


ARTICLE

Management Public Accounting: An Analysis of Cost Information in the Light of Public Managers' Perception

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ABSTRACT

This article aims to investigate the usefulness of cost information in the Brazilian federal government, through observation and empirical analysis of the perception of public managers, who are the main users of this information. The data collected from managers of different government entities were treated using the Multicriteria Decision Aid (MCDA) methodology, in order to highlight the interviewees' perception of the purposes, conditions, and mechanisms of access to information. The results showed broad recognition by managers about the usefulness of information, triggering a discussion that puts forward that the vast standardization, the search for improvements in accounting standards, and technological advances are not enough for innovative cost management practices to be successful in public organizations. These reflections indicate the need for alignment between information generated by the cost system and its users, that is, between cost accountants and cost managers, so that the institutionalization of the system does not become a mere formalism of the public sector bureaucracy.

KEYWORDS

Cost Accounting, Cost System, Multicriteria, Public Administration

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RESUMO

O artigo tem como objetivo investigar a utilidade da informação de custos no governo federal brasileiro, mediante observação e análise empírica da percepção dos gestores públicos, principais usuários da informação. Os dados coletados junto a gestores de distintas entidades do Governo Federal foram tratados mediante metodologia Multicriteria Decision Aid (MCDA), a fim de evidenciar a percepção dos entrevistados sobre propósitos, condições e mecanismos de acesso da informação. Os resultados demonstraram amplo reconhecimento dos gestores sobre a utilidade da informação, desencadeando a discussão de que a vasta normatização, a busca por melhorias nos padrões contábeis e os avanços tecnológicos não são suficientes para que práticas inovadoras de gestão de custos sejam bem-sucedidas nas organizações públicas. As reflexões indicam a necessidade de alinhamento entre informações geradas pelo sistema de custos e seus usuários, ou seja, entre contadores de custos e gestores de custos, para que a institucionalização do sistema não se traduza em mero formalismo da burocracia do setor público.

PALAVRAS-CHAVE

Contabilidade de Custos, Sistema de Custos, Multicritério, Administração Pública

Historically, for decades, the Brazilian legal system has had extensive legislation on the subject of costs in the public sector, with emphasis on the obligation of accounting in the calculation of costs for the disclosure of government results, as well as for monitoring and evaluating government management.

However, normative acts are not enough for innovations such as the cost system to be institutionalized as useful tools for decision-making processes in public administration. Managers need to recognize the usefulness of the information generated in these systems in addition to the usual ones they have for controlling the flow of budgetary resources.

Currently, in the face of the process of converging to international standards, the Brazilian public sector seeks to adapt to the changes that accounting science has gone through over the last few years, considering public wealth as the main object of government accounting.

Despite the cultural and institutional aspects of the Brazilian context, as the convergence process evolves with a focus on equity and its variations, benefits can be expected by users of management accounting systems on information to control government costs. According to Pereira and Silva (2003), as the public sector, unlike the private sector, does not aim at profits, the search for cost control would be more focused on a better application of resources, which would promote a more efficient distribution of expenses, in order to serve the largest number of “customers”.

When considering the accounting system as the primary data source for cost information, it is worth noting that, despite the efforts of the Brazilian government to converge to international standards, according to Benito et al. (2007), the focus on budgetary control by managers may be a limitation to the usefulness of information based on the accrual basis in the public sector. Furthermore, there is no consensus in the literature on the benefits of convergence. Changes in accounting standards within a country do not just involve formal approval of standards. Institutional adjustments are also necessary for wide acceptance by the government to occur (Lima, 2017; Azevedo & Pigatto, 2020).

In their study aimed at public organizations of the US government in the application of management cost accounting systems, Morh (2017) highlights the lack of research that shows the use of cost information influencing important management decisions in the public sector. It also reveals that investigations in this area may lead to the identification of different cost accounting practices that may lead to different understandings of government costs.

In this context, investigating the perception of public managers of the Brazilian federal government on aspects related to the usefulness of cost information is presented as a crucial task for those who wish to better understand management accounting as applied to the public sector, and its implications within the scope of government organizations. Thus, the cost system will not become a merely ceremonial instrument, but a system capable of contributing as an instrument of public governance.

Therefore, this research sought to answer the question: what is the perception of the public managers of the Brazilian federal government about cost information regarding purposes, access mechanisms, and necessary conditions for the usefulness of the information?

The contribution of the study in the field of management accounting reveals the provocation of researchers and professionals in the public sector about the need to explore these aspects of information, so that cost systems in the public sector can effectively contribute to the processes of support for decision-making and accountability of government managers.

In view of the above, this research objective is to investigate aspects of the usefulness of cost information within the scope of Brazilian federal government organizations, through observation and empirical analysis of the perception of the managers themselves, since they are the primary users of the information. The discussion on the research findings intends to provoke reflection on the importance of aligning the information generated by the cost systems with the managerial needs of the decision-making processes of their users so that practices and policies that should be innovative in government management do not become a mere formalism of the public sector bureaucracy.

2. LITERATURE REVIEW

2.1. COST ACCOUNTING IN THE BRAZILIAN PUBLIC SECTOR

Historically, the current Brazilian legislation has a vast legal framework on calculation, disclosure, and management of costs, which we can highlight: the obligation of accounting in the calculation of costs, in order to emphasize the results of the management (Decree-law No. 200, of 1967 and Decree No. 93.872 of 1986); of the Public Administration to maintain a cost system that allows the evaluation and monitoring of budget, financial, and asset management (Law No. 101, of 2000); and of accounting, through the disclosure of the costs of programs and units of the Public Administration (Law No. 10.180, of 2001).

In compliance with legal requirements, the Brazilian government instituted a cost system for the federal government authorities, called *Sistema de Informação de Custos*, SIC (in English, the Cost Information System), seeking to implement a culture of using cost information for management purposes in the public sector (Holanda et al., 2010).

However, in their research on the implementation of the cost system proposed by the federal government, Borges et al. (2012) argue that factors other than the development of a technological tool, such as SIC, are necessary for the success of a cultural change to actually occur in the public sector. The authors highlight the need to develop mechanisms of incentives, both formal and informal, so that the system is incorporated into the routine of public managers.

In recent years, in view of the convergence to international standards, the Brazilian Accounting Standards Applied to the Public Sector (*Normas Brasileiras de Contabilidade Aplicadas ao Setor Público*, NBC TSPs), issued by the Federal Accounting Council (*Conselho Federal de Contabilidade*, CFC), have started to highlight accounting procedures, previously having focused on budget control and monitoring, with the object of measuring the assets of government agencies and entities (STN, 2013). Convergence in the public sector has come to posit public wealth as an essential object of accounting (Couto & Moraes, 2019).

This normative review redirects the focus given to budget accounting to accrual accounting, impacting financial information, requiring the production of new documents, and also adding a managerial bias in the production of reports, especially in relation to the calculation of costs in the public sector (Borges, 2012; Dantas & Crozatti, 2014).

In the face of the change in focus, taking into account that public assets and their variations are the main objects of public accounting, expectations arise for qualitative improvements in cost information in view of the possibility of optimizing its main source of data: the accounting system. According to Torres (2004), modernizing accounting through convergence to international standards would benefit cost measurement and efficiency in management decision-making processes.

Accrual basis accounting helps to identify the total costs of activities, allowing for better decision-making in resource allocation, greater government control, and better capital investment decisions (Martí & Kasperskaya, 2015).

On the other hand, Monteiro (2012) highlights that the adoption of accrual basis, as a consequence of convergence, may be the result of mimetic and coercive isomorphism without due reflection on the expected results in Brazil. The author emphasizes that its adoption cannot be considered a panacea which would be responsible for eliminating the existing evils in the consumption of resources used in the generation of goods and services made available to the population by the government.

Despite the improvements claimed by authorities that seek convergence, the topic is quite controversial due to the cost and structural changes required, such as adequate training and acceptance by public managers (Sousa et al., 2013). The rhetoric that the changes will improve the efficiency, transparency, and accountability of government agencies is still not clear in Brazil (Diniz et al., 2015)

Recently, CFC issued NBC TSP 34 - Costs in the Public Sector (*Custos no Setor Público*), providing that the cost of the period must be calculated on the accrual basis, regardless of budget execution. According to Norma, what determines the cost of the period is the moment of consumption of resources for the generation of goods or services, identified by the accounting taxable event (CFC, 2021).

It is worth mentioning that there are recent initiatives in the Public Administration, such as Brazil's Federal Government Cost Portal (*Portal de Custos do Governo Federal*), which seeks to draw the attention of citizens and, above all, to sensitize managers and public agents in general regarding the relevance of looking at the resources consumed by organizations in the provision of public service (STN, 2019). According to Carvalho et al. (2012), this seems to be a good example that the success of a management accounting system is clearly dependent on adequate support for the implementation of innovation processes, such as political commitment and investments in technology and in human intellectual capital.

The biggest challenge has been, according to Machado and Holanda (2010), to make cost information useful to the decision-making process, essentially in order to facilitate the task of the public manager in the quest to maximize the results of resources for society. In addition to complying with legislation, cost systems also need to be useful for management, contributing to the efficiency of government spending (Rosa et al., 2015).

2.2. PUBLIC MANAGER, THE MAIN USER OF COST INFORMATION

When discussing costs in the public sector, special attention should be given to the information user. In their approach to cost accounting, Rivenbark (2005) clarifies that accounting terminology is often used interchangeably depending on how economic and financial data are summarized for decision-makers.

The Manual of Brazil's Federal Government Cost (*Manual de Informações de Custos do Governo Federal*) classifies managers, responsible for decision-making that results in the consumption of public resources, as the main users of cost information. This is, from the strategic perspective, focused on government programs, up to the operational perspective, aimed at evaluating the performance of each body (STN, 2018).

Managers are considered the main users because they are responsible for managing public resources and offer a clear view of how the entity's governance leads to the generation of public

value, in addition to justifying the results achieved in the face of established objectives (CFC, 2021).

When dealing with cost accounting in the public sector, it is relevant to highlight Mohr's (2017) statement: governments do not need cost accounting to survive, and profitability is not the main reason for government activities. But if the measurement of profit is not the reason, why do public managers need cost information?

There are several answers in the literature, but a brief and objective one was observed by the International Federation of Accountants (IFAC) (2000), providing that the measurement of profitability in the private sector can be seen in an equivalent way as the performance measurement in the public sector. According to Morh (2015), when performance measurement and cost accounting systems are discussed in public administration, the literature tends to defend the claim that they work together and support each other.

In this direction, when dealing with cost management in the public sector, NBC TSP 34 highlights the need for improvement in the allocation of resources and the identification and measurement of deliveries, with emphasis on performance evaluation. It even assigns responsibility to public managers for the use of cost information in their decision-making processes.

Nevertheless, according to Machado and Holanda (2010), the success of the implementation of the cost system by public entities does not depend only on the legal requirement or on the refinement of its conceptual structure; it is essential that users perceive the usefulness of the information in order to control and improve their activities and improve the decision-making process. Borges et al. (2012) highlight the need to disseminate the managerial discourse in the state apparatus so that it overlaps the patterns already identified by the bureaucracy as legitimate conceptions of the effective way of managing public affairs.

Borges (2012) emphasizes the lack of preparation of the public sector bureaucracy in the preparation of adequate management accounting reports and of the managers in understanding and using these reports to guide their actions in the administrative routine, even in a management environment aimed at results. It is also worth noting that, historically, the budget has been presented as the main management document in the public sector. It focuses only on the cash flow for a period, ignoring other flows of economic resources that affect the government's ability to provide current and future benefits to the population (Torres, 2004; Pigatto et al., 2010).

The promotion of efficiency in the public sector depends on the access of managers to reliable information on the cost incurred by the effective consumption of the economic resources used in the service provision. Without knowing the costs, it is impossible to assess whether the results obtained could be substantially improved, or whether they could be achieved with lower use of human, material, and financial resources (Rezende et al., 2010).

2.3. ASPECTS OF COST INFORMATION THAT ARE USEFUL TO PUBLIC MANAGEMENT

Once the relevance of the manager as a user of cost information in the public sector is recognized, it is important to investigate which aspects should be considered so that this information is recognized as useful, and so that the cost system institutionalized in organizations is not restricted to the formality of complying with legislation.

In their study on the diffusion of innovations in the public sector, Lapsley and Wright (2004) observed that, for the management of healthcare organizations in Scotland, the purposes of cost information are strongly focused on efficiently measuring performance through access to detailed information on costs of procedures, costs of specialties and functional costs, as observed by the public accountants participating in the research. The authors point out that the successful

adoption of instruments such as the cost system seems to be more likely when organizations have government support or when they are required to efficiently manage their costs.

Flury and Schedler (2006) directed their research to specialists (politicians, managers, and consultants) in public accounting in the Swiss government, to verify the perception of the purposes of cost information, in which they mainly verified the usefulness as a basis for the budget and the performance evaluation.

In the Netherlands, in a survey carried out by Verbeeten (2011) with managers of public organizations, despite the recognition that the usefulness of information can reduce costs, decentralize activities, offer opportunities for performance management and increase managerial responsibility; the results indicated that cost management systems are mainly used to satisfy regulations and legitimize the organization's activities before external stakeholders, rather than contributing to the management of organizations.

Carvalho et al. (2012) explored the factors of the use of the cost system in the government of Portugal and observed that the use of cost information in the decision-making process of managers is still a mirage. The authors obtained evidence that the lack of management support is an obstacle to the implementation of the cost system, and that external pressures can also lead to the institutionalization of the system in the quest to legitimize the organization with external stakeholders.

In Croatia's public sector, there is an emphasis on cost information for the purposes of budgeting, evaluating government programs, controlling and reducing costs, and setting prices and tariffs for goods and services. Furthermore, the format of the reports should be defined by public managers themselves, in order to meet their needs for effective decision-making (Lutilsky et al., 2012). Interestingly, it is worth noting that, according to these authors, in view of what was observed in almost all public organizations responding to the survey, the change from the cash basis to the accrual basis would not considerably improve the planning, recording, monitoring, and control of costs.

Still, in the study of Lutilsky et al. (2012), important aspects are highlighted, based on the observation of the research participants, regarding the necessary conditions for the usefulness of the information: clear definition of the needs of internal users at different hierarchical levels of decision-making; assessment of accounting personnel and technical capabilities to respond to information needs; definition of organizational requirements on methodology and system for calculating costs; and comparability of costs of similar activities domestically, nationally and internationally.

In a more recent study in the Croatian public sector, Rogošić (2021) directed her research to public accountants and public entities that were more familiar with the use of budget information. The author observed that the level of use of cost information in decision-making affects the planning and control of costs. She also noted that access to information would be improved if the visualization of data by dashboards were included in the reports, with warning signs for an intuitive and more thorough examination. Furthermore, the biggest obstacles to the development of cost accounting are the lack of financial, technological, and political support.

3. METHODOLOGY

The methodological proposal was guided by the research object, which was cost management information in the context of the Federal Government. It was based on empirical material guided by the application of an electronic questionnaire, in order to draw a structured mapping of the perception of public managers about information in the scope of government authorities and entities.

This research was directed to public managers from different Federal Government agencies and entities as a way to collect the perceptions of managers from different segments in which public services are provided, and cost information could support decision-making processes.

The aspects of managers' perception, called criteria in this study, were applied in a multicriteria analysis methodology called Multicriteria Decision Aid (MCDA), using the MyMCDA-C software.

The MCDA methodology seeks to develop a model that helps decision-makers to shape and validate their own values (Rodrigues, 2014). It can be seen as a non-linear recursive process composed of the following phases: structuring the problem into a decision; articulation and modeling of preferences; aggregation of preferences; and carrying out the recommendations (Guitouni & Martel, 1998).

The MCDA methodology was chosen for the treatment of the collected data due to the possibility of aggregating several criteria for evaluating the perception of managers, in which the relevance attributed to each of the criteria, through the corresponding contribution rates and levels of effort, could offer a structure of possible observations on the purposes, conditions, and mechanisms of access to those who intend to benefit from cost information in the public sector.

The identification of the criteria that served as the basis for the formulation of the questionnaire was initiated through the technique of brainstorming, in order to collect direct and voluntary perceptions of different public agents that could contribute to the objective of the research. Therefore, according to Silva (2007), there is an exchange of points of view and ideas, with spontaneity and without privileging particular individuals or positions, so that all ideas are considered in the discussion.

The brainstorming rounds took place with the participation of three pairs of public agents, selected due to their experience and representativeness on the subject of costs in their bodies of exercise, with the following composition (Table 1).

Then, through discussion in a focus group format, the criteria of the brainstorming rounds were filtered and validated, and their contribution rates and effort levels were defined. According to Parent et al. (2000), interactive focus group discussions help to maximize results, through the synergy that the joint effort of a group can provide.

Table 1

Brainstorming Rounds

Position or Function – Training	Current organization	Time in Public Administration
Round 1		
Federal Auditor of Finance and Control - Accountant	National Treasury Secretariat	6 years
Coordinator – Accountant	Brazil Communication Company	7 years
Round 2		
General Coordinator – Accountant	Ministry of Education	10 years
Statistics	Ministry of Health	8 years
Round 3		
Judicial Analyst – Accountant	Superior Court of Justice	28 years
Accountant	National Treasury Secretariat	6 years

Source: Prepared by the authors.

The aforementioned contribution rates and effort levels sought, respectively, to identify the extent to which each criterion contributes to the overall assessment and to classify the same criteria by the degree of effort required on each of them to improve the observed scenario. That is, the contribution rate assigns weight to the criterion, indicating its greater or lesser contribution to the result, while the order of the level of effort indicates the necessary effort on the criterion, in relation to the others, in order to achieve the best result.

In the focus group debate, six public agents working in the Federal Government's central cost agency, National Treasury Secretariat (*Secretaria do Tesouro Nacional*, STN), participated in the discussion that had the following composition (Table 2).

Table 2

Focus Group

Position or Function at STN - Training	Time in Public Administration
Federal Auditor of Finance and Control - Accountant	6 years
Federal Auditor of Finance and Control - Accountant	6 years
Federal Auditor of Finance and Control - Accountant	6 years
Federal Auditor of Finance and Control - Economist	25 years
Accountant	13 years
Accountant	6 years

Source: Prepared by the authors.

The selection of these public agents was justified as adequate for this study because they represent the central cost agency of the Federal Government, which is responsible for the implementation and operation of the Federal Government Cost System, as provided in STN Ordinance No. 157, of 2011.

Given the premise of the study, the definition of criteria (purposes, conditions, and access mechanisms) and corresponding sub-criteria, through brainstorming rounds and focus group debate, was guided by the search for managers' perception to recognize the usefulness of the cost information within the scope of public organizations.

After classification and framing, these criteria were transformed into questions for the managers' perception assessment questionnaire, in which the answers varied between: N5(+++) it contributes a lot; N4(+++) it contributes; N3(+) it contributes little; N2(0) indifferent (does not contribute or harm); and, N1(-) it harms (due to the expense or effort for this purpose). Given this definition, the minimum point with a negative value (N1) and maximum positive value (N5) of the expected results of the MCDA-C methodology were established.

In order to reach public managers, the digital form with the research questions was created using the Google Forms tool and distributed by the authors (public servants) by email amongst their circle of professional contacts of managers working in the Federal Government. Data collection using the form took place between May and June 2020.

The questionnaire had 41 respondents, 2 of whom were considered as invalid because they had less than 1 year of experience as public managers, which made them unfeasible as participants in the desired sample. In other words, 39 public managers effectively collaborated with the research, emphasizing their views on cost management information in the context of public organizations, which allowed the development of the purposes intended in the study.

After the questionnaire was applied, data tabulation became essential for defining the reference score for each criterion. According to Rodrigues (2014), in the MCDA-C model, the score that indicates the level of impact of the respondents is given by calculating the median. Thus, the results were tabulated, based on the frequency of responses, to identify the median and define the reference scores.

From the reference score of each criterion, indicated by the median, the following formula is used to apply the contribution rates and verify the final value of the criterion's performance.

$$V(a) = W1*V1(a) + W2*V2(a) + W3*V3(a) + \dots Wn*Vn(a)$$

Where: $V(a)$ = total *status quo* value

$V1(a)$, $V2(a)$, to... $Vn(a)$ = partial value of criterion 1, 2, 3, ..., n.

$W1$, $W2$, ..., Wn = contribution rate of criterion 1, 2, 3, ..., n.

n = number of the model criteria.

Below, Table 3 presents the criteria with the respective contribution rates and levels of effort, for a better understanding of the methodology presented. In fact, the results of the median frequency can be observed in the last column of the table, calculated in view of the responses related to each criterion.

Table 3

Relation between Criteria, Contribution Rates, Levels of Effort and Results

Criterion	CR	LE	Subcriterion	CR	LE	LE General	Median Result
1. Purposes	30%	2°	1.1 Support for performance measurement	20%	2°	8°	N5
			1.2 Control for rational use of resources	30%	3°	11°	N5
			1.3 Support for management of processes/ activities	40%	1°	5°	N5
			1.4 Accountability	10%	4°	14°	N5
2. Conditions	50%	1°	2.1 Incentive and active participation of top management	25%	1°	1°	N5
			2.2 Organizational culture change	15%	2°	2°	N5
			2.3 Definition and identification of deliveries performed (services provided)	15%	4°	4°	N5
			2.4 Process mapping (value chain)	15%	3°	3°	N5
			2.5 Creation of an internal cost management unit	10%	7°	13°	N5
			2.6 Obligation and penalty on cost management	10%	5°	7°	N4
			2.7 Familiarity with cost terms and concepts	10%	6°	10°	N5
3. Access Mechanisms	20%	3°	3.1 Flexible and customized cost report, according to the manager's needs	50%	1°	6°	N5
			3.2 Cost report made available by the agency on the internet and/or intranet	20%	4°	15°	N5
			3.3 Federal Government Cost Portal	10%	3°	12°	N4
			3.4 Management report in the form of an integrated report	20%	2°	9°	N5

Caption: CR – Contribution Rate; LE – Level of Effort.

Source: Prepared by the authors.

The analysis of the results was based on the graphs and tables from the MyMCDA software used in the research methodology presented, as shown in the following topic.

4. MULTI-CRITERIA ANALYSIS OF COST INFORMATION

4.1. PROFILE OF PUBLIC MANAGERS

We present here some characteristics of the 39 managers interviewed, which are emphasized, in order to highlight the profile of the respondents of the sample object of the study. Firstly, managers were segregated by the time of management performance in the public sector (Figure 1).

Next, the agencies or entities in which the managers currently work were identified (Figure 2).

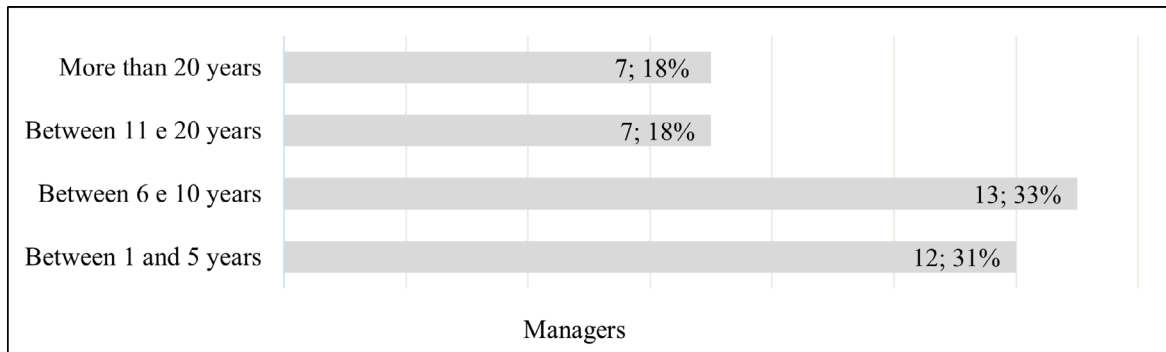


Figure 1. Time working as a Manager

Source: Prepared by the authors.

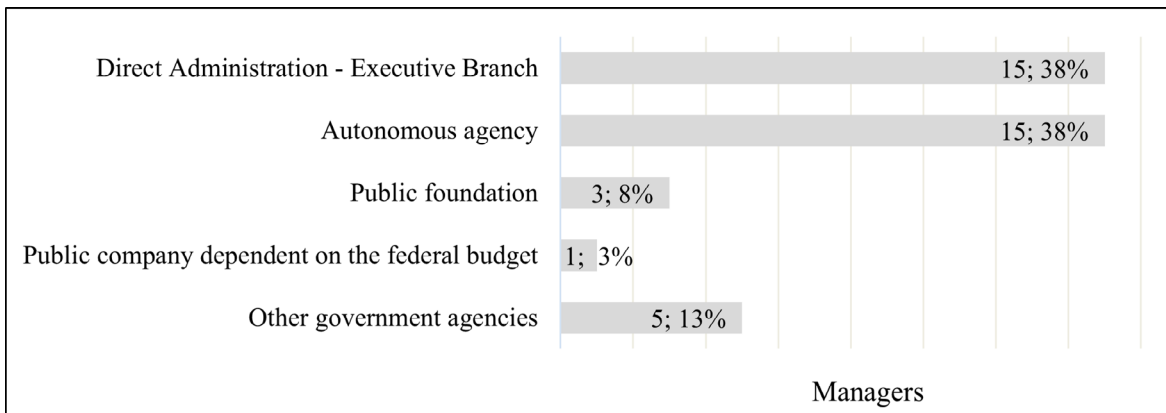


Figure 2. Agency or Entity

Source: Prepared by the authors.

Finally, managers were asked about the use of information in their decision-making processes. In this regard, it is important to emphasize the importance of understanding the meaning of the cost information presented in the questionnaire, for the correct answer to the question by the manager, in order to facilitate the understanding of the questions presented in the research. In the introduction to the questionnaire, it was clarified to the responding manager that the cost information corresponds to the volume of economic resources consumed in the generation of public goods or services.

This warning is important because, in the public sector, there is some confusion in this matter since it is common for public agents to associate cost information with the flow of financial execution of budget expenditure (cash basis), without the necessary relationship with the effective consumption of assets (accrual basis). According to Rezende et al. (2010), to measure costs, it is necessary to know the resources effectively consumed in the provision of a certain good or service in a given period.

That said, according to Figure 3, 46% of respondents said they do not use any cost information in their decision-making processes, as shown below.

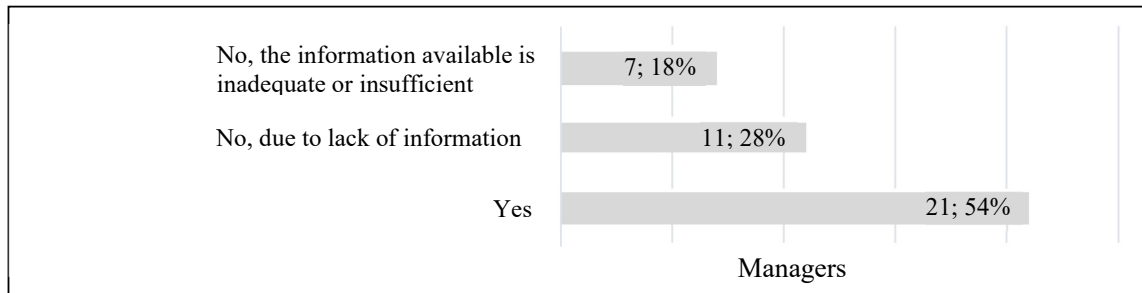


Figure 3. Use of Cost Information

Source: Prepared by the authors.

This observation is important because, despite the general result of the research showing the recognition of the relevance of cost information by all respondents, almost half (46%) of the managers indicated that they did not have any practical experience in managing their processes with the support of the cost system, either by the total absence of information (28%) or by the available information being inadequate or insufficient (18%).

4.2. CRITERIA ANALYSIS

The analysis of the results from the MCDA-C model occurs first by each family of criteria, to verify the managers' perception, considering the contribution rates and effort levels defined in the focus group.

In the analysis of the graphs, the 'Maximum' and 'Minimum' are defined based on the level of effort established in the focus group and the 'Actual' score achieved in the result of the median position (N1/N2/N3/N4/N5) of each manager's response to the questionnaire. Thus, in view of the score obtained with the formula of additive aggregation of contribution rates, the maximum and minimum points are established representing the effort required in steps to achieve the improvement of the scenario represented by the criterion.

Finally, in item 4.2.3, the analysis takes place in a global and cross-sectional manner, through discussion and listing of information from the various criteria.

4.2.1. Information Purposes

As shown in Figure 4, the maximum score observed by the median was reached in all criteria: support for performance measurement; control for rational use of resources; support for the management of processes/activities; and, accountability.

Notably, there was confirmation that cost management information can contribute a lot to achieving these purposes. In fact, the range of expected results in the graph covered almost all the responses in all criteria, indicating the contribution desired by managers on the information.

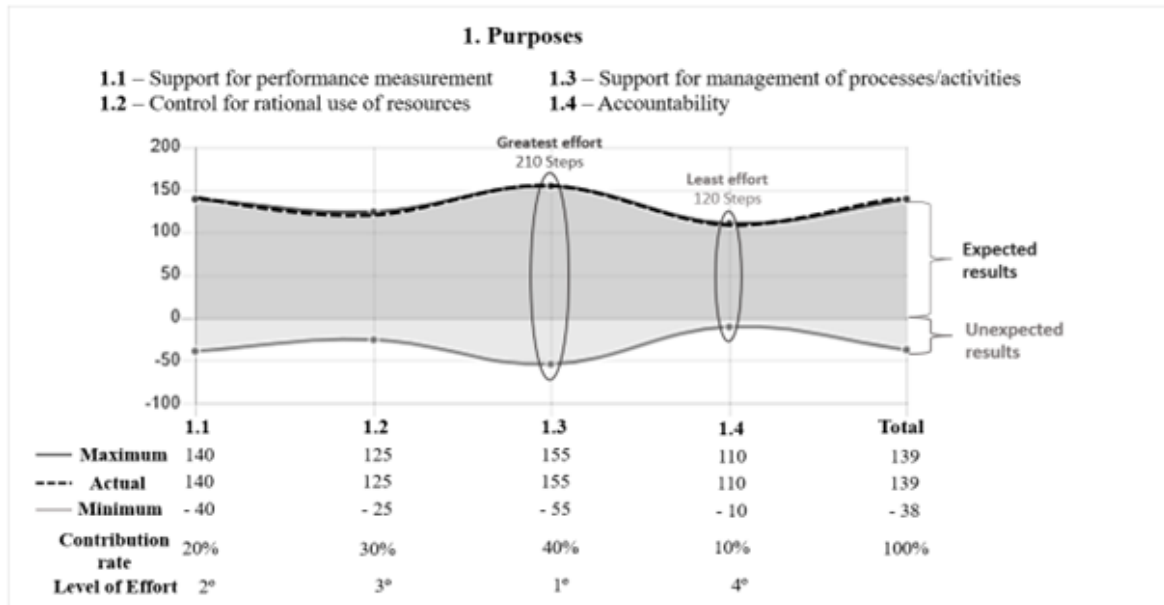


Figure 4. Information Purposes
Source: Prepared by the authors.

In general, the analysis of the data on the purpose criterion allows the observation that managers tend to praise the relevance of information that can benefit public management, given the high contribution observed in the results of the responses. Thus, there are no reservations about the verification of the power of cost information for managers, and it is necessary to advance the analysis of the corresponding contribution rates and levels of effort, in contrast to the results of previous studies.

Relevant information portrayed in Figure 4, as a result of the observations in the focus group, concerns the criteria in relation to the level of effort to improve the scenario. In this sense, the information applied to support the management of processes/activities (1.3) demands more effort for its effectiveness, 210 steps on the model scale between the minimum and maximum points [-55, 155]. While the information for accountability (1.4) requires less effort, 120 steps, for its best contribution [-10, 110].

Despite requiring the highest level of effort, criterion 1.3 has the highest contribution rate (40%), which can justify the investment in generating information to achieve this purpose. This criterion draws attention to the high effort in order to achieve its benefits in view of the need to map processes/activities and the possibility of adopting Activity-Based Costing (ABC) in the allocation of costs. The high contribution rate in contrast to the high level of effort of the criterion reflects the recommendations of studies (Brown et al., 1999; Vazakidis et al., 2010) that investigate the use of ABC and activity-based management, recommending the cost-benefit assessment of implementation in public organizations.

This connection with previous studies is relevant, as it refers to issues that demand attention in the allocation of costs of public goods and services through the mapping of processes/activities using ABC. Although it is an intelligent procedure when it directs resources to activities and activities to products, ABC is based on the indirect allocation of costs (Leone & Leone, 2007). In assessing the cost-benefit of its use, regardless of the segment or area of activity of the organization, the allocation of indirect costs requires great attention, as it is the most fragile aspect of the methodology of a cost system (Leone & Leone, 2007; Horngren et al., 2004).

Criterion 1.4, also highlighted by Verbeeten (2011) regarding the need to hold managers accountable in the application of public resources, presents the least effort (120 steps), but with a low contribution rate (10%), which needs to be considered in the evaluation of the effectiveness of the information for this purpose. It is worth noting that, according to Lapsley and Wright (2004), the successful adoption of the cost system seems to be more likely when organizations are forced to efficiently manage their costs, thus making managers responsible for the application of resources.

This contrast leads to the necessary reflection on the effects of coercive pressure carried out by control agencies on Brazilian public organizations, considering that, according to the results of the data from this research, there is less emphasis on information on costs for the purpose of accountability.

Also, noteworthy are the results obtained in the criterion control for rational use of resources (1.2), which, in addition to achieving the maximum score in the expected results, has a high contribution rate (30%). This corroborates the central idea of the research by Helden and Huijben (2014), which indicates the need to adopt control mechanisms over indirect or general costs in public sector organizations.

It is important to highlight how attractive ABC can be in this sense, but we must consider the cost-benefit assessment of its use. According to Kaplan and Cooper (1998), the difficulties of implementing the ABC are even greater than those faced in industry, since in the provision of services there is a large volume of indirect expenses.

Finally, despite managers' recognition of the criterion support for performance measurement (1.1), its contribution rate (20%) was considered modest in view of the relevance given to this purpose in studies on the subject (Brown et al., 1999; IFAC, 2000; Lapsley & Wright, 2004; Flury & Schedler, 2006; Verbeeten, 2011).

4.2.2. Information Conditions

In the analysis of the results on the information conditions in Figure 5, the maximum score observed by the median was not reached only in the criterion obligation and penalty on cost management (2.6), in which some respondents even considered it harmful as a condition for the effectiveness of information for its purposes. However, the range of expected results covered most of the responses, indicating that in the general assessment of managers, the conditions indicated contribute a lot to making cost information a reality in the context of public organizations.

In the analysis of the criteria individually, it is worth highlighting the condition related to incentive and participation of top management (2.1), which has the best contribution rate (25%) among the "Information Conditions" and the highest level of effort (250 steps). This result is supported by studies that highlight the political aspect as a determinant for the success of cost management practices in the public sector (Lapsley & Wright, 2004; Carvalho et al., 2012; Lutilsky et al., 2012; Rogošić, 2021). The broad connection of the results of this criterion with the observation of several previous studies allows us to infer that the incentive and participation of top management are crucial as a condition for the usefulness of cost information in Brazilian public organizations.

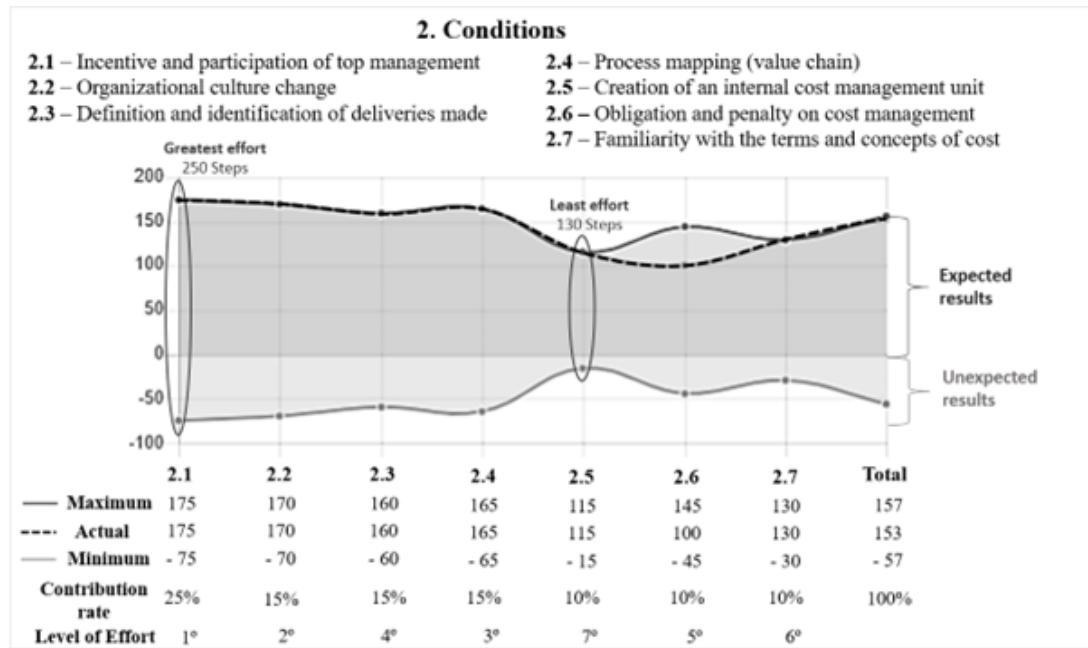


Figure 5. Information Conditions

Source: Prepared by the authors.

The creation of an internal cost management unit (2.5) indicates that it contributes a lot and has the least effort (130 steps), appearing to be an investment option that would bring good results among the conditions for the effectiveness of the information. In this sense, according to Lutilsky et al. (2012), attention should be given to the assessment of the technical and personnel capacities of accounting to respond to the needs of management information. Nevertheless, the transition from a less patrimonial and bureaucratic model of administration to a more managerial model in the government seems to be decisive for the due attention to this criterion in the Brazilian public sector.

Among all the criteria associated with the information conditions, obligations, and penalties on cost management (2.6) was the only one not to appear in the maximum contribution points and presents the lowest rate (10%), despite the relevance given to this criterion in research that also addressed the topic (Lapsley & Wright, 2004; Verbeteen, 2011). Reflections on this contrast are important because they can lead to a perception that Brazilian public managers tend to avoid responsibility for the use of resources, perhaps as a way of maintaining a favorable status quo for their management.

Finally, despite the importance given to the criteria of organizational culture change (2.2) and familiarity with the terms and concepts of cost (2.7) by the managers responding to the survey, the contribution rates, respectively 15% and 10%, were not so relevant in contrast to studies that highlight the relevance of these aspects (Lutilsky et al., 2012; Rogošić, 2021). It is important to point out that political, cultural, and social aspects are crucial to explain cases of failure in the implementation of activity-based costing and management systems (Major & Vieira, 2009).

In the analysis of the information access mechanisms in Figure 6, at first, the result observed in the customized report, according to the manager's needs (3.1), can be highlighted, in line with what Lapsley and Wright (2004) discuss about the need for information managers of detailed costs. This criterion has the greatest effort (200 steps), but it stands out from the others due to its contribution rate (50%), corroborating the fundamental principle expressed by Garrison et al. (2013) that managers need different information costs for different purposes.

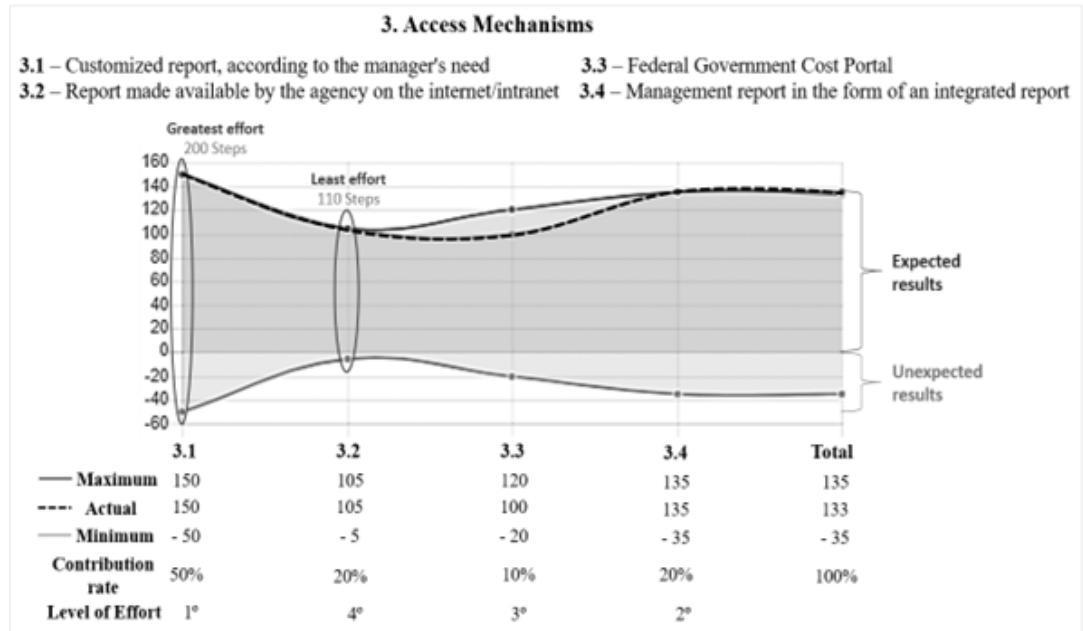


Figure 6. Information Access Mechanisms

Source: Prepared by the authors.

With a lower level of effort (110 steps) to better contribute to the effectiveness of the information, the reports made available by the agency itself, responsible for the consumption of resources, on the internet or intranet (3.2), are presented as an option to be evaluated, since it has a 20% contribution rate and reached the maximum score in the expected results for the criterion. Conversely, the Federal Government Cost Portal (3.3) was the only one among the information access mechanisms criteria to not reach the maximum score in the expected results, 100 out of 120 possible, and with the lowest rate (10%) of contribution.

Regarding these criteria, 3.2 and 3.3, it is worth mentioning Rogoši'ć's (2021) caveat about the improvement in the quality of information if the visualization of data through dashboards were included in the reports, with warning signs for an intuitive and more thorough examination.

Regarding the criterion management report in the form of an integrated report (3.4), with maximum score in the expected results, according to the level of effort (170 steps) and 20% of contribution rate, it is worth noting that, in the case of this access mechanism as a coercive determination of a control agency, the manifestation of managers in favor of this type of report could be related to the search for the legitimacy of the organization before external stakeholders.

As expected, in general, the perception of public managers indicates that cost management information tends to contribute a lot in the decision-making processes of public administration. This explains the provision expressed in NBC TSP 34 that indicates managers as the main users of cost information in the public sector, in their decision-making on the application of resources entrusted to them.

However, it should be noted that, despite the manifestation of 54% of managers in Figure 3 affirming the use of cost information in their decision-making processes, there is still no evidence of large-scale academic research regarding good associated cost management practices information purposes indicated in this research in the Brazilian public sector.

Similarly, Verbeeten (2011) recognized that there is little empirical evidence in public organizations that actually validate the effectiveness of cost information in management decisions, which was also demonstrated in their study when dealing with Dutch public sector organizations.

This helps to explain the highest contribution rate (50%) and the highest level of effort (214 steps) related to the information conditions criterion (2) in Figure 7, which tends to contribute a lot to the usefulness of the information, considering the results of the research. Given the lack of practical evidence in studies on cost management in the public sector, it may be natural to point out greater efforts and contribution rates on the necessary conditions for cost information to add value to management decision processes.

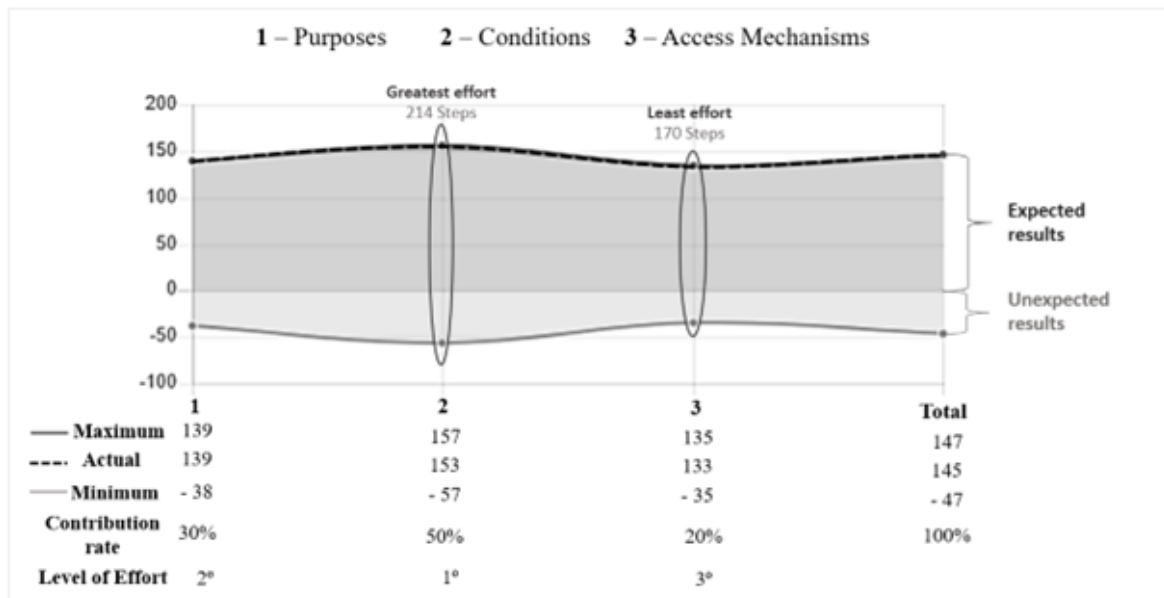


Figure 7. Cost Management Information

Source: Prepared by the authors.

Also, in this sense, it is possible to explain the lower effort (170 steps) and the lower rate (20%) of contribution verified on the criterion of information access mechanisms. Cost information may encounter lower barriers in access mechanisms, which can be justified by the technologies currently available for generating and accessing information, but it needs to meet the managerial needs of its users. According to Garrison et al. (2013), providing different cost information for different purposes is essential to management accounting.

In a balanced way, the purposes (2nd) are found between the conditions (1st) and the access mechanisms (3rd) in relation to the level of effort, since it is possible to infer that once the necessary conditions for the generation of information are met, with the available technologies, access mechanisms would be less of an obstacle to achieve the purposes.

In view of the global assessment, the final result of 145 on a scale of [-47, 147] allows for the realization that cost management information in the public sector tends to contribute a lot to the decision-making processes of managers, provided that the necessary conditions and access mechanisms exist for the effectiveness of the information's purposes.

When crossing the information from the results of the different criteria, some relevant observations can also be highlighted:

- Information intended to support the management of processes/activities is conditioned to the mapping of processes in the value chain. These criteria contribute a lot to the perception of managers, with contribution rates defined in the focus group at 40% and 15% respectively, which may indicate the concentration of efforts in this direction as an alternative for good results. This observation corroborates Oliveira et al. (2008), who found that the mapping of activities in the value chain of an organization constitutes a key factor for the strategic management of costs.
- Information for the purpose of accountability is subject to the obligation and penalty on cost management. These criteria were identified with a low level of effort to improve the effectiveness of information in the context of organizations and can be related to the Management Report as an access mechanism, which has a good contribution rate (20%). The combination of these criteria can also indicate the concentration of effort in this direction, corroborating Verbeeten (2011) when it states that cost information provides mechanisms for increasing management responsibility.
- Information for the purpose of supporting performance measurement is conditioned on the definition and identification of the deliveries that were made. Both criteria were considered of great contribution by the survey respondents and identified with contribution rates of 20% and 15% respectively. Therefore, there is a need for concentration of efforts in this direction, which is in line with what Mohr (2017) says when he emphasizes that cost and performance measurement systems work together and support each other.

5. CONCLUSION

The article raised the need for empirical investigation of the usefulness of cost information in the Federal Public Administration, since the Brazilian legal system has extensive regulations determining the calculation of costs for the disclosure of government results, as well as for monitoring and evaluating the government management.

The empirical approach was carried out on a sample of data extracted from public managers of the Federal Government, using a “multi-criteria decision support” methodology. The primary data were obtained through a questionnaire addressed to managers to verify the contribution of cost information in the face of their perceptions regarding criteria on purposes, conditions, and access mechanisms for the usefulness of the information.

Broadly, the results indicated in different organizations that cost information can contribute a lot to government management, considering the criteria described and their corresponding levels of effort and contribution rates, in view of the definitions made by the decision makers of

the focus group formed by representatives of the central cost agency of the Federal Government – National Treasury Secretariat (STN).

There was a greater agreement between managers and the focus group in the criteria: support for the management of processes/activities (purpose); incentive and active participation of top management (condition); and, flexible and customized cost report, according to the manager's needs (access mechanism). With less agreement, we observe the criteria: (accountability purpose); creation of an internal cost management unit; obligation and penalty on cost management and familiarity with the terms and concepts (conditions); and, the Federal Government Cost Portal (access mechanism).

As noted, the vast regulation of costs in the public sector, the search for improvements in accounting standards, and the technological advances in computerization appear to be relevant, but they are not enough for innovative cost management practices and policies to be developed in order to achieve the purposes of the information highlighted in this study. As it is a management instrument, since managers are considered the primary users, cost information in the public sector demands access conditions and mechanisms so that it can be translated into useful information for government management.

Normative, coercive, or mimicry pressures do not guarantee that the institutionalization of the cost system is focused on information users. A step forward needs to be taken towards the generation of cost information that is actually aligned with management needs. Leone and Leone (2007) were emphatic in one of their most important commandments of cost management: create a harmonious duet. Harmony between cost accountants and cost managers, so that, as highlighted in this research, the information has the necessary conditions for its generation, the proper mechanisms for its access and the achievement of its purposes.

The observed empirical evidence needs to be relativized in view of the possibility of implementing cost systems that are sustained as merely ceremonial instruments, maintainers of the *status quo* of managers who can avoid responsibilities when information that is not provided by the system comes to provoke a context of self-indulgence and absence of the need to act in cost management.

It is not enough to recognize the relevance of information, it is necessary to seek its benefits as a governance instrument, transposing the formalism of the institutionalization of the cost system. Therefore, the performance of standard-setters and regulators needs to indicate the harmony of the duet, so that cost information is useful to the organizational practices of public management.

The findings have implications for researchers interested in the topic, as it was possible to observe that managers tend to recognize the importance of cost information, but investigations on the effective application of information in the decision-making contexts of public organizations are scarce and need to advance in future studies.

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AUTHOR'S CONTRIBUTION

GC: Theoretical review, methodological planning, data collection, data analysis and review. **ER:** Theoretical review, methodological planning, data analysis and review.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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