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Article

Development of scale and model for evaluating the individual performance appraisals—Process in public management

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Abstract: The need for strategic alignment within HR management increased managers' concern about individual behavior and how this behavior was related to the achievement of goals. In public management, effectively managing employees' performance has been necessary since Weber's bureaucratic administration. The individual performance appraisal is the right tool to assess employees' competencies. Thus, we proposed the following research question: Which factors, as pointed out by theory, have the most significant influence on the individual performance appraisal process? The quantitative method was applied to answer this question, developing and testing a scale via EFA and a hypothetical model via SEM-CB. The results indicated a scale with 25 items able to access the main points of the IPA process and a hypothetical model with 7 constructs that indicate the influence on employee engagement. The main finding is the significant influence of feedback on the whole process. The main theoretical contribution was the construction of the MIPAS scale, and the practical contribution was to identify the points where managers should focus on improving the IPA process with their subordinates.

Keywords: human capital; performance appraisal/management; performance rating; feedback; structural equation modeling—SEM

1. Introduction

The need for strategic alignment in HR management increased managers' concern with individual behavior and how this behavior was related to achieving goals (Lengnick-Hall et al., 2009; Ulrich et al., 2011). This includes all activities associated with people within the institution, such as training, recruitment and selection, development, and performance evaluation (Allen & Wright, 2007).

The need to include strategy concepts within HR management increased managers' concern with individual behavior and how this behavior was related to achieving goals (Barney, 1991; Fisher, 2002; Huselid, 1995). In public management, effectively managing employee performance has been considered necessary since Weber's bureaucratic administration (Cunha et al., 2018). The individual performance appraisal (IPA) is the right tool to assess the skills of employees (Marras, 2012), which are linked to engagement and commitment within activities (da Silva Monteiro et al., 2021; da Silveira et al., 2021).

The individual performance appraisal (IPA) identifies employees' competencies as a mechanism capable of estimating the use of human potential (Bergamini and Beraldo, 2008; Pontes, 2010). The IPA makes it possible to assess the level of

professional quality of employees and the existence of the necessary skills for the development of tasks (Marras, 2012). Systematization and the periodicity of its application are necessary to explore the full potentiality of the IPA. However, what is evaluated, by whom, and how is the evaluation carried out? These are the most critical decisions, marked according to the organization's strategy (DeNisi and Smith, 2014).

Thus, we proposed the following research question: Which factors, indicated by the theory, have the most significant influence on the process of individual performance appraisal? The method applied to answer this question was quantitative (Cunliffe, 2010), with the development and testing of scale via EFA (Brown, 2006; Bido et al., 2018) and a hypothetical model via SEM-CB (Hair et al., 2010; Malhotra et al., 2010).

The result of the scale construction process indicated a scale with 25 items—the Measurement IPA Scale—capable of accessing the main points of the IPA process. The second result identified the hypothetical model—MIPA—with seven constructs, indicating the influence on employee engagement (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003). From this model, we identified that the construct with the most significant influence on the IPA process is feedback. Feedback proved to be a central point for the significance of proximal factors ($\beta = 0.533$), which are linked to the implementation and execution of the evaluation process. It is also essential to perceive the usefulness of the whole IPA process and the methodology applied for the evaluation.

Regarding engagement, proximal factors ($\beta = 0.433$) had the most influence. This factor accounts for the more significant variation in employee engagement. It must be closely monitored so that the perception of the items of this construct is considered well performed. Another essential point is feedback, which, if added to its direct and indirect effects on engagement ($\beta = 0.474$), will account for another large proportion of its variation.

The main theoretical contribution was the construction of the MIPAS scale and the hypothetical model to identify employee engagement, MIPA. The practical contribution was identifying the constructs managers should focus on to improve the IPA process with their subordinates, helping increase employee adherence to the process.

2. Theoretical framework

The individual performance appraisal (IPA) is crucial in modern people management (Ammons and Roenigk, 2015; Lacombe and Albuquerque, 2008; Lee, 2017). For people management to serve the organization as a true business partner, helping the organization achieve the goals outlined by strategic planning, it must focus on managing the competencies needed to achieve those strategic goals (Ammons and Roenigk, 2015). Competency management is a way to manage the organization based on the competencies needed for the organization's strategic planning to be implemented accurately and well (Ulrich et al., 2011; Barney, 1991). This process focuses on developing and acquiring the competencies that the company needs, not just those that employees have or want to acquire (Allen and Wright, 2007).

To identify the competencies the organization needs in employees and potential employees within a selection process, it is necessary to identify each person's competencies and which they can or need to develop (Draganidis and Mentzas, 2006; Špalková et al., 2015). The best way for us to access employee competencies is through IPA (Lee, 2017; Tate et al., 2014). This is a tool used by all organizations that wish to generate information for managing their employees by competency. We must understand what performance means for IPA to achieve its goal effectively. A more straightforward definition treats IPA as a planning and development tool for people management, which has, as its foundation, the improvement of organizational performance and its integration with the individual's goals (Lacombe and Albuquerque, 2008). There are also more instrumental definitions, such as:

Performance appraisal can be defined as a formally structured interaction between a subordinate and supervisor, which usually takes the form of a periodic (annual or semiannual) interview in which the subordinate's work performance is examined and discussed in order to identify strengths and weaknesses as well as opportunities for improvement and skill development (Sameera-Begum and Sumalatha, 2015).

An IPA process is developed with a specific purpose: to identify employees' competencies (Tate et al., 2014). This initial purpose joins other purposes such as streamlining the organization's planning, developing people, establishing the results expected by the organization, improving communication, creating a climate of trust, motivation, and cooperation, and identifying talents in the company (Allen and Wright, 2007; Pontes, 2010; Špalková et al., 2015). These objectives lead to an evaluation by those involved in the use process given to the data and information generated by IPA (Bergamini and Beraldo, 2008). If employees perceive that IPA leads nowhere, i.e., does not produce practical results, this will generate a flow of negative emotions, leading to decreased engagement with the process and, ultimately, abandonment (Judge et al., 2001; Weiss and Cropanzano, 1996).

The evaluative process itself can already be an influence on employee behavior (Bohlander and Snell, 2011). This behavior can take two different approaches. The first is the search to develop competencies already mastered or incorporate new competencies (Lengnick-Hall et al., 2009). This development focuses on planning for better growth opportunities within the job, identifying training needs, detecting potential problems, and setting goals (Iqbal et al. 2014). The second is conforming to the rules and other issues connected to the IPA administrative process. This approach aims to reference decisions and validate training and selection criteria (Lee, 2017; Kim, and Holzer, 2014).

The IPA process is not considered trivial and is easy to develop and apply (Chiang and Birtch, 2010; Ikramullah et al., 2016; Levy and Williams, 2004). It is even more complex to assess whether this process is efficient and effective in its development and application. Some works seek to study the IPA process. However, they end up observing only a few criteria. Of these criteria, we highlight four: (1) Usage Criteria, focusing on the purpose of the evaluative process; (2) Qualitative Criteria, which refers to the employee's perception of fairness concerning the process; (3) Quantitative Criteria, related to the evaluation methodology and criteria, i.e., how accurate and

unbiased the evaluation is; and (4) Outcome Criteria, which refers to individual and institutional reactions toward the results of an evaluation and the perceived usefulness of the evaluation (Iqbal et al., 2014; Ikramullah et al., 2016; Murphy and DeNisi, 2008).

Few models have been developed to evaluate the IPA process (Ikramullah et al., 2016). One of the most comprehensive models that seeks to evaluate the IPA process is based on five factors: distal, proximal, mediating, distorting, and judgmental (Murphy and DeNisi, 2008). The authors of this model argue that it can be applied across many different organizations and cultures, generating information and analysis about IPA processes that can be compared. Other models have also been developed, but with particular focuses, such as those that look at issues linked to autonomy in the employee IPA process (Kim and Holzer, 2014; Fernandez and Moldogaziev, 2012), the social and power propagation perspective involved in the IPA process (Granovetter, 1992; Pichler et al., 2008), or employee participation in goal setting (Roberts, 2003). Many other studies have pointed to critical issues related to the IPA process and should be considered in building a comprehensive and practical evaluation of this process (Côrtes and Meneses, 2019; Cropanzano et al., 2007; Feitosa and Lima, 2014; Fonseca and Menezes, 2016; Hartmann and Slapničar, 2012; Sánchez-Elvira, 2018).

3. Methodology

The methodology applied to this study is divided into distinct stages, and the epistemological positioning is objectivist (Cunliffe, 2010). In the first stage, we conducted broad and deep bibliographic research to identify the definitions and other factors that comprised the process of individual performance appraisal—IPA (Siddaway et al., 2019). From this process, the gap that we propose to fill emerged. The second stage was divided into two parts, the first being in-depth interviews with expert professionals involved with the IPA process within public management, which was the focus of our study (Bido et al., 2018; Hinkin, 1995). After conducting five interviews, we set out for a second part, identifying the elements contained in the interviews through the content analysis method (Almanasreh et al., 2019). In this analysis, we identified that the elements were repeated and did not bring novelty to the process, and the qualitative interview process was considered saturated and closed (Charmaz, 2006; Dixon-Woods, 2010).

To analyze the content of the interviews, we applied Bardin's method of discourse analysis by theme, which seeks to identify the critical points of the discourse and, from this, build indicators that summarize the discourse presented typically among the interviewees. To achieve this, in the analysis process, we first identified the main points that the literature presented as relevant for the evaluation of the IPA process and used them as a basis to begin the content analysis. We then checked what emerged from the interviewees' statements and whether the points identified in the literature converged with the interviews. Thus, we identified what was most relevant to the daily practice of federal public servants and how this could be evaluated. The first model and questionnaire emerged from this process.

In a third step, bringing together what was identified in the literature review and its confirmation by the expert interview process, in a cross-process of confirming results, we sought to identify the elements that form the basis of IPA and how this process could be evaluated, proposing a scale to be tested that emerged from the literature (Charmaz, 2006; Dixon-Woods, 2010). This step attempted to carry out a triangulation process of the results from the previous step, increasing the reliability of the identified results.

In a fourth step, this scale proposal was sent to a group of trained Ph. Ds working in people management in the public arena to evaluate the definitions and the proposed instrument as indicated in the literature on scale construction methods (Almanasreh et al., 2019; Charmaz, 2006). In this process, the Ph. Ds suggested a series of changes in the mediation questions of the model's constructs, more appropriately adapting the questions to the definitions brought to the literature and the results that emerged from the experts' interviews. After this fourth stage, and in possession of the results of the doctors' evaluation, we made the indicated adjustments, making the proposed scale increasingly closer to the needs and the theory that served as the basis for its construction.

From the scale items defined as final, we added a measurement scale based on the 5-point Likert scale, where one represents strongly disagree and five strongly agree (Fávero et al., 2009). This form of scale is widely used within the social sciences. It can capture respondents' perceptions with scale statements and is easily operationalized statistically through multivariate regression methods such as Structural Equation Modeling—SEM (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003; Onça et al., 2018). These items were transformed into an electronic form using Google Forms and sent via link to potential respondents within our target research audience.

Before sending the survey to the entire target audience, we conducted a pre-test of the scale developed in the previously described process to check the face validity and content validity intended for the target audience of the research (Hair et al., 2010; Malhotra et al., 2010; Almanasreh et al., 2019). We analyzed seven questionnaires in which respondents could give their opinions on the form of the statements in the questionnaire. From this analysis, we checked the points that should be adapted, which resulted in minor adjustments to the questions' semantics to better capture the purpose of the questionnaire (Hinkin, 1995; Fávero et al., 2009).

With all these adjustments, the links for answering the questionnaire were sent via email to potential respondents within the target audience of the research. The data collection method used was that of a survey selecting respondents by convenience and not statistical method (Fávero et al., 2009) because the research population comprises all Brazilian civil servants, representing a percentage of more than 7% of the country's active population (IBGE, 2014).

For the final analysis and construction of the IPA process rating scale, we used Exploration Factory Analysis (EFA) (Brown, 2006; Bido et al., 2018; Conway and Huffcutt, 2003; Costello and Osborne, 2005). This statistical component factoring technique seeks to identify the factors formed from statistical analyses of a data matrix, generating a group of empirically determined factors. With these results, we can turn

to the literature to identify the constructs and latent variables that arise from this analysis (Conway and Huffcutt, 2003; Costello and Osborne, 2005). This final scale is the basis for the subsequent analyses and is an essential research product.

We perform the EFA in two stages. The first was applied, including all items in the scale, without a prior classification of which construct each item should carry. This analysis indicated which scale items should be allocated to which construct. For statistical validation, we checked the convergent validity of the scale items for each construct, the discriminant validity of the cross-loading constructs, and the content validity of each constructed construct. In terms of content validity, as a second step, the results of the EFA were compared with the results of the literature review and the results of the content analysis of the interviews with experts (Brown, 2006; Costello and Osborne, 2005).

The last step of the study is the proposition of an evaluation model and its empirical test through the application of SEM based on the Covariance Matrix—SEM-CB—to verify the adherence of the theory to the collected data (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003; Conway and Huffcutt, 2003; Costello and Osborne, 2005). This multivariate regression technique can empirically test the proposed theory and verify its adherence to the data, pointing to its validity in the face of the collected data matrix (Hair et al., 2010; Fávero et al., 2009).

SEM-CB is also performed in two stages (Hair et al., 2010; Malhotra et al., 2010; Bido et al., 2018). In the first stage, we performed a Confirmatory Factor Analysis—CFA to determine the validity of the measurement model. Although the scale was developed by the authors and had already undergone a validation process, this process did not consider the scale as part of a model of antecedents and consequences but only as a scale that measures distinct phenomena, the constructs. Thus, the application of CFA analyzes the adjustment of the measurement model, starting from the relationship of the scale items with each of the model's constructs, evaluating more restricted issues such as cross-loading, convergent validity, and discriminant validity. After adjusting the measurement model, the SEM-CB is calculated using the multiple regression method. The results achieved will be valid as predictors of the influence of one construct on another only if the model adjustment has reached convergent and discriminant validity and if the model adjustment data are at levels higher than those recommended in the literature (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003).

We used the software "JAMOVI" version 1.8.4 to obtain the EFA results, which works as a more user-friendly interface to the software "R" version 4.0.2. We used the software RStudio version 1.3.1093 to obtain the SEM-CB results, which also works as an interface to the software "R" version 4.0.2.

4. Results of the construction of the IPA process evaluation scale

The construction of the scale followed a sequence of phases until its final validation through the collection and analysis of the survey via EFA (Brown, 2006; Conway and Huffcutt, 2003; Costello and Osborne, 2005). We began building the scale to measure the main aspects linked to the individual performance appraisal process—IPA—by systematically reviewing the topic within the existing literature on

the subject (**Table 1**). In this review, we identified several critical articles that pointed to a range of issues that should be observed for this process to achieve its objective satisfactorily (Siddaway et al., 2019; Hinkin, 1995).

Table 1. Dimensions, factors, and variables identified as relevant.

Dimensions	Factors	Variable	References
Distal factors	Cultural aspects	Country culture	Murphy and Denisi (2008); Odelius and Santos (2007); Odelius (2000)
		Public service culture	
		Organ culture	
	Legislation and external regulations	Legislation and norms external to the institution	Murphy and Denisi (2008);
	Organizational structure	Top management support	Odelius and Santos (2007); Bergue (2010)
		Characteristics of the institution	
		Political discontinuity	
Proximal factors	Purpose of the evaluation	Utility	Murphy and Denisi (2008); Feitosa and Lima (2014); Fonseca and Menezes (2016); Sánchez-Elvira (2018); Iqbal; Akba and Budhwar (2015)
		Prior definition of evaluation criteria and standards	
		Feedback from the evaluation process	
	Institutional	Internal rules	Murphy and Denisi (2008); Odelius and Santos (2007); Sánchez-Elvira (2018); Ahenkan et al. (2018); Kim and Holzer (2014).
		Organizational resources	
		Participant engagement	
		Institutional communication	
		Strategic planning	
	Acceptance of the evaluation	Developmental approach	Kim and Holzer (2014); Cropanzano, Bowenm and Gilliland (2007)
		Server participation in the evaluation process	
		Relationship between manager and evaluator	
		Server empowerment	
	Procedural justice	Formality	Hartmann and Slapnicar (2012); Beuren, Kreuzberg and Franz (2016)
		Voice	
		Result measures	
Judgment fact	Server perceptions	The perception of the evaluation process	Roberts (2003); Pontes (2010)
Factors related to the people management area	Reputation of the GP unit	Reputation of the people Manag. unit	Cortês and Menezes (2019)
	Methodology	Implementation methodology	
	Committee/support team for clarification. Of doubts.	Committee/support team for clarification of doubts.	
	Training policy for Partic.	Training policy for appraisers and appraisees	
Methodology	Methodology	Performance bonus linked to remuneration	Odelius and Santos (2007)
		360-degree evaluation	
		Individual goals linked to Inst.	
		Performance appraisal committee	
		Evaluation cycle	
		Fixed evaluation factors	

The dimensions identified (**Table 2**) in the literature were also evaluated through semi-structured interviews applied to three HR managers who work in public management and have extensive experience in people appraisal processes. The analysis of these interviews pointed out that the dimensions identified in the literature were sufficient to investigate the individual performance appraisal process. In addition to this finding, no new relevant issues appeared in the interviews that indicated the need for new interviews, thus considering those already conducted as sufficient (Almanasreh et al., 2019; Charmaz, 2006; Dixon-Woods, 2010). After this validation through the analysis of the interviews, we sent a questionnaire proposal to doctoral specialists with knowledge in the area of people evaluation who suggested minor changes, such as the adequacy of questions and even fragmentation of some others. This process resulted in a final questionnaire with 42 questions (Bido et al., 2018; Almanasreh et al., 2019).

Table 2. Items proposed as a final pre-test scale that emerged from the literature review.

N º	Variables in full	Short name
1	The Brazilian culture	Country_Culture
2	The culture of public service	Culture_Service_Public
3	Your organ culture	Culture_Organ
4	The laws and decrees that created and regulated performance evaluation in the Brazilian Federal Public Administration	Laws_Decrees
5	The Unified Legal Regime of the federal public servant (Law no. 8.112/90)	Rule_System
6	Stability in public service, defined in the Federal Constitution of 1988	Stability_Service_Public
7	Level of top management support (process sponsors)	Sponsors
8	Number of servers in my organization	N_Servers
9	Degree of hierarchy, that is, the number of hierarchical levels in the organizational structure of my institution	N_Hierarchies
10	The political changes in my institution	Changes_Policies_Inst
11	The manager considers the evaluation to be a valuable tool to improve his team's performance.	Manager_Assessment_Util
12	The server considers the evaluation as a useful tool to improve its own performance.	Server_Assessment_Util
13	The manager defines, in advance, the evaluation criteria and standards	Manager_Criteria_previous
14	The amount of feedback received (in the case of the evaluated) and given (in the case of the evaluators)	N_Feedbacks
15	The quality of feedback received (in the case of the evaluated) and provided (in the case of the evaluators)	Quality_Feedbacks
16	The internal regulations of the Institution that guide the evaluation process in its body. (Ordinances and other regulations)	Normative_Institution
17	Availability of financial resources that enable a better management of the process, such as the purchase of software and the number of servers dedicated to the evaluation process	Availability_Resources_Management
18	Availability of financial resources to reach the work goals defined in the evaluation process	Availability_Resources_Goals
19	Level of engagement of managers in the evaluation process	Engagement_Managers
20	Level of engagement of employees in the evaluation process	Engagement_Servers
21	Institutional communication (e-mails, newsletters and other communications about the evaluation)	Communication_Institution

Table 2. (*Continued*).

N º	Variables in full	Short name
22	The institution should present a strategic plan that guides its employees in achieving their goals	Planning_Institution
23	Servers' perception that the performance evaluation is focused on professional growth	Perception_Aval_Growth
24	The institution has, or not, forums and commissions that have the objective of stimulating the debate between evaluators and employees	Debate_Assessers_Servers
25	The quality of the relationship between the appraiser and the appraisee	Relation_Evaluator_Evaluated
26	The employees have the perception, or not, that their opinion will reflect, in the evaluation process, being subsidy for the decision making of the managers	Opinion_Servers_Assessment
27	How well the process steps are documented during the evaluation cycle	Documented_Steps
28	The manager's objectivity when evaluating his employees' performance	Objectivity_Manager_Assessment
29	The extent to which the manager considers the opinion of the employee when agreeing on work goals	Opinion_Servers_Goals
30	The work goals have measurable indicators	Measurable_Goals
31	The server's positive perception of the evaluation process	Positive_Perception_Assessment
32	The server's negative perception of the evaluation process	Perception_Negative_Assessment
33	The reputation of the Personnel Management Unit with the public servants	Reputation_Unit_Management
34	The way in which the Personnel Management Unit implemented the new performance evaluation system (Quantity of training and dissemination actions)	New_System_Assessment
35	Availability of channels for employees to clarify doubts related to the evaluation process	Channels_Doubts_Servers
36	Training actions with the purpose of explaining the performance evaluation process	Qualification_Aval_Performance
37	Part of my remuneration to vary according to my performance	Remuneration_Variate_Performance
38	Use of 360° evaluation (being evaluated by boss, peers and yourself)	Rating_360
39	The mandatory alignment of individual, team and institutional goals	Alignment_Goals
40	My institution, to have, or not, a committee to follow the evaluation process, and, when necessary, to appeal the result of the evaluation	Commission_Monitoring
41	The twelve (12) month duration of the evaluation cycle	Duration_12months_Endorsement
42	Fixed performance factors, that is, that do not vary depending on the job or assignment	Fixed_Performance_Factor

For each sentence of the final questionnaire, we added a 5-point Likert scale, with 1 strongly disagreeing and 5 strongly agreeing (Bido et al., 2018; Hinkin, 1995; Dalmoro and Vieira, 2014). The final scale was prepared in a Google Forms form and initially applied through a pre-test with 7 servers who rigorously evaluated several aspects of adherence to the target audience, cohesion, and clarity of the aspects asked in the questions (Bido et al., 2018; Hinkin, 1995). After this pre-test, we made specific adjustments. We invited our target audience, public servants, to start answering their perceptions about each of the aspects considered essential to evaluating the process of individual performance appraisal through the online questionnaire posted on the Google Forms platform.

5. Sample characterization

The total sample taken for the study was 376 respondents. Of these respondents, 55.59% were male and 42.82% were female. Education showed a high degree of respondents with at least a college degree, with 24.20% having a Ph.D. and 22.87% having a master's degree. As for their position, 71.28% are in positions requiring at least a college degree. As for the time they have held the position, only 28.99% have held it for more than 10 years, and 26.6% have held it for between 10 and 20 years. Finally, 44.75% of the sample occupy commissioned positions or functions corresponding to management positions.

The sample is made up of Brazilian federal employees. All respondents belong to the stable staff of the union. The exhibition is distributed across several ministries and bodies, thus avoiding concentration in just one ministry. This sample construction decision seeks to reduce selection bias by only capturing the views of a restricted group of employees (Bido et al., 2018).

6. Exploratory factor analysis—EFA

Starting with the sample analysis, we performed an Exploratory Factor Analysis (EFA) to identify the factors. This technique seeks to group the factors by means of a statistical factoring technique (Conway and Huffcutt, 2003; Costello and Osborne, 2005). From this analysis, factors emerge that group the items of the questionnaires, forming statistically determined constructs (Almanasreh et al., 2019; Charmaz, 2006; Dixon-Woods, 2010).

The covariance matrix analysis of the constructs (**Table 3**) that emerged from the EFA indicates that they do not have correlations above 0.70, pointing to the non-existence of multicollinearity among the emerging constructs (Brown, 2006; Onça et al., 2018; Conway and Huffcutt, 2003). Cumulative analysis indicates that these eight constructs capture 55.46% of the covariance of the emergent scale items.

Table 3. The covariance matrix of the latent variables of the scale with 42 items.

Eigenvalues/inter-factor correlations											
	SS loadings	**Percentage of variance**	**Cumulative %**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	4.130	9.840	9.840	1.000							
2	3.820	9.090	18.930	0.460	1.000						
3	3.470	8.270	27.210	0.635	0.488	1.000					
4	3.310	7.870	35.080	0.530	0.436	0.667	1.000				
5	2.680	6.370	41.450	0.330	0.406	0.392	0.372	1.000			
6	2.000	4.750	46.200	0.068	0.062	0.121	0.075	0.042	1.000		
7	2.160	5.140	51.340	0.228	0.216	0.190	0.180	0.167	0.081	1.000	
8	1.730	4.120	55.460	0.119	0.153	0.146	0.239	0.135	0.061	0.234	1.000

Note: $\chi^2 = 1.214$; df = 553; $\chi^2/df = 2.195$; p-value < 0.000; TLI = 0.985; RMSEA = 0.056.

The exploratory factor analysis resulted in 8 latent variables when the "maximum likelihood" extraction method combined with the "oblimin rotation method" was applied (**Table 4** and **Figure 1**) (Ahenkan et al., 2018). From these presented results,

after an analysis of the factor loadings of the items and the cross-loadings of loading the items on the constructs, we eliminated the items: availability resources goals, measurable goals, communication institution, positive perception assessment, fixed performance factor, reputation unit management, manager criteria previous, compensation varying performance, perception negative assessment, and sponsors.

Table 4. Results of the exploratory factor analysis—EFA.

Exploratory factor analysis								
	Factor							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Engagement_Servers	0.779							
Engagement_Managers	0.715							
Objectivity_Manager_Assessment	0.391							
Perception_Aval_Growth	0.391							
Availability_Resources_Goals								
Relation_Evaluator_Evaluated	0.384							
Opinion_Servers_Goals	0.368							
Communication_Institution								
Measurable_Goals								
Channels_Doubts_Servers		0.736						
Qualification_Aval_Performance		0.718						
Planning_Institution	0.387	0.445						
Debate_Assessers_Servers					0.663			
New_System_Assessment								
Documented_Steps		0.316			0.528			
Opinion_Servers_Assessment		0.306			0.482			
Fixed_Performance_Factor								
Reputation_Unit_Management								
Quality_Feedbacks			0.920					
N_Feedbacks			0.920					
Manager_Criteria_Previos			0.405					
Server_Assessment_Util				0.876				
Manager_Assessment_Util				0.812				
Normative_Institution								
Positive_Perception_Assessment								
Rating_360					0.663			
Alignment_Goals					0.588			
Commission_Monitoring					0.528			
Remuneration_Variar_Performance								
Duration_12months_Endorsement					0.441			
Perception_Negative_Assessment								
Culture_Organ						0.838		
Culture_Service_Public						0.829		
Country_Culture						0.559		
N_Hierarchies							0.635	
Changes_Policies_Inst							0.613	
N_Servers							0.577	
Availability_Resources_Management								
Sponsors								
Rule_System								0.859
Stability_Service_Public								0.581
Laws_Decrees								0.521

Note: 'Maximum likelihood' extraction method was used in combination with a 'oblimin' rotation.

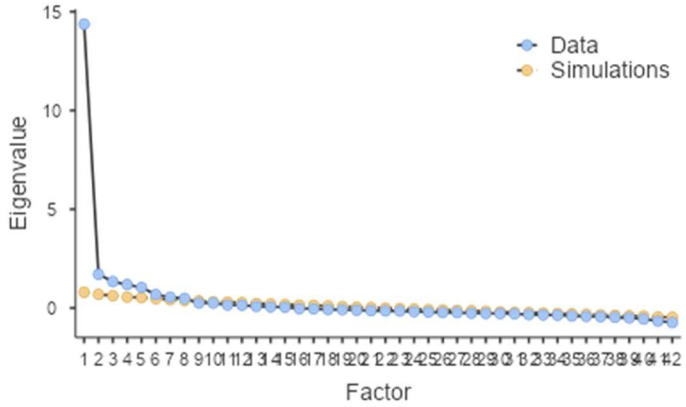

Figure 1. The plot of the eigenvalues of the 42-item from the scale.

After deleting these items from the scale, a new EFA was performed, and the results indicated the need to delete a few more items. These items were channels doubts servers, new system assessment, normative institution, availability resources management, rule system, stability service public, and law decrees. We eliminated 17 items from the scale, leaving 25 items validated as the final scale and with seven latent variables/constructs, as shown in **Table 5**.

Table 5. EFA results after eliminating items from the scale—Final scale with 25 items.

Exploratory factor analysis							
Variável	**Proximal factors**	**Feedback**	**Culture**	**Methodology**	**Engagament**	**Strucutural**	**Utility**
Debate_Assessers_Servers	0.724						
Planning_Institution	0.709						
Perception_Aval_Growth	0.669						
Opinion_Servers_Assessment	0.659						
Opinion_Servers_Goals	0.612						
Qualification_Aval_Performance	0.603						
Objectivity_Manager_Assessment	0.518						
Relation_Evaluator_Evaluated	0.467						
Documented_Steps	0.438						
Quality_Feedbacks		0.994					
N_Feedbacks		0.803					
Culture_Service_Public			0.885				
Culture_Organ			0.798				
Country_Culture			0.540				
Commission_Monitoring				0.673			
Alignment_Goals				0.653			
Duration_12months_Endorsement				0.628			
Rating_360				0.562			
Engagement_Servers					0.965		
Engagement_Managers					0.679		
N_Hierarchies						0.795	
N_Servers						0.630	
Changes_Policies_Inst						0.589	
Server_Assessment_Util							0.981
Manager_Assessment_Util							0.617

Note: 'Maximum likelihood' extraction method was used in combination with a 'oblimin' rotation.

The final result presents a structure with seven constructs: proximal factors, feedback, culture, methodology, engagement, structural, and utility. The theoretical basis that underlies this organization and the names of the constructs that emerged from the EFA will be discussed in the next section of this article.

7. Discussion of results EFA for determining the rating scale of the individual performance appraisal process

The results of the EFA with 25 items left over after eliminating the items with factor loadings below 0.400 point to the existence of seven factors. By analyzing the literature that served as the basis for our study, we identified that these factors were related to specific aspects within the individual performance appraisal theory (IPA). Thus, each factor was given a name that matched how the items were grouped when related to the literature (Almanasreh et al., 2019; Charmaz, 2006; Fávero et al., 2009; Conway and Huffcutt, 2003; Costello and Osborne, 2005).

Based on the analysis of factor F1, which includes nine items from the questionnaire, we identified the proximal factor label. We defined this factor this way because it brings together the items of the scale that deal with issues related to employees' daily lives within their work in public management (da Silva Monteiro et al., 2021; da Silveira et al., 2021; Bergamini and Beraldo, 2008; Ammons and Roenigk, 2015). This factor brings together two different aspects of evaluating this process: employees' perceptions of it and their views on issues related to the organization's HR tasks (Murphy and DeNisi, 2008). For the factor that arises from the questions aggregated by EFA as F2, we labeled it as evaluation methodology. This factor points to an analysis of the methodology used to evaluate employees within public agencies. Since this process is always regulated by a legal device or a standardized evaluation practice, the methodology employed plays a significant role in the evaluation process. It can significantly influence how employees view this process (DeNisi and Smith, 2014; Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001).

Continuing the analysis, we move on to the factor identified by EFA as F3, which was labeled feedback. This factor is directly linked to the quality of feedback managers perform within the evaluation process and the frequency with which this feedback is performed. Feedback is one of the most sensitive points in any evaluation because, without it, it is impossible for the evaluated to understand the points in which they are failing and how to improve them (Ikramullah et al., 2016). Feedback gives meaning to the process and ensures feedback for the IPA process (Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001; Alves et al., 2017).

For the factor identified as F4, the label given was cultural aspects. These aspects are linked to how employees view the individual performance appraisal process through the lenses of their personal, local, and national cultures. At this point, it is worth noting that it is considered culture—the rites, myths, habits, and beliefs common to an institution's members—seeking behavioral norms accepted by all that can shape how we face the IPA process (Hofstede et al., 2010; Pires and Macêdo, 2006).

For the factor identified by EFA as F5, the label given was engagement. Engagement emerges as a consequence of the IPA evaluation process, and it is

essential because it only happens if employees understand that the process is relevant and that the other aspects make some sense (Iqbal et al., 2014; Ikramullah et al., 2016; Murphy and DeNisi, 2008). At this point, it is essential to understand that for engagement to exist, the flow of emotions connected to the process must be positive (Judge et al., 2001; Weiss and Cropanzano, 1996; Kim and Holzer, 2014; Fernandez and Moldogaziev, 2012).

For the factor identified by EFA as F6, the label given was institutional structure. This construct aggregates questions related to the agency's structure, the sector where the employees to be evaluated are allocated, and the degree of importance they give to this structure. Issues such as the number of servers coworkers within the same department or the same unit, issues such as the hierarchical structure within these departments, units, and bodies, and issues such as political changes that occur during the year, linked to the structure and the evaluation process itself, are essential and guarantee more or less stability for the servers that will undergo the evaluation process (Iqbal et al., 2014; Murphy and DeNisi, 2008; Feitosa and Lima, 2014; Fonseca and Menezes, 2016; Sánchez-Elvira, 2018).

Finally, the factor that EFA identified as F7 was labeled the utility of the evaluation process, or just utility. This factor identifies how valid the evaluation process is in the view of the employees who go through it (Iqbal et al., 2014; Murphy and DeNisi, 2008). In contrast to this construct, we have a lack of utility that can be considered the reverse of this coin, pointing to a perception that the process does not bring any gain for those who participate (Iqbal et al. 2014).

The stability in public service that some civil servants have in their jobs is also linked to the perceived usefulness of the IPA process. This issue is linked to the stability of rules perceived by employees and generates feelings toward less significance in the evaluation (Beuren et al., 2020; Hartmann and Slapničar, 2012).

8. Proposition of hypothetical model and construction of hypotheses

When conjecturing a new theory, the researcher seeks to solve a problem by pointing to several possibilities. In this search, there may be mistakes that new studies with tests not initially imagined and that generate new theories can correct. Thus, based on the perception of the civil servants regarding how each factor influences the IPA process, we propose 10 hypotheses, which will be presented and justified, generating the hypothetical model for empirical testing through the data polished by the survey (Dixon-Woods, 2010).

We started our hypothesis construction by constructing proximal factors. This construct has the most significant number of items, nine. One point to be carefully observed concerning this construct is that it significantly influences the individual performance appraisal process (Murphy and DeNisi, 2008). This construct encompasses two aspects: the perception of the process and the factors in the people management area. In the first aspect, we point out and analyze issues related to professional growth facilitated by the IPA process and how a positive perception of these aspects influences the engagement of employees with the whole process (Bakker and Leiter, 2010). The second aspect is more related to how the people management team responsible for applying IPA behaves and is prepared to apply the process. In

this case, when employees perceive that both appraisers and appraisees are well prepared for the process and that the support given by HR is perceived as positive, there is greater engagement in applying the IPA process (Allen and Wright, 2007; Barney, 1991; Fisher, 2002; Huselid, 1995; Ammons and Roenigk, 2015; Lee, 2017; Bergue, 2010).

Hypothesis 1a: Proximal factors positively influence employees' engagement with the individual performance appraisal process.

The proximal factor construct is also considered essential for the aspect connected to the perceived usefulness of IPA (Iqbal et al., 2014; Ikramullah et al., 2016; Murphy and DeNisi, 2008). For a process to be considered helpful by an employee subjected to that process, a flow of positive emotions must be generated in that individual (Weiss and Cropanzano, 1996). These emotions will lead the appraisee to consider the gains made as positive for his or her career and other aspects (Iqbal et al., 2014; Ikramullah et al., 2016). Only with this positive look will the engagement of employees be possible, generating gains for the process and for the evaluation itself, which is the expected result from the perception of satisfaction with the practical result of the evaluation (Judge et al., 2001).

Hypothesis 1b: Proximal factors positively influence the perceived usefulness of the individual development assessment process.

When we address the issue of the evaluation methodology applied to the IPA process within public management, we observe that the way this process is scaled and the aspects that may be unstable, undergoing small or large changes, have a significant influence on how employees perceive all the elements within IPA (Iqbal et al., 2014; Murphy and DeNisi, 2008; Feitosa and Lima, 2014; Fonseca and Menezes, 2016; Sánchez-Elvira, 2018; Guimarães et al., 1998). The evaluation methodology is usually anchored in legislation or pre-established practices by third parties not directly involved in the evaluation process, bringing a standardization that does not always match the reality of the evaluation, especially within public management (Bezerra et al., 2019). Thus, the choice of methodology that will be applied is fundamental to the success of an IPA process (DeNisi and Smith, 2014; Beuren et al., 2020; Van Dijk and Schodl, 2015).

Hypothesis 2: Appraisal methodology positively influences the perception of proximal factors within individual performance appraisals.

Feedback is another essential construct; its influence on proximal factors and the engagement of appraisees and appraisers represent much of the impetus for a positive perception of IPA. Its implementation within an evaluation process provides several behavioral changes, even if the evaluation is seen as a pro forma task and has no influence on civil servants' careers (Alves et al., 2017). Its influence is direct in the evaluative process, especially in the form and methodology applied for IPA (Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001). This influence is possible due to the flow of emotions that the feedback brings to the evaluator and the evaluator, modifying how they face the evaluation process (da Silveira et al., 2021; Judge et al., 2001; Weiss and Cropanzano, 1996). Besides this issue of the immediate flow of emotions that arises with the feedback, its long-term influence on the proximal factors, the methodology applied, and the engagement of those involved are very closely

linked to the perception of the utility of the whole process, generating a significant practical result for the management of people based on competencies within public management (da Silva Monteiro et al., 2021; Gomes and Lisboa, 2020).

Hypothesis 3a: Process feedback positively influences perceptions about the proximal factors of individual performance appraisal.

Hypothesis 3b: Process feedback positively influences the perception of the applied methodology of the individual performance appraisal.

Hypothesis 3c: Process feedback positively influences the perception of the utility of the process in individual performance appraisal.

Hypothesis 3d: Process feedback positively influences employee engagement with the individual performance appraisal process.

The cultural aspects have a significant influence on the IPA process because they are at the basis of the behavior of individuals of a particular culture, which can be either a workplace, a larger group such as an organization, or even the culture of a country (Hofstede et al., 2010; Odelius and Santos, 2007). This is considered an exogenous factor because its origin is not linked to the evaluative process but to other factors external to the IPA process (Levy and Williams, 2004; Murphy and DeNisi, 2008). Perceived culture influences how employees view proximal factors, generating a more condescending or aggressive view of the evaluation process itself (Murphy and DeNisi, 2008; Odelius and Santos, 2007; Odelius, 2000).

Hypothesis 4: Culture aspects positively influence the perception of proximal factors of individual performance appraisal.

The institutional structure is another factor influencing how we see the IPA process. Although this process is very similar to what happens in companies in general, within the public sector, this process has some peculiarities (Pires and Macêdo, 2006). Part of these peculiarities is that hierarchies are overvalued, and the size of the public sector, which in some agencies exceeds 100,000 employees, The factors related to the institutional structure influence how the evaluated people see the factors closer to the evaluation process, generating different expectations from those generated in a private organization (Ikramullah et al., 2016; Trevor et al., 2012).

Specifically in public management, this is an essential point because most decisions are made by public agents who have no direct relationship with the process itself. Thus, the whole process is regulated by legal norms that plaster the managers' actions, making the structure much more rigid and distant from the immediate needs of the more structural factors of the IPA process (Chiang and Birtch, 2010; Bergue, 2010; Odelius and Santos, 2007).

Hypothesis 5: Organizational structure positively influences the perception of proximal factors of individual performance appraisal.

Perceived utility of the entire IPA process is one of the most important constructs for employee engagement (Iqbal et al., 2014; Murphy and DeNisi, 2008; Van Dijk and Schodl, 2015; Odelius and Santos, 2007). Several aspects are essential for the perceived utility of the IPA process to generate a flow of positive emotions sufficient to generate engagement in the process (Weiss and Cropanzano, 1996). This construct encompasses the perception that the evaluation presents a practical aspect that brings economic gain to the evaluation (Chiang and Birtch, 2010); the public sector, various

promotion regulations are tied to evaluation processes (Bezerra et al., 2019). Bezerra et al., 2019; Trevor et al., 2012). This gain comes through promotions, awards, and bonuses (Trevor et al., 2012). In the public sector, various promotion regulations are tied to evaluation processes (Bezerra et al., 2019). Thus, utility is an essential factor in determining the engagement of public servants with IPA.

Hypothesis 6: Perceived utility positively influences employee engagement with the individual performance appraisal process.

Based on these hypotheses determined through the literature review, we propose the following hypothetical model (**Figure 2**) to test and verify that each exogenous construct influences the engagement of those involved in the individual performance appraisal process.

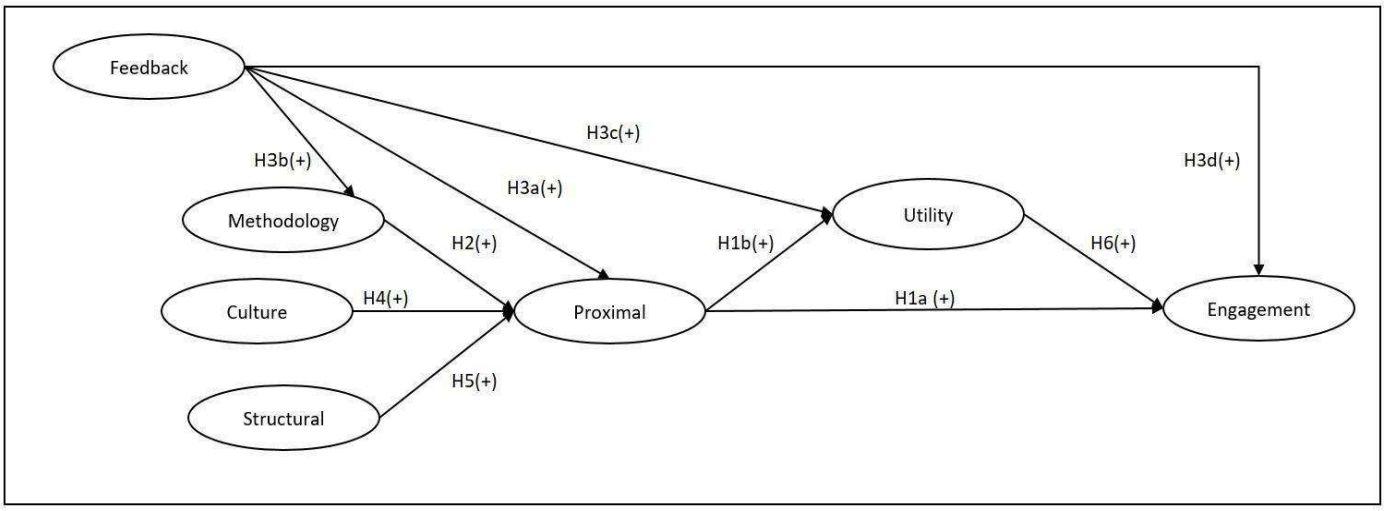

Figure 2. Hypothetical model of the individual performance appraisal process.

9. Results evaluation of the proposed hypothetical model

For the evaluation of a hypothesized model, several indicators are needed to analyze specific validities (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003; Costello and Osborne, 2005). These validities are content validity, convergent validity, discriminant validity, and overall model fit. Only after having all these model criteria evaluated can the regression result be considered to analyze the influence of one construct over the other, bringing significant results for science and people managers and other managers who apply IPA.

The analysis of **Table 6** indicates that all items were statistically significant at 5% and that all factor loadings have satisfactory results (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003). Some items draw attention to having factor loadings below 0.6, which is recommended as a minimum value for the item to remain in the model (Hair et al., 2010). However, since the results of the other analyses indicate a good model fit, even with these items with factor loadings below 0.60, we chose to keep them in the models to preserve the richness of the model's content validity (Bido et al., 2018; Almanasreh et al., 2019). The scale item with a very low standardized factor loading that should be highlighted was Relation_Evaluator_Evaluated, with a loading of 0.305.

Table 6. Test for convergent validity.

Convergent validity							
			Estimate	**Standard error**	***z*-value**	***p*-value**	**Standad estimate**
Proximal	=~	Debate_Assessers_Servers	0.580	0.042	13.651	0.000	0.714
Proximal	=~	Planning_Institution	0.626	0.041	15.132	0.000	0.788
Proximal	=~	Perception_Aval_Growth	0.668	0.044	15.295	0.000	
Proximal	=~	Opinion_Servers_Assessment	0.558	0.039	14.308	0.000	0.747
Proximal	=~	Opinion_Servers_Goals	0.550	0.040	13.831	0.000	0.723
Proximal	=~	Qualification_Aval_Performance	0.520	0.041	12.820	0.000	0.672
Proximal	=~	Objectivity_Manager_Assessment	0.600	0.038	15.795	0.000	0.821
Proximal	=~	Relation_Evaluator_Evaluated	0.305	0.037	8.274	0.000	0.439
Proximal	=~	Documented_Steps	0.423	0.037	11.596	0.000	0.610
Methodoly	=~	Commission_Monitoring	0.822	0.057	14.414	0.000	0.756
Methodoly	=~	Alignment_Goals	0.836	0.060	13.931	0.000	0.731
Methodoly	=~	Duration_12 months_Endorsement	0.627	0.061	10.202	0.000	0.553
Methodoly	=~	Rating_360	0.596	0.062	9.666	0.000	0.527
Feedback	=~	Quality_Feedbacks	1.027	0.022	46.546	0.000	0.935
Feedback	=~	N_Feedbacks	0.973	0.022	44.099	0.000	0.892
Culture	=~	Culture_Service_Public	0.751	0.044	16.908	0.000	0.864
Culture	=~	Culture_Organ	0.690	0.044	15.822	0.000	0.810
Culture	=~	Country_Culture	0.646	0.059	10.926	0.000	0.564
Engagement	=~	Engagement_Managers	1.033	0.020	52.057	0.000	0.969
Engagement	=~	Engagement_Servers	0.967	0.020	48.710	0.000	0.918
Structural	=~	N_Hierarchies	1.020	0.075	13.649	0.000	0.829
Structural	=~	N_Servers	0.822	0.077	10.639	0.000	0.606
Structural	=~	Changes_Policies_Inst	0.779	0.074	10.541	0.000	0.599
Utility	=~	Server_Assessment_Util	0.984	0.028	35.510	0.000	0.877
Utility	=~	Manager_Assessment_Util	1.016	0.028	36.663	0.000	0.939

Constructs' discriminant validity was tested using the Fornell and Larcker (1981) criterion. This test compares the square root of the Average Variance Extracted—AVE (values presented on the diagonal of **Table 7**) with the correlations between the constructs, requiring all column and row correlations to be lower than the value posted on the diagonal. Our model presented discriminant validity for all constructs except for the correlation between "proximal" and "engagement."

Table 7. Test for discriminant validity according to Fornell and Larcker (1981) criteria.

Correlation and discriminant validity							
	Proximal	**Methodology**	**Feedback**	**Culture**	**Engagement**	**Estructural**	**Utility**
Proximal	0.722						
Methodology	0.599	0.714					
Feedback	0.686	0.391	0.914				

Table 7. (*Continued*).

Correlation and discriminant validity								
	Proximal	**Methodology**	**Feedback**	**Culture**	**Engagement**	**Estructural**	**Utility**	
Culture	0.121	–0.019	0.087	0.723				
Engagement	0.765	0.376	0.650	0.036	0.944			
Structural	0.171	0.160	0.097	0.167	0.153	0.707		
Utility	0.575	0.420	0.652	0.067	0.573	0.033	0.908	
Cronbach's alpha	0.919	0.721	0.948	0.763	0.933	0.711	0.903	>0.70
Composite reliability	0.904	0.751	0.910	0.765	0.943	0.749	0.903	>0.70
AVE	0.521	0.510	0.835	0.522	0.892	0.500	0.824	>0.50

Note: The diagonal values are composed of the square root of the AVE and must be observed as a discriminant validity criterion according to Fornell and Larcker (1981).

To test whether these constructs did not have discriminant validity, we performed the test indicated by Jöreskog (Brown, 2006; Onça et al., 2018). This test consists of restricting the correlation of the constructs you want to test discriminant validity and checking whether the change in the model fit indices is statistically significant (Brown, 2006; Onça et al., 2018). For our model, when we tested the difference between the indices of the free model and the indices of the model with the restriction in the correlation, the results were statistically significant, pointing to discriminant validity between the constructs tested.

The overall fit indices of the model were excellent (**Table 8**), all being above the minimum limits indicated by the literature (Hair et al., 2010; Malhotra et al., 2010). With this result, we can conclude that the model is valid for measuring the relationships between the constructs and that its result has validity in all indicators tested.

Table 8. Hypothesis testing and global model fit indices.

Regression hyphotetical test										
				Standard estimate	**Estimate**	**Standard error**	***z*-value**	***p*-value**	R^2	**Hypothesis**
H2 (+)	Proximal	<--	Methodology	0.383	0.570	0.085	6.705	0.000	0.6	Supported
H4 (+)	Proximal	<--	Culture	0.060	0.098	0.069	1.426	0.154		Not supported
H5 (+)	Proximal	<--	Structural	0.065	0.106	0.072	1.467	0.142		Not supported
H3a (+)	Proximal	<--	Feedback	0.533	0.874	0.089	9.832	0.000		Supported
H1a (+)	Engagement	<--	Proximal	0.466	0.381	0.057	6.699	0.000	0.4	Supported
H3d (+)	Engagement	<--	Feedback	0.165	0.222	0.094	2.354	0.019		Supported
H6 (+)	Engagement	<--	Utility	0.114	0.120	0.060	2.015	0.044		Supported
H1b (+)	Utility	<--	Proximal	0.246	0.191	0.056	3.423	0.001	0.4	Supported
H3c (+)	Utility	<--	Feedback	0.420	0.535	0.090	5.924	0.000		Supported
H3b (+)	Methodology	<--	Feedback	0.423	0.467	0.069	6.762	0.000	0.179	Supported

Note: χ^2 = 695.332; df = 265.00; *p*-value = 0.000; χ^2/df = 2.624; CFI = 0.927; TLI = 0.918; GFI = 0.869; RMSEA = 0.060.

The regression test of the relationship between the constructs indicated that all relationships were statistically significant at 5%, except those between the constructs

Culture→Proximal (H4) and Structural→Proximal (H5). Another critical point is that the explanation power of the constructs was considered good, with R^2 of 0.629 for "proximal factors", 0.446 for "engagement," 0.383 for "utility," and 0.179 for "methodology." The betas of the regressions showed median to high ratios for all hypotheses tested, ranging from 0.533 to 0.114 (Cohen et al., 2003).

10. Discussion of results

The SEM-CB results indicate that the tested hypothetical model adhered well to the empirical data from the sample matrix. This indicates the validation of the tested model, being able to generate knowledge from its application (Brown, 2006; Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003). Thus, we set out to analyze the correlation results, pointing out that all the hypotheses tested were supported by the model analysis, except hypotheses H4 and H5, which had *p*-value results greater than 0.05 or 5%.

Hypothesis H4 tested the influence of culture on proximal factors in the perception of civil servants. As the data did not support it, we can conclude that this is a minor factor in determining how IPA is applied in its proximal elements for these public servants. The result contrasts with the theory that advocates culture's moderate to strong influence on the IPA process (Hofstede et al., 2010; Odelius and Santos, 2007). Something that may explain this result is that culture is external to the evaluation process, causing a non-recognition of its influence on decisions made within the IPA process (Levy and Williams, 2004; Murphy and DeNisi, 2008).

Hypothesis H5 tested the influence of structural factors over proximal factors in the perception of civil servants. This hypothesis was also not supported statistically, indicating that, in the perception of the civil servants, the organizational structure in which they are inserted has little influence on how the process is applied. This finding contrasts with the theory that provided the basis for the study, which points to a strong influence of the structure of the civil service in how IPA is applied to the various organs and sectors (Chiang and Birtch, 2010; Bergue, 2010; Odelius and Santos, 2007). Another critical point is the stability many civil servants have in their positions and careers, even when this stability is not formal. This may have generated less interest in the influence of aspects related to the structure of applying IPA (Feitosa and Lima, 2014; Fonseca and Menezes, 2016; Sánchez-Elvira, 2018).

Within the hypotheses that were supported statistically, the one with the highest beta is H3a, which seeks to identify the influence of feedback on proximal factors. The result, with a beta of 0.533, considered to be of solid influence for a study in the social science field (Cohen et al., 2003), is in line with the IPA theory of analysis. Feedback is one of the most essential elements in an IPA process (Alves et al., 2017), especially for the factors most closely linked to the employee himself. Well-performed feedback can significantly increase the perception of satisfaction with the entire process. This happens because a flow of positive emotions and a perception that the whole process is well conducted generate a positive perception of the proximal factors (Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001).

A second important point connected to feedback is hypothesis H3c, which deals with the influence of feedback on the perceived utility of the IPA process, with a beta

of 0.420. This finding also confirms the importance of feedback for the whole process and especially for giving meaning to IPA (Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001). The influence of feedback on perceived utility is very much linked to a long-term outcome, generating a significant practical result for competency-based people management in organizations. This can lead the evaluated to modify their behavior and identify the need to develop new competencies (Gomes and Lisboa, 2020).

Still, on the feedback, we have hypothesis H3b that deals with the influence of feedback on the methodology chosen and applied to the IPA process, which obtained a beta of 0.423. With this result, we identify that feedback is the factor with the most significant influence on the positive perception of the servers about the IPA process. This positive influence is directly linked to an approval of the entire methodology applied to the process and a high perception of the usefulness of the process (Van Dijk and Schodl, 2015). Feedback shows employees how the whole process happens and justifies why a specific methodology is being applied over an existing one (Beuren et al., 2020; Van Dijk and Schodl, 2015; Peiperl, 2001).

The methodology applied to the process also strongly influenced the proximal factors (H2), with a beta of 0.383 (Cohen et al., 2003). This influence is usually anchored in legislation or practices pre-established by third parties not directly involved in the evaluation process, bringing a standardization that does not always match the reality of the evaluation, especially within public management (Bezerra et al., 2019). This fact is essential to the methodology chosen to assess the factors closest to the servers. Thus, how the process is scaled and the aspects that may be unstable, suffering small or large changes, significantly influence how employees perceive all the elements within the IPA (Guimarães et al., 1998).

The hypotheses that are related to engagement, H1a, the influence of proximal factors on engagement, with a beta of 0.466; H3d, the influence of feedback on engagement, with a beta of 0.165; and H6, the influence of perceived utility on engagement, showed statistical significance at 5%, being considered as supported by the empirical data (Hair et al., 2010; Malhotra et al., 2010). This result indicates that these factors are essential for engaging servers in the IPA process. The hypothesis with the most significant influence on engagement in the IPA process was H1a, which shows that proximal factors strongly influence servant engagement (Cohen et al., 2003). This construct is the most important as it has the highest content validity (Almanasreh et al., 2019) with nine scale items and the most significant influence on the engagement of those involved in the IPA process. This finding aligns with the theory, indicating that this construct is the most important in eliciting employee engagement (Murphy and DeNisi, 2008).

We should highlight that this construct encompasses two fundamental aspects of IPA: the perception of the process and factors related to people management. In the first aspect, we point out and analyze issues related to professional growth facilitated and even driven by the IPA process (Bakker and Leiter, 2010). This perception creates a flow of positive emotions that align with other aspects, such as the perception of utility (H6 with a beta of 0.114) and the perception that feedback is returning something positive (H3d with a beta of 0.165), making the engagement of servers

stronger with the tasks and more likely to lead them to a long-term engagement (Gomes and Lisboa, 2020). The second aspect is more linked to how the people management team responsible for applying the IPA behaves and is prepared for this process (Murphy and DeNisi, 2008; Bergue, 2010). In this aspect, the proximal factors are much more practical and linked to the relationship of the appraisee with all those involved in applying IPA in the organization to which he belongs. This perception generates greater or lesser proximity when the team presents the domain of the process and takes care in the search for the best way to apply the IPA (da Silva Monteiro et al., 2021; da Silveira et al., 2021; Bergamini and Beraldo, 2008).

Finally, it is worth drawing attention to the item on the "Relation_Evaluator_Evaluated" scale that belongs to the proximal factors construct. This item relates more to the second aspect that this construct seeks to capture. It shows that the relationship between the evaluated and their evaluators is a process considered less critical to provoking engagement. The result points to one of the most challenging problems to address within public management: political influence in choosing leadership positions (Vandenabeele et al., 2017). This form of management choice causes a delegitimization of the exercise of power, which diminishes the admiration of subordinates for their bosses, negatively influencing engagement in any activity that depends on a judgment by that boss (Jackson, 2019). This is an important finding, as it places us in front of a problem that is difficult to solve and would require further study for better clarity.

11. Discussion of practical implications

The practical implications of these findings show in a more general way that the evaluation of people within public management is multifaceted and depends on a broader, more complex, and dynamic perspective than just completing a traditional evaluation. Issues such as feedback and monitoring the process are essential for the result to be positive. In practice, the manager must consider evaluation a constant process, not just a momentary one. This issue is reinforced by the realization that much of the value of evaluation lies in feedback. This has a significant practical implication, as the manager needs to design an evaluation process based on constant feedback on the progress of established goals. Generating adequate and accurate feedback is a central issue in the people management process because people do not know which direction to follow without feedback.

The low importance given to culture and structural factors indicates that, in practice, managers can generate greater standardization in evaluation processes. This happens because a lower perception of the influence of organizational culture on the process generates less need to adapt the assessment to the cultural specificities of each department or unit. The low perception of the influence of the structure on the evaluation reinforces this finding.

Finally, managers must develop a transparent evaluation process with a well-developed methodology that is organized and previously presented to employees. This issue has a substantial practical impact, as a process that changes during its validity tends to cause discomfort and is not transparent.

12. Conclusions

Modern HR management emerges due to a more unstable and challenging external environment, prompting a more strategic positioning of HR within organizations (Ulrich et al., 2011). Strategic Human Resource Management (HRM) assumes the alignment between enabling understanding and generating strategies for solving problems, HR practices, and the strategic objectives of the organization (Lengnick-Hall et al., 2009). This includes all activities associated with people within the institution, such as training, recruitment and selection, development, and performance evaluation. This alignment encourages HR managers to include strategy concepts daily (Allen and Wright, 2007).

The need to include strategy concepts within HR management increased managers' concern about individual behavior and how this behavior was related to the achievement of goals (Fisher, 2002). Promoting the development and application of this new look in HR increased the resources needed for people management. This aroused a keener look from top management at their organization. This look produced the obligation to justify the investments made, raising the importance of the IPA of employees and the metrics of goal achievement (Lacombe and Albuquerque, 2008).

In public management, effectively managing the performance of public servants has been necessary since Weber's bureaucratic administration (Cunha et al., 2018). Within modern public administration management, IPA is one of the essential tools for all managers to identify the competencies and potential of their employees (Špalková et al., 2015). Seeking to fill this gap, we formulated the following research question: Which factors, as pointed out by theory, have the most significant influence on the individual performance appraisal process?

Based on this question, we proposed the objective of identifying the factors by proposing a measurement scale and a model to identify which factors managers should focus on within the IPA process to have greater chances of success in this task. This objective makes the study unprecedented in Brazil and with few similar studies worldwide, mainly when applied with a quantitative and public management-oriented view.

The research question was fully answered with the validation of the measurement scale of the IPA process—MIPAs, which captured, through 25 items, the main aspects related to the IPA application process in the perception of the civil servants themselves and the formulation and testing of the MIPA hypothetical model by SEM-CB. The identified scale has seven dimensions or specific constructs: factory proximal, feedback, culture, methodology, engagement, structural, and utility. Each of these constructs addresses particular questions and comprises items from the scale that relate to what they are reflecting. The methodology was well structured, following the best practices suggested by the theory of scale construction, validation, and theory testing (Hinkin, 1995; Almanasreh et al., 2019; Charmaz, 2006; Dixon-Woods, 2010).

With the scale validated and the constructs identified, we turned to theory to structure a hypothetical model that identified six main hypotheses, with H1 divided into two parts, "a" and "b", and H3 divided into four parts, "a", "b", "c", and "d" totaling 10 hypotheses. Of these hypotheses, only H4 and H5 were not supported by the data. H4 dealt with the influence of culture on proximal factors, and H5 dealt with

the influence of structural factors on proximal factors. These two findings indicate that the servers are not considered crucial for the proximal factors, the general culture that generates influence on the process, or the structure as a whole, such as the number of servers or hierarchies in which they are inserted in the public management. As for the finding of the perception of the non-relevance of culture to the IPA process, considering both the agency, the public service, and the country, it may be linked to the fact that culture is something external to the IPA process (Levy and Williams, 2004; Murphy and DeNisi, 2008). As for Hypothesis H5, which deals with the structure in which the servant is inserted, its lack of support indicates that agencies and other structures are not essential to shaping the process of building IPA. This perception happens because, first, the whole process is determined by political agents who are distant from the IPA process (Chiang and Birtch, 2010; Bergue, 2010; Odelius and Santos, 2007), and second, its form and application are standardized, suffering little influence from the specific structure of each ministry, body, or department (Chiang and Birtch, 2010; Trevor et al., 2012). The greater rigidity of management processes differentiates this particular characteristic of public management from private initiative (Pires and Macêdo, 2006).

As for the other hypotheses supported by the analysis of the SEM-CB results, we highlight two specific groups: the hypotheses linked to feedback and the hypotheses linked to engagement. The hypotheses linked to feedback (H3a, H3b, H3c, and H3d) indicate that feedback is among the most essential elements in making the IPA process meaningful. Its influence is strongly felt on the proximal factors, utility, and methodology constructs. Feedback also influences engagement, but to a lesser extent than the proximal factors, but still, in a proportion considered medium influence (Cohen et al., 2003). These findings indicate that the manager should pay special attention to feedback because the better and more frequent the feedback, the better the IPA results. Acting on the amount and manner of applying feedback within the IPA process will bring the public manager short- and long-term gains (Gomes and Lisboa, 2020), in addition to providing a gain for the process itself, by acting on the general perception of the server and not only in their engagement, acting to improve the perception of meaning for all involved.

Finally, it is worth highlighting the hypotheses related to engagement since this is the consequent construct of the tested model and is the answer to the research question. The data supported hypotheses H1a, H3d, and H6 and indicated that proximal factors, feedback, and utility influence the engagement of those involved in the IPA process. This finding is in line with the theory. It shows managers that of these aspects, they should focus on the proximal factors because this is the one that generates the most influence on the engagement of employees in the IPA process. The greater the servers' importance to the proximal factors, the greater their engagement with the whole process (Allen and Wright, 2007; Barney, 1991; Fisher, 2002; Huselid, 1995; Ammons and Roenigk, 2015; Lee, 2017; Bergue, 2010).

The proposed objectives for the study were all met, as we measured the scale and determined the factors that influence the engagement of those involved in the IPA process using EFA (Bido et al., 2018; Hinkin, 1995; Almanasreh et al., 2019; Charmaz, 2006; Dixon-Woods, 2010). The objective of proposing and testing the

hypothetical model, on the other hand, was achieved through the literature review after identifying the critical constructs of the process and applying SEM-CB to the empirical data to test whether the proposed model had validity (Hair et al., 2010; Malhotra et al., 2010; Cohen et al., 2003; Onça et al., 2018).

The main theoretical contribution was the construction of the MIPAS scale and the hypothetical model to identify employee engagement, MIPA. The practical contribution was identifying the constructs managers should focus on to improve the IPA process with their subordinates, helping increase employee adherence to the process.

The restrictions presented in the study are linked to how the sample was collected, as it was conducted by convenience, which may have embedded some selection bias. Another point is the non-response bias of people who are dissatisfied or even not engaged with the evaluation process. As proposals for further research, we indicate the possibility of applying the questionnaire and testing the model in other cultural realities within the country itself, such as the application in municipalities and states of the federation and even in other countries, to verify the validity of the findings of this study. We also indicate using a probabilistic sample to rule out the possibility of sample selection bias in the testing process.

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