Nature of work	With the degree of interest that my tasks arouse me
	With the capacity that my work absorbs me
	With the opportunity to do the kind of work I do
	With the worries required by my work
	With the variety of tasks that I perform
Promotions	With the number of times that I was promoted in this company
	With the guarantees that the company offers to those who are promoted
	With the way this company carries out promotions for its staff
	With the opportunities to be promoted in this company
	With the time that I have to wait to be promoted in this company

Source: Siqueira (2008).

This scale is made up of 25 job satisfaction indicators, organized into five dimensions or first-order constructs (colleagues, leadership, promotions, remuneration, and nature of

work), being the most used scale in Brazil to assess job satisfaction, such as highlight Carvalho *et al.* (2021).

Data processing combined descriptive, correlational, multivariate statistics and hypothesis tests and began with the sociodemographic characterization of the respondents, using the frequency distribution and percentage calculations to organize the categories. Subsequently, the psychometric quality of the scale (one-dimensionality, convergent and discriminant validity) was examined using exploratory factor analysis (EFA) carried out in blocks, complemented by reliability measures (Cronbach's alpha coefficient and Composite Reliability).

Once the psychometric quality was verified, the dimensions (first order constructs) were analyzed by the average of the scores using measures of central tendency (arithmetic mean), dispersion (standard deviation) and correlation techniques (Pearson correlation). This set of techniques was selected to systematize the characteristics of job satisfaction, in order to verify the occurrence of the phenomenon in the total sample. After this step, the respondents were grouped into groups with the greatest possible internal similarity and dissimilarity between groups. For this purpose, cluster analysis was used in an agglomerative hierarchical form.

According to Hair et al. (2009), when dealing with cluster analysis, clarify that it is a multivariate data analysis technique classified among interdependence techniques. Positioned among the most used techniques in scientific studies, cluster analysis enables the creation of a taxonomy between objects or observations, thus making it possible to distinguish and quantify them (Hair *et al.*, 2009). In the form used in this study, each respondent starts alone and will be joined to the one most like him/her according to a measure of geometric distance (Euclidean distance) and an agglomeration algorithm (Ward's algorithm). Once formed, the groups were compared with nonparametric analysis of variance (Kruskal-Wallis) with post-hoc tests (corrected with Bonferroni) to verify if they were correctly classified and, subsequently, evaluated with descriptive techniques.

4. RESULTS

4.1. Profile of respondents

As shown in Table 2, most respondents are male (56%) and, regarding marital status, the most frequent relationship was married or in a stable relationship (62%). Parents in

68.3% (95) of the cases, the mean age was 44 (±11) years, focusing mainly on the strata between 36 and 40 years (18%) and above 51 years (35.2%) distributed among administrative technicians (48.2%) and professors (51.8%). With a high level of education, 93% (129) had a bachelor's degree, and of these, 11.5% (16) had a master's degree and 48.2% (67) had a doctorate degree.

Table 2. Socioeconomic characteristics of respondents

Category	Item	Freq.	%	Category	Item	Freq.	%
	Male	78	56.0	Age	21 to 25	2	1.4
	Female	61	44.0		26 to 30	11	7.9
Children	Yes	95	68.3		31 to 35	17	12.3
	No	44	31.7		36 to 40	25	18.0
Private	Yes	67	48.2		41 to 45	18	12.9
initiative	No	72	51.8		46 to 50	17	12.3
Managerial	Yes	47	33.9		51 to 55	25	18.0
Position	No	92	66.1		Over 56	24	17.2
Role	Teacher	72	51.8	Time	Up to 5 years	40	28.8
	Admnistrative technician	67	48.2	experience	6 to 10 years	10	7.2
Education	Middle level	10	7.2		11 to 15 years	8	5.8
	Higher level	16	11.5		16 to 20 years	23	16.5
	Specialization	30	21.6		Over 20 years	58	41.7
	Master's degree	16	11.5	Marital	Single	33	23.7
	Doctorate degree	67	48.2	status	Married	85	61.2
Workday	Up to 30 hours per week	6	4.3		Separated / Divorced	15	10.8
	Between 31 and 40 hours per week	133	95.7		Widower	6	4.3

Source: Field Research.

Respondents who work between 31 and 40 hours per week were 95.7% (133) of the total. Most of them did not hold a leadership position (66.1%). However, those who exercised (44%) had an average of 12 (±35) servants in their teams. As for the professional experience, 48.2% (67) had accumulated experience in the private sector before entering the public career and when discussing their experience in the public service, most declared more than 16 years of work (58.2%).

4.2 Evaluation of the job satisfaction scale

Job Satisfaction Scale (JSS) proved to be a reliable instrument, such as showed Rueda (2015) and Barbosa *et al.* (2016). However, even considering this aspect, data analysis was initiated by verifying the reliability of the scale, which involved verifying the one-dimensionality of the dimensions and measures of validity (Table 3). One-dimensionality sought to verify whether dimensions brought together the variables as presented in Siqueira (2008). Thus, the variables of each dimension were expected to form a single factor. This

procedure used exploratory factor analysis (EFA), performed in blocks, having as parameters the principal component analysis (PCA) and the latent root criterion (eigenvalue > 1).

The results presented in Table 3 confirmed that the dimensions correctly gathered the variables and that there was a good fit in the data, as all factor loadings were greater than 0.620, the Kayser-Meyer-Oklin (KMO) test was positioned between 0.781 and 0.875, and Bartlett's sphericity test was significant at 1% for all scale dimensions. Once one-dimensionality was confirmed, the constructs were evaluated for convergent and discriminant validity. To measure convergent validity were used: (1) Cronbach's alpha coefficient (α); (2) Composite reliability (CR), and (3) Average variance extracted (AVE). These procedures met the requirements of Fornell & Larcker (1981), Chin (1998), Hair *et al.* (2009), and Costa (2011), who consider appropriate values above 0.700 for α and CR and greater than 0.500 for AVE.

Table 3. Dimensions, variables, reliability

Variable	Number	Factorial Load	KMO	Bartlett	α	CR	AVE
Colleagues	05	0.620 – 0.881	0.846	<0.01	0.853	0.896	0.636
Boss	05	0.791 – 0.878	0.827	<0.01	0.894	0.922	0.703
Promotions	05	0.712 – 0.852	0.856	<0.01	0.872	0.907	0.663
Remuneration	05	0.760 – 0.917	0.875	<0.01	0.905	0.930	0.728
Nature of work	05	0.646 – 0.820	0.781	<0.01	0.808	0.869	0.571
Reference values	25	>0.500	>0.500	<0.05	>0.700	>0.700	>0.500

KMO=Kayser-Meyer-Oklin; α =Cronbach's alpha; CR=Composite reliability; AVE= Average variance extracted. Source: Field research.

Table 4 shows the discriminant validity necessary to measure the intensity with which the constructs are different from each other. For this, the procedure recommended by Fornell & Larcker (1981) was used, which consists of comparing the average variances extracted (AVE) with the correlations of the dimensions squared. Thus, when the AVE is greater than the squares of Pearson's correlations (r), it is possible to affirm that there is discriminant validity. In this way, the JSS dimensions proved to be reliable, without bias, and capable of adequately representing job satisfaction at the research place.

Table 4. Discriminant validity

Dimensions	Colleagues	Boss	Promotions	Remuneration	Nature of work
Colleagues	(0.636)				
Boss	0.308	(0.703)			
Promotions	0.156	0.135	(0.663)		
Remuneration	0.212	0.092	0.207	(0.728)	
Nature of work	0.296	0.289	0.228	0.147	(0.571)

Note: AVE is on the main diagonal in parentheses and correlation squared (r) on the lower triangle. Source: Field research.

4.3. Descriptive and Correlational Analysis

The descriptive analysis, as shown in Table 5, showed that the respondents, in general, were satisfied with the work, as most dimensions resulted in scores above the center of the scale (4.00) and had low standard deviations. (<1.28). The main strengths in job satisfaction were the performance of managers (5.25±1.06), relationships between co-workers (5.12±098) and the nature of the work performed (5.07±0.97), with less satisfaction, but not to the point of revealing dissatisfaction, promotions were positioned (4.16±1.16) and, with slight dissatisfaction, remuneration for work (3.87±1.28).

Table 5. Dimensions and variables

Dimensions	Average	Standard Deviation	Colleagues	Boss	Promotions	Remuneration
Colleagues	5.12	0.98				
Boss	5.25	1.06	0.555*			
Promotions	4.16	1.16	0.395*	0.367*		
Remuneration	3.87	1.28	0.460*	0.303*	0.455*	
Nature of work	5.07	0.97	0.544*	0.538*	0.477*	0.384*

Legend: * = significant at 1%.
Source: Field Research

Pearson's correlation analysis (r) showed that all relationships were positive and significant at 1%. Thus, it is possible to say that efforts to improve job satisfaction, even if they occur in only one dimension, will have repercussions on the others and, therefore, will have broad results in the organization, contributing to a state of general improvement. As for the intensity of correlations, according to criteria adopted by Maroco (2014), moderate ($0.25 \leq |r| < 0.50$) and strong ($0.50 \leq |r| < 0.75$) correlations stood out for all the dimensions of the scale. Among the strong correlations, there is the performance of managers in supporting the strengthening of relationships between co-workers (r=0.555) and in the nature of the work (r=0.538). Still regarding the nature of work, there is a strong correlation of this dimension with co-workers (r=0.544), and this characteristic highlights the way in which work is

distributed among the servers, suggesting a participatory process shared between the employees. colleagues and supervision of supervisors.

Another peculiarity worth mentioning is that colleagues are more strongly related to promotions (r=0.395) and remuneration (r=0.460) than the leadership, which showed weaker correlations with promotions (r=0.367) and remuneration (r=0.303). Some hypotheses for these aspects are: (1) the access of many to the leadership occurs through an elective process, and its exercise implies gratification, therefore demanding support from co-workers, either in the form of election or by appointment to positions of trust; (2) another aspect stems from the promotion criteria, which are less influenced by hierarchical superiors, thus, promotion occurs as long as the employee meets the criteria pre-established in the organization's internal regulations, characterizing an impersonal process. Still regarding the correlation, the moderate intensity between the nature of the work and the remuneration (r=0.384) was highlighted, suggesting that the promotion criteria are more strongly associated with the time of work in the public service than with the tasks performed.

4.4 Cluster Analysis

Respondents were classified in such a way as to achieve the greatest internal similarity and greatest possible dissimilarity between groups. We sought to identify possible differences in the intensities of job satisfaction to contribute to the direction of people management strategies. The technique used for classification was cluster analysis and, at the end of the classification process, the servers were grouped into three groups of 80 (58%), 32 (23%), and 27 (19%) members each. To verify that the groups were correctly classified, they underwent multiple comparison tests and, as the distributions were not normal, the non-parametric Kruskal-Wallis (KW) tests were used post hoc, with Bonferroni adjustment.

Table 6 summarizes the test results and shows that the dimension called nature of work was the one that exerted the greatest influence on the formation of the groups (KW=76.49; p-value<0.01). The results of the multiple comparison tests made it possible to verify that the groups were significantly different from each other, which makes it possible to affirm that they are correctly classified.

Table 6. Group comparison with Kruskal-Wallis and post hoc, with Bonferroni adjustment

Teste		Colleagues	Boss	Promotions	Remuneration	Nature of work
Kruskal-Wallis qui-quadrado		61.27	65.14	65.72	42.52	76.49
P-value		<0.01	<0.01	<0.01	<0.01	<0.01
Group 1 vs. Group 2	P-value	<0.01	<0.01	<0.01	<0.01	<0.01
Group 1 vs. Group 3	P-value	<0.01	<0.01	<0.01	<0.01	<0.01
Group 2 vs. Group 3	P-value	<0.01	<0.01	<0.01	<0.01	<0.01

Source: Field survey.

The descriptive analysis of the scores in the groups, Figure 1, showed that the lowest satisfaction occurred in Group 2, which gathered 32 (23%) employees with scores slightly above the center of the scale (4.00) for colleagues (4.26± 0.97), management (4.21±0.87) and nature of work (4.03±1.02). However, when promotions (3.21±0.91) and remuneration (2.91±0.88) were evaluated, this group was positioned below the median of the scale (4.00), an aspect that reveals dissatisfaction. On the other hand, Group 3, with 27 (19%) civil servants, was the most satisfied with high scores in all dimensions of the scale, which, in decreasing order of satisfaction, highlighted the performance of the leadership (6 .42±0.49), coexistence with colleagues (6.19±0.41), tasks performed daily (6.17±0.45), forms and opportunities for promotions (5.61±0, 75) and the remuneration received for work (5.04±1.02).

Figure 1. Characterization of groups
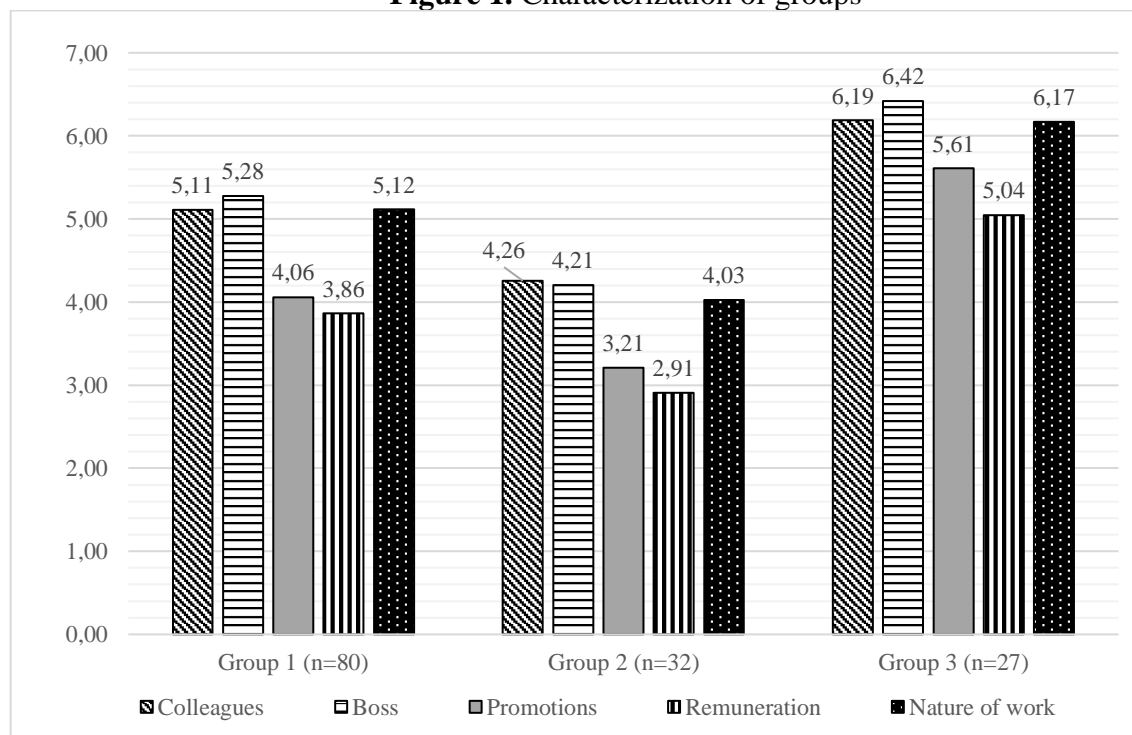
Source: Field survey.

However, the main group, the one with the largest number of members, was Group 1. This group gathered 80 (58%) employees who rated the performance of the managers as satisfactory (5.28±0.82), the nature of the work (5.12±0.56) and integration with colleagues (5.11±0.75). Another aspect of this group was the neutral evaluation of promotions (4.06±0.87) and mild dissatisfaction with remuneration (3.86±1.17). Summarizing the results, the dimensions that least satisfy the civil servants were those related to promotions and remuneration since the others proved to be favorable aspects, which reinforce job satisfaction at the research site.

5. DISCUSSIONS

The results showed that although the JSS is not a scale used in many international studies, it is the most widely used in Brazil (Carvalho *et al.*, 2021), which is justified by its strong adaptation to the Brazilian cultural reality (Hora *et al.*, 2018). In this sense, the analysis of the JSS dimensions resulted in adequate levels of reliability, conditions that allowed the instrument to be evaluated as valid, an aspect that converges with Rueda (2015) and Carvalho *et al.* (2021). When referring to teachers' job satisfaction, Cardoso and Costa (2016) highlight that this topic has received little attention from educational institutions, especially due to its influence on organizational success and student learning. In the same perspective, Carvalho *et al.* (2021) reinforce that the JSS can provide robust measures to assess job satisfaction among Brazilians.

Regarding the analysis of job satisfaction itself, the responses of the servers showed that, in general, they are satisfied with their work, with the boss, colleagues, and the nature of work as the dimensions that most contribute to overall satisfaction. These results are in line with the findings such as Brandão *et al*. (2014), Gradim *et al*. (2018), and Mattos *et al.* (2017). However, when analyzing remuneration and promotions, the results showed less intense satisfaction and, for a smaller group of servants (23%), it was an element of dissatisfaction. These aspects were also observed in other studies in job satisfaction public administration, in which there seems to be a relative convergence of results when it comes to remuneration and careers (Brandão *et al.*, 2014; Hedler and Castro, 2015; Leal *et al.*, 2015, Mattos *et al.*, 2017).

Futhermore, Marqueze and Moreno (2009) clarify that there is a positive and significant relationship between the presence of job satisfaction and the offer of good wages

and benefits. Hedler & Castro (2015), when finding dissatisfaction with remuneration among employees of a Reference Center for Social Assistance (RCSA) in the city of Paranavai, state of Parana, Brazil, attributed dissatisfaction to high levels of education, a condition that generates expectations of better wages.

Considering this hypothesis in the results of this study, the higher level of education, common among federal public servants, due to the very requirements of public entrance examinations, causes many higher-education professionals to occupy secondary-level positions, which can lead to dissatisfaction with the remuneration. This hypothesis may partially justify the negative evaluation observed in the present study

Job satisfaction is a comprehensive construct and, as it is dynamic, it is subject to organizational and personal conditions (Leal *et al.*, 2015). Lemos & Passos (2012) complement and reinforce the complexity, subjectivity, and variations of job satisfaction over time. Thus, job satisfaction has often been associated with other aspects of organizational behavior such as performance, organizational commitment, resilience, turnover, productivity, health and well-being, among others (Hedler & Castro, 2015; Hora *et al.*, 2018), conditions that put studies on job satisfaction in evidence, especially in public administration, which increasingly incorporates private administration practices into its routine (Hedler & Castro, 2015).

Consequently, job satisfaction is based on the information that workers obtain from the work environment and, in this evaluation process, the performance of managers stands out (Leal *et al.*, 2015). Confirming this perspective, the managers were the dimension with the greatest contribution to the promotion of job satisfaction, either by encouraging the relationship between colleagues, or by dividing the tasks between them, influencing the nature of work.

Mattos *et al.* (2017) and Robinson et al. (2019) highlight those personal relationships are strong influencers of emotional aspects in the work environment and that the construction of bonds of friendship contributes to greater team integration, thus positively influencing job satisfaction. Gradim *et al.* (2018), when investigating job satisfaction at the Rio de Janeiro State University, found relationships with co-workers to be the main influencer in the job satisfaction of administrative technicians. This aspect ranked second in this study, right after the managerial dimension. This aspect reinforces the need for attention to interpersonal relationships in the work environment of contemporary public organizations.

6. FINAL CONSIDERATIONS

The results of this study converged with other studies that assess the Job Satisfaction Scale (JSS) as valid, stable, and with good psychometric quality. Among the JSS dimensions, co-workers, managers, and the nature of work stood out as strengths in labor relations, while promotions and remuneration were as weaknesses.

These results reflect the differences and imbalances in the different careers of public administration, especially about recognition for the work performed. However, acting in education is gratifying and converges with studies that put pro-society behavior and loyalty to the public interest into perspective, revealing strong motivational stimuli of essentially intrinsic nature that are probably contributing to job satisfaction.

It is noteworthy that the three groups identified in the research were characterized by the predominance of positive aspects, differing in intensity between intermediate and very satisfactory (the only exceptions occurred in promotions and remuneration in Group 2, which were considered unsatisfactory). In general, these aspects show that the respondents are satisfied with their work and motivated to perform the tasks. Nevertheless, from the perspective of career and remuneration, there is room for improvement in all groups.

Notably, there are great differences in the various public careers, often resulting from isolated negotiations with specific groups, even within the same entity or power. Thus, observed imbalances and distortions between public careers, aspects that can be corrected with the improvement of people management policies, strongly recommended in the Brazilian context.

Among the limitations of the study, the self-administered questionnaire and the sampling technique stand out, which make it impossible to clarify any doubts of the respondents and limit the findings to the servers who participated in the research. From this perspective, future research may combine data collection methods such as questionnaires and scripts to identify organizational strategies that increase job satisfaction. There is also the possibility of using probabilistic sampling and measuring representativeness and sampling error, expanding the results to the population. Another suggestion can use the JSS combined with other scales, mainly due to the adequacy of this scale to the reality of Brazilian workers.

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