RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Year V, v.1, n.1, Jan/July 2025. | submission: 09/05/2025 | accepted: 11/05/2025 | publication: 13/05/2025

Budgeting by Results: an analysis of the goals of the Navy's Action Plan Brazil under the criteria of the *Program Assessment Rating Tool*

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LUIZ FELIPE TEIXEIRA OF OLIVEIRA

SUMMARY

Implementing the Results-Based Budget is simple and promising; however, developing performance information is one of the challenges of its implementation. In this context, through descriptive research with a quantitative approach, we sought to evaluate a sample of the Action Plan goals, using the *Program Assessment Rating Tool criteria,* in order to demonstrate whether this tool can contribute to the Brazilian Navy in measuring its performance. By applying data collection and processing techniques, a sample of the Action Plan goals was evaluated, using the *Program Assessment Rating Tool* criteria and the Brazilian Navy's indicators. Finally, statistical methods were applied that partially proved the association between the results achieved by the two criteria. Thus, we conclude that the use of this tool can contribute to the Brazilian Navy in measuring its performance.

Keywords: Results-Based Budgeting. Performance Measurement. Performance Indicators.

ABSTRACT

The implementation of the Budget by Results is simple and promising; however, developing performance information is one of the challenges of its implementation. In this context, through descriptive research with a quantitative approach, we sought to evaluate a sample of the Action Plan goals, under the criteria of the Program Assessment Rating Tool, in order to demonstrate whether this tool can contribute to the Brazilian Navy in measuring its performance. By applying data collection and processing techniques, a sample of the Action Plan goals was evaluated, under the criteria of the Program Assessment Rating Tool and under the criteria of the Brazilian Navy indicators. Finally, statistical methods were applied that partially proved the association between the results achieved by the two criteria. Thus, we conclude that the use of this tool can contribute to the Brazilian Navy in measuring its performance.

Keywords: Budget by Results. Performance Measurement. Performance Indicators.

1 INTRODUCTION

Throughout the 20th century, the public budget underwent a continuous process of reforms, basically inspired by measures created and developed in the United States (GIACOMONI, 2017). Among these measures, the concepts of Budgeting by Results (OPR) emerged, which seeks to improve the quality of public services through a better allocation of resources, shifting the focus from how much is being spent to government accountability for what is being done (ARIZITI et al., 2010).

The essence of results-based budgeting, according to Giacomoni (2017), lies in the following practical issue: public actions must achieve the results expected by society, as it supports the public machine with the payment of its taxes. According to the author, results must be the center of the budget, and public administration must
be held accountable and controlled by them.

The relevance of this theoretical model derives from allocative efficiency, when introducing the

performance information in the resource allocation process, and government accountability . Thus, this article is part of the discussion on OPR, its concepts and challenges, specifically in the context of the Brazilian Navy (MB).

It is noted that the idea of OPR is simple and timely, however, its simplicity is limited by the complexity of its implementation (FARIA, 2010). Thus, this research aims, through experiences lived by pioneering countries in the use of this methodology, to analyze a method that seeks to overcome the challenges of implementing OPR and evaluate its applicability in the MB.

In this context, one of the challenges faced in implementing OPR is measuring performance, which is considered an essential condition for improving public sector management. With this information, it is possible to identify opportunities for improvement in the implementation of public policies, adopt corrective measures, and improve the organization and design of government policies and programs (FARIA, 2010).

Within the scope of MB, a constant concern with performance measurement was identified during this research. However, this information is still restricted to physical-financial monitoring measures, not addressing information that allows for a detailed analysis that allows for the indication of recommendations or corrective interventions.

Discussed in the United States of America (USA) since the 1950s, the performance-focused budgetary vision generated a wave of movements in favor of government reinvention, with the approval, mainly, of the Government Performance and Results Act *(GPRA),* in 1993, which introduced results-oriented management principles in federal programs, and the implementation of the Program Assessment Rating *Tool.*

- PART), a comprehensive evaluation model that aimed to integrate performance information into the budget (CAVALCANTE, 2010).

Schick (2007) points out that PART was an effective way of using performance data in the construction of the North American budget. According to this author, the program scores were used together with other data by the *Office of Management and Budget* (OMB)1 to recommend the distribution of resources.

Thus, given the challenges faced in implementing the OPR and measuring performance, which are not limited to physical-financial data, this study defined, as a basic question, the following research problem: Can the PART contribute to measuring the performance of the goals of the MB Action Plan (PA)?

Therefore, the general objective of this article is defined as evaluating the PA goals, under the PART criteria, with the purpose of analyzing whether the results of this tool are aligned with the results obtained with the monitoring indicators used by MB, in order to demonstrate whether this tool can contribute to MB in measuring the performance of its goals.

To achieve this, the following specific objectives were established: (i) to evaluate a sample of PA goals, under the PART criteria; (ii) to highlight the form of performance measurement carried out in the MB and to evaluate this sample of goals under these criteria; and (iii) to identify whether the results presented by the PART are consistent with the results of the MB performance indicators (ID).

Therefore, this study is justified by its aim to analyze a performance evaluation method that has been used by a country that is at the forefront of implementing the concepts related to the OPR and to evaluate its applicability in the MB. Furthermore, it is also justified by its aim to highlight the current performance of a sample of the PA goals. It is therefore extremely relevant, given the possibility of finding a way to, together with the current mechanisms, overcome one of the major challenges in implementing the results-focused budget, namely, measuring the performance of the actions.

Given the above, this article is structured into five sections, including this introduction.

The second section presents the theoretical foundation that established the basis for this study. The third section presents the methodology applied in conducting this research. The fourth section presents an analysis of the results obtained. Finally, the fifth section presents the final considerations of this study.

2 THEORETICAL FRAMEWORK

2.1 Results-Based Budgeting: Historical Evolution and Main Concepts

The trajectory in favor of the results-based approach dates back to the Second World War and the recommendations issued by the First Hoover Commission in 1949, aimed at increasing the efficiency of the US government (BIJOS, 2020). In a way, at the beginning, performance measures did not become fundamental to the decision-making process. Furthermore, these reforms were hampered by inadequate accounting systems that were incapable of identifying the costs of government actions and by the difficulty in developing performance measures for programs (DIAMOND, 2006).

In this process, other budgetary initiatives began to be adopted in favor of increasing government performance (CAVALCANTE, 2010). Tyer and Willand (1997) present a summary of the stages of budgetary reform in the United States, as presented in Table 1.

Table 1 - Budget reform in the United States

Period	Conception	Emphasis
Early 20th century	Traditional Budget	Control
1950s	Performance Budget	Administration Economy and efficiency
1960s	Planning, Programming and Budget – PPBS	Planning Assessment Effectiveness
1970s and 1980s	Zero-based budgeting	Planning Prioritization Budget reduction
1990s	New Performance Budget	*Accountability* Efficiency and economy

Source: Adapted from Tyer and Willand (1997).

As can be seen in the summary of these authors, presented in Table 1, the subsequent stages to the Performance Budget were the Planning, Programming , *and Budgeting System (PPBS),* the Zero-Based Budget (ZBB) and, finally, the New Performance Budget, also called Results-Based Budget (TYER; WILLAND, 1997).

The PPBS was first adopted by the US Department of Defense in 1961 and later applied to other US agencies. This model consisted of three basic phases that aimed to integrate the Budget with Planning, through Programs (DIAMOND, 2006).

The next stage of budgetary reform took place in 1976, with the introduction of zero-based budgeting in the American federal administration by President Jimmy Carter (GIACOMONI, 2017). Originally developed for the private sector, ZBB arose from the need to contain public spending and consisted of the technique of zeroing the expenditure forecast each year.

Therefore, between 1990 and 1996, the US Congress passed new laws that sought to improve budget execution, such as the Government Performance and Results Act *(GPRA),* which required the preparation of

and sending performance information as part of budget requests from US agencies (DIAMOND, 2016; GIACOMONI, 2017). During this period, the expression New Performance Budget was used for the first time in the US by J.
Mikesell, to categorize the reforms carried out in this decade (DIAMOND, 2016).

According to Giacomoni (2017, p. 210), the "New Performance Budget differs from previous models by including a new category of objectives: results *(outcomes)".* According to the author, previous models measured their performance only based on products *(outputs).*

According to the Organization for Economic Cooperation and Development (OECD), results-based budgeting is a form of budgeting that aims to relate allocated resources to measurable results (OECD, 2007). Thus, this model incorporates a vision for the efficiency of the execution of public resources, to the detriment of incremental practices (PALUDO, 2010). Therefore, the central idea of OPR is the distribution of resources linked to the performance achieved (CONTI, 2020).

However, Schick (2007) argues that program performance data should be considered as an analytical tool in the budget process, rather than decision rules. From the same perspective, Faria (2010) concludes that this information should not replace the political bias of the decision-making process that permeates the allocation of resources, but rather, allow political decisions to be better informed.

In this same aspect, Curristine (2005) argues that information must be provided to enable better decision-making, consequently leading to a better distribution of resources. Finally, the author explains that:

> For a number of reasons, it is seen as beneficial that most countries have avoided mechanical links between performance and expenditure - which would result in an automatic expenditure cut or elimination of a program for poor performance.
> First, countries continue to struggle with the technical aspects. They already have many technical challenges with this method, including designing measures for specific activities, obtaining good quality, sufficient data, and attributing results to specific programs. Second, in addition to technical problems with automatic linkage, it is not clear that this approach will create the right incentives to motivate agencies to improve performance (CURRISTINE, 2005, p. 111).

In view of the above, it is clear that the central idea of the OPR is relevant, and in a certain way simple, as it aims to introduce greater rationality into the resource allocation process, rewarding good performance. However, this simplicity and relevance are outweighed by the complexity of its implementation (FARIA, 2010). Table 2 presents some of the challenges identified in the implementation of the OPR.

Table 2 – Challenges in implementing the OPR

Identified requirements	References
Development of performance information.	Faria (2010) and Giacomoni (2017).
Integration between performance information and resource allocation resources.	Bijos (2020), Curristine (2005) and Schick (2007).
Technical knowledge of the organization's components.	Faria (2010), OECD (2007) and Oliveira Junior (2018).
Clarity about how performance information will be used in the budgeting process.	OECD (2007).
Use of incentives for programs that generate good results in order to encourage good performance.	Curristine (2005), Faria (2010), OECD (2007) and Oliveira Junior (2018).
Measuring program costs.	Giacomoni (2017) and Oliveira Junior (2018).
Integration between Strategic Planning and Budget.	Oliveira Junior (2018).
Integration between Organizational Strategic Planning and request for resources from Military Organizations.	Oliveira Junior (2018).

Source: Prepared by the author (2020).

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It is noted that the literature presented in Table 2 is vast in identifying the challenges that must be faced when implementing OPR. However, based on the authors exposed, it is inferred that despite the limitations and challenges, the adoption of this methodology is a logical trend, in order to demonstrate to society the value generated by the taxes collected (OLIVEIRA JUNIOR, 2018).

Finally, it can be inferred that the experiences of pioneering countries in using this methodology allow us to point out methods for its implementation, in such a way that obstacles are mitigated, favoring the success of reform initiatives (FARIA, 2010).

2.2 Performance Measurement

According to Curristine (2005), the process of evaluating the performance of government programs can be carried out through performance indicators or evaluations. Although both methods are intended to generate information on performance, there are differences regarding the type of information generated. While indicators deal with the performance of products or results, evaluation expands the analysis by detailing issues of causality, leading to recommendations on changes in processes that enable the improvement of program performance (CURRISTINE, 2005).

From the perspective of public governance, indicators are mechanisms used to identify, measure and describe aspects of a given phenomenon or object of reality on which the State decides on an action or omission. Therefore, their purpose is to describe, in a measurable way, aspects of reality, making their monitoring operational (BRASIL, 2020b).

However, measuring program performance from the perspective of products or results requires that we first differentiate between *outputs* and outcomes . According to Giacomoni (2017), products are services and goods provided or produced that contribute to achieving planned results, while results should reflect the impact of actions on society. According to the author, “in government administration, although products are relevant in principle, what really matters are the results achieved in economic and social terms” (GIACOMONI, 2017, p. 210).

Thus, output indicators *would* be parameters that express the quantity of services provided, for example, the percentage of kilometers of road delivered. In turn, outcome indicators *are* linked to the impact generated by the services provided, such as school approval rates (CAVALCANTE, 2006).

Evaluation, as a method for obtaining information on performance, can also provide support for the budget allocation process. Furthermore, it can be used as a tool to stimulate performance, as it allows for a detailed analysis that leads to recommendations or corrective interventions. Curristine (2005) shows that 28 of the 30 OECD countries, at the time of his research, used both methods to measure performance. However, just like measurement through indicators, evaluation faces challenges, as Faria (2010) points out:

> Some of the dilemmas faced regarding evaluation refer to the method used to collect information. The body or agency responsible for implementing the program may be responsible for its evaluation. This measure reduces the costs of evaluation, but tends to favor the production of unreliable information. In turn, carrying out evaluations by a body or entity external to the one responsible for its implementation may contribute to the impartiality of information on performance, but it presents a higher production cost (FARIA, 2010, p. 31).

In this context, Chile and the United States, for example, opted for different strategies.

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Blöndal and Curristine (2004) show that Chile divides its assessments into two types: documentary and impact assessments. Documentary assessments are carried out by external consultants selected in bidding processes, while impact assessments are carried out by research institutions and universities. In contrast, the United States opted to adopt the *Program Assessment Rating Tool,* a methodology that consists of an assessment process carried out by the agency itself (FARIA, 2010).

2.3 Program Assessment Rating Tool

An element that integrated the North American system, the *Program Assessment Rating Tool* was a tool designed by the OMB, as the central initiative of President George W. Bush, who sought to evaluate government programs and integrate performance information into the budget in order to ensure that public resources produced the best results (GIACOMONI, 2017).

The PART consisted of a standard, self-assessment questionnaire, containing central themes of management and performance of North American programs, which was in force between 2002 and 2008. The tool applied a weighting between four categories, under which the programs were scored (OMB, 2008), namely:

(i) Purpose and organization of the program – 20% weighting;
(ii) Planning – 10% weighting;
(iii) Program Management – 20% weighting; and
(iv) Results and *Accountability* – 50% weighting.

From this score, obtained at the end of the questionnaire, the programs were classified as follows:

(i) Ineffective: score between 0 and 49;
(ii) Adequate: score between 50 and 69;
(iii) Moderately Effective: score between 70 and 84;
(iv) Effective: score between 85 and 100.

Programs that did not have annual and long-term performance measures that allowed for proper monitoring were classified as “undemonstrated results” (OMB, 2008).

Heinrich (2011) argues that PART was a tool used to assess the effectiveness of programs in a more rigorous, systematic and transparent manner, and to encourage agencies to improve their performance by linking it to the allocation of budgetary resources to the program. The author presents the results of two studies conducted by other authors, which sought to assess the existence of a relationship between the scores achieved by programs and the respective distribution of resources. A summary of these studies is found in Table 3, below.

Table 3 – Relationship between PART and resource allocation

Authors	Research Details Conclusions	
Gilmour and Lewis (2006)	They used information from 234 programs from 2004 and 2005.	Using the total score of the tool, they reported statistically significant positive relationships between the increase in score and the increase in budget of the programs analyzed.
Norcross and Adamson (2007)	They used information from 973 programs, 2006 fiscal year. node	They suggested a trend toward the President recommending funding increases for effective and moderately effective programs and reductions for ineffective programs and programs with results not demonstrated.

Source: Prepared by the author based on Heinrich (2011).

The studies presented in Table 3 demonstrate the relevance of the information generated

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by PART in the North American budget process. However, Schick (2007), when arguing that performance information should not be used as a rule, argues that an efficient way to use it was the way in which the OMB used the information generated by PART, since the performance of the programs was not the only factor in the decision-making process. Thus, the author concluded that PART was an analytical tool, used to aid the allocation process, and not a decision rule (SCHICK, 2007).

Therefore, there is a consensus among theorists that the PART was an effective tool in measuring program performance, presenting relevant data to decision-makers, thus enabling a more rational content to the resource distribution process. Thus, the existence of this work is justified, since the aim is to evaluate the applicability of this instrument in the MB and whether its use can contribute to measuring the performance of the PA goals. To achieve this objective, it is necessary to address, also in this theoretical framework, the concepts of the budget in the MB.

2.4 The budget process in the Brazilian Navy

The Brazilian Navy used the traditional budgetary model until the 1960s, therefore, there was a complete disconnection between the budget and the planning of the Navy, as well as between the latter and government plans (OLIVEIRA, 2000). Consequently, the distribution of resources "had the characteristics, mainly, of the incremental model" (OLIVEIRA, 2000, p. 170).

According to Oliveira Junior (2018), the theoretical elements of the PPBS inspired the adoption of the Program Budget in the country, and the MB's pioneering role in its budgetary administration allowed these concepts to be quickly incorporated into the Force, with the origin of the Master Plan (PD), “a permanent planning, execution and control instrument inherent to budgetary and financial management” (BRASIL, 2014, p. 2-1).

In this context, it is necessary to define the PA which, according to the SGM-401 standard (2014, p. 2-9), “is the portion of the PD corresponding to a financial year”. It should be added that the PD is a permanent instrument, the PA, in turn, is its temporary portion corresponding to a given financial year.

Another concept that requires definition is the Master Plan System (SPD), as it is the projection of the PD onto the administrative structure of the MB. Formally, it is conceptualized as: “a set of concepts, processes, operating rules, actors and procedures, which allow the planning, execution and monitoring of budgetary activities” (BRASIL, 2014, p. 2-1). Furthermore, it is worth presenting the Master Plan Monitoring System (SIPLAD), which is the computerized system that supports the operations carried out in the SPD (BRASIL, 2014).

From the Multi-Year Plan (PPA) 2000-2003, an evolution began in the Brazilian budgetary process, with the aim of making spending more rational and efficient, increasing the visibility of results and improvements generated for society, and ensuring transparency in the application of resources (CAVALCANTE, 2010).

Consequently, results-based management directed the implementation of changes in the registry of actions of the Annual Budget Law (LOA), with the development of the Budget Plan. In this way, the MB sought to adapt to the new programmatic structures of the PPA and LOA and included new management concepts to the SPD, making it a database of goals (OLIVEIRA JUNIOR, 2018). The goal, therefore, is the central element of the SPD, as it delimits an objective of the institution, in quantitative, qualitative and temporal terms (BRASIL, 2014).

In this context, the new PD system emerges, the modifications of which resulted from the SPD 2018 Working Group (GT-SPD 2018), created by Ordinance No. 3/SGM, of January 25, 2018, having as one of its objectives: “evaluate and propose specific actions

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concerning the PD cycles, evaluating the adoption of practices and metrics focused on the results-based budget" (BRASIL, 2018a, p. 2). In this way, one can see the search for improving budget management and the evaluation of results in the SPD (OLIVEIRA JUNIOR, 2020).

Among the main changes suggested by the GT-SPD 2018, it is worth highlighting the inclusion of Goal Managers in the SPD, as they are responsible for the goals that this study undertook to analyze. According to Brasil (2018a), goal managers are responsible for presenting the needs, managing the resources received and other activities to support the decision-making process that involve their respective goals.

3 METHODOLOGY

3.1 Search Type

This study, from the point of view of the approach to the problem, is classified as quantitative research "because it translates opinions and information into numbers to classify them and analyze them" (PRODANOV; FREITAS, 2013, p. 69). Regarding nature, as also presented by Prodanov and Freitas (2013, p. 51), it is classified as applied research, as it "aims to generate knowledge for practical application aimed at solving specific problems".

Regarding the objective, this research can be classified as descriptive research, in line with the concept presented by GIL (2008), as its primary objective was to describe the characteristics of a given population, recording the observed facts, without interfering.

Regarding the procedures, a bibliographic and documentary research was carried out, which used a systematic study based on materials published in books, magazines, newspapers and internal MB documents, such as standards, circulars and internal reports (VERGARA, 2016).

Finally, the *Survey technique was applied,* which, according to Prodanov and Freitas (2013), occurs when one wants to know the behavior of a certain group of people. This survey was carried out by applying a questionnaire built in the digital tool *Google Forms®,* created based on PART.

3.2 Data Collection and Processing

The data for this study were collected in four phases. Initially, a literature review was conducted to identify the main concepts related to OPR and the challenges for its implementation. Soon after, an analysis of the performance measurement process was added. Finally, a survey was conducted on PART and the impact of its use in the US government.

Among the challenges faced in adopting the OPR, this study was limited to analyzing performance measurement, in order to analyze the applicability of the PART in measuring the performance of the PA goals, with the objective of demonstrating whether its use can contribute to the MB budgetary process, considering that one of the main objectives of the OPR is to increase the quality of the decision-making process, through the inclusion of performance information in the decision-making process (OECD, 2007).

In this context, this research undertook the analysis of PART, since among the authors addressed in this study, this tool is constantly cited as a good practice in performance evaluation. Furthermore, as Cavalcante (2010, p. 10) states, "it is essential to remember that the United States has a vast history of initiatives aimed at improving the performance of public policies and, therefore, is at the forefront of the use of models for evaluating government programs".

The second phase of the study, based on the concepts of Prodanov and Freitas (2013), consisted of extensive direct observation, using a questionnaire constructed based on the PART Manual (2008), divided into the four categories presented in the theoretical framework: (i) Purpose and organization of the program; (ii) Planning; (iii) Program Management; and (iv) Results and *Accountability.*

This questionnaire sought to classify a sample of the PA goals, according to the PART criteria, with the purpose of analyzing whether the results of this tool are aligned with the results obtained, subsequently, with the monitoring indicators used by MB, in order to demonstrate whether this tool can contribute to MB in measuring the performance of its goals.

It is worth mentioning that the original PART form was not identical for all programs. The questionnaire had 25 closed questions with two options: yes or no, and a field for justifications (CAVALCANTE, 2010). Thus, in order to use a single questionnaire that would meet the objectives of this study, a textual review of the questionnaires of seven programs of the North American Department of Defense was carried out, and

Using primary concepts of content analysis, as explained by Vergara (2016), the 24 questions that presented the highest frequency were selected. It should be noted that this study will be limited to the quantitative analysis of the questionnaire, as this will allow a comparative analysis of this with the IDs used by MB.

Furthermore, studies by Jones and McCaffery (2010) indicate that North American agencies suggested that the PART be revised and the closed questions be replaced by scaled responses, as they considered that scaled responses are more susceptible to evaluation. Thus, the questionnaire used in this study was updated and the dichotomous questions of the original form were replaced by questions with scaled responses, using the standard established by Likert (1932).

Furthermore, following the methodology proposed by Prodanov and Freitas (2013), the questionnaire underwent a pre-test with two officers belonging to the population to be studied, in order to correct any errors in its formulation. A pre-test was also carried out with an officer from the Navy's Budget Management Directorate (DGOM), in order to evaluate the technical and conceptual requirements of the questionnaire.

The questionnaire was then sent to 105 PA target managers, out of a total of 158, obtaining 44 responses, 41 of which were valid, reaching a response rate of approximately 39%.
Regarding the type of sample, Lakatos and Marconi (2017) establish that they can be classified as probabilistic or non-probabilistic. In this work, the sample selection was carried out in a non-probabilistic manner, that is, without statistical rigor for its selection, characterized as a sample by accessibility, since the form was sent to the goal managers who had a valid *email* in the telephone directory of the Navy Administration Directorate (DAdM).

Therefore, the conclusions of this study will be limited to the sample analyzed, and no inferences will be made about the population. However, it is important to emphasize that the goal managers that make up this sample are responsible for 124 PA goals, which represents approximately 49% of a total of 251 currently active goals. This fact demonstrates the representativeness of the sample that is the object of this study.

The questions structured on the scale proposed by Likert (1932) obtained a value of 0.91 in the calculation of Cronbach's *alpha* coefficient (1951), above the minimum value of 0.70 accepted by the literature for the validation of a questionnaire. According to the reliability classification proposed by Freitas and Rodrigues (2005), the result demonstrates that the reliability of the test is very high, however values above 0.90 may indicate the presence of redundancy in the test.
This conclusion is confirmed by eliminating the confirmation question in the questionnaire, as with its exclusion, the value of Cronbach's *alpha* coefficient (1951) is reduced to 0.90.

The data collected by the questionnaire were tabulated and the sampling targets were

scored according to the PART criteria and, subsequently, classified according to the categories presented in the theoretical framework, namely: effective, moderately effective, adequate, ineffective and result not demonstrated (OMB, 2008).

In the third phase of the study, the forms of performance measurement used in the MB were raised, in order to evaluate the sample goals under the criteria of the ID that evaluate the PA.
To carry out this assessment, the financial data for the targets for September 2020 were extracted from the government's Tesouro Gerencial system and tabulated in a *Microsoft Excel® spreadsheet.*

Finally, the fourth phase of the study consisted of a statistical analysis performed with the score generated by PART and the results presented by the SIPLAD IDs. The objective of this analysis is to identify whether the results obtained by PART are compatible with the financial performance of the goals, in order to mitigate the risks of undue conclusions influenced by the "human factor" in a self-evaluation process (MATTOS, 2003). The statistical analysis was performed with the aid of *Minitab® software* and consisted of calculating the
Spearman coefficient , as it is an analysis containing ordinal variables (FÁVERO; BELFIORE, 2017).

Furthermore, the period used to collect financial data falls within the time window from January to September 2020, as the current financial year is the first year with the new PD system, when the concept of target managers and their attributions was implemented.

4 PRESENTATION AND ANALYSIS OF RESULTS

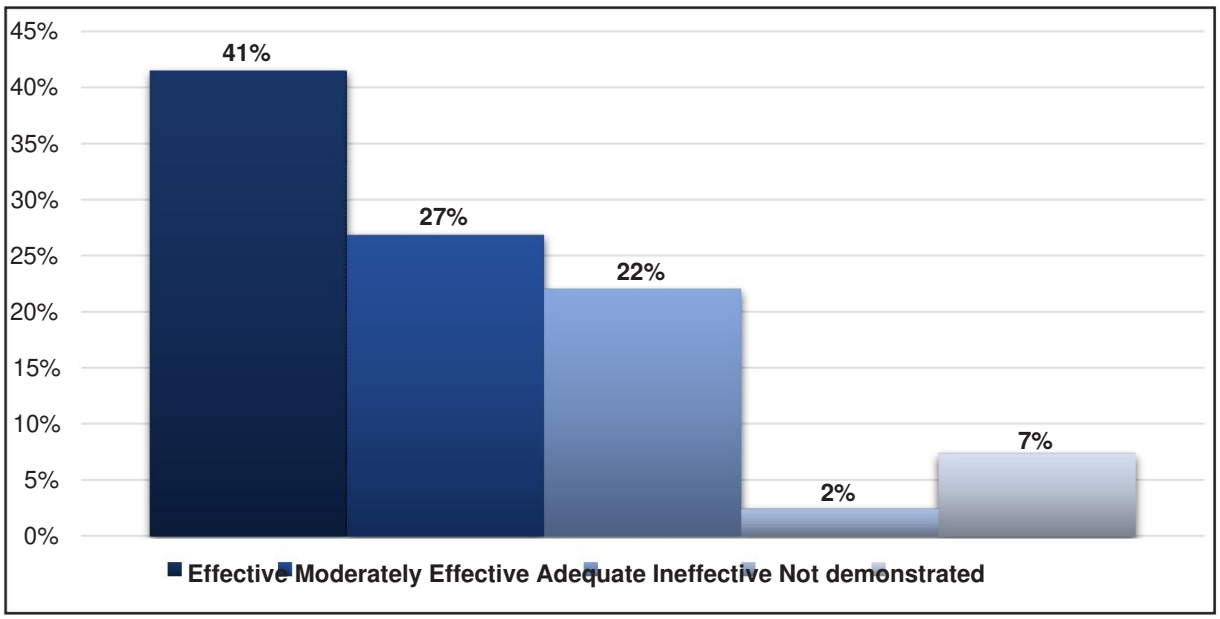
4.1 Classification of PA Goals under PART criteria

After tabulating the data collected by the questionnaire, the goals were scored according to the scoring system provided in the PART manual (2008). At this point, it is worth noting that the PD is composed of 251 goals, managed by 158 Officers. Thus, there are managers responsible for more than one goal, just as there are goals managed by more than one person in charge.

In this context, this study sought to define, together with the target audience, that the information presented in the questionnaire would be limited to data from just one of the goals within the set of goals managed by the respondents, choosing the one that received the largest budgetary contribution in fiscal year 2020. This delimitation sought to present individualized data on the goals, in order to allow the comparison of performance in the PART with the performance in the SIPLAD indicators, with the help of data extracted from the Treasury Management.

Graph 1 shows the classification of the sample of goals, according to the classification criteria of the *Program Assessment Rating Tool.*

Chart 1 - PART Classification



Source: Prepared by the author (2020).

It can be seen in Graph 1 that, under the PART evaluation criteria and its distribution of points, 41% of the PA goals evaluated were classified as effective, 27% were considered moderately effective, 22% were classified as adequate, 2% were considered ineffective and 7% fell into the category of results not demonstrated.

The percentage of goals classified as ineffective represents only one goal, which received the lowest score in the Results and *Accountability block,* being the category that has 50% weighting in the overall score. This block consists of questions about the fulfillment of annual and long-term objectives and the score achieved for this goal was 35.7 points, while the overall average was 72.35 points.

The goals that, during the questionnaire, demonstrated that they did not have annual and long-term monitoring measures, obtained a score in the test, however, according to the criteria stipulated by the OMB (2008), they are categorized in the class of results not demonstrated.

4.2 Performance measurement in the Brazilian Navy

After evaluating the sample of PA goals, using the PART criteria and classifying them according to the categories defined by the OMB (2008), this study sought to highlight the form of performance measurement used by the MB to evaluate the performance of the sample of PA goals.

In general, the IDs used in the MB are indicators for monitoring budgetary and financial data for the PA targets and are measured with the data provided by SIPLAD, presented in the AI monitoring submodule or in the monitoring panel for the physical-financial progress of the SPD targets, in the Project Panel submodule of the system (BRASIL, 2020a).

SIPLAD presents two monitoring indicators, which are used as performance indicators for the PA goals and are based on the balance of accounting accounts of the Integrated Financial Administration System (SIAFI). The ID presented by SIPLAD, and used in this study, are: (I) ratio between the accounting accounts “Available Credit” and “Provisioned Credit”; and (II) ratio between the accounting accounts “Settled Expenses” and “Committed Expenses” (BRASIL, 2020a). Table 4 presents a summary of the accounting accounts used in the composition of these ID.

Table 4 - Performance Indicators

Indicator	Accounting Account	Definition
I	Credit Available	Sum of budgetary resources received that have not yet been committed.
	Provisioned Credit	Sum of budgetary resources received.
II	Expenses Settled	Balance of commitments that have been settled, i.e., where the service has been provided and/or the material has been delivered.
	Committed Expenses	Sum of all commitments made.

Source: Prepared by the author based on MCASP (2018b).

It is important to highlight that the two IDs have a greater focus on measuring budgetary and financial performance, with ID I (available credit/provisioned credit) being an indicator of the type “the lower, the better”, as it seeks to highlight the percentage of credits received that were not committed. On the other hand, ID II (settled expenses/committed expenses) is an indicator of the type “the higher, the better”, as it seeks to indicate the percentage of commitments made and settled. The evaluation of the sample of goals with the SIPLAD IDs is found in Table 1.

Table 1 – Performance Evaluation

Goal	Score PART ID I 68 49 88 64 (...) 82 79	ID II
	38%	49%
1	0%	55%
	0%	79%
	4%	39%
2 3	(...)	(...)
4	0%	73%
(...) 27	10%	53%

Average Source: Prepared by the author (2020).

To carry out the assessment with the SIPLAD IDs, only the goals that were granted resources in the current fiscal year were assessed, and the results presented in Table 1 demonstrate that the average achieved by the goals in ID I is 10% and in ID II, it is 53%.

4.3 Spearman 's Correlation Coefficient

Finally, this study sought to analyze the data statistically, in order to identify whether the results presented by PART are consistent with the results presented by ID
of MB, with the aim of answering whether the PART can contribute to measuring the performance of the PA goals.

To achieve this objective, *Spearman* 's statistical test was used to analyze whether there is a relationship between the variables, in addition to the degree of association between them. The correlation measure varies between -1.00 and +1.00, indicating a perfect negative or positive correlation, respectively. (FÁVERO; BELFIORE, 2017). Initially, to carry out the test, the variables were ordered in descending order, leading to the creation of positions.

To perform the Spearman correlation test , targets that did not receive budgetary resources in the current fiscal year were disregarded, as they did not have information to compose the MB ID. Thus, 27 targets were used to perform the test.

Using *Minitab® software,* the existence of a statistically significant association between the PART score and ID I was tested by calculating *Spearman's coefficient,* and the same test was subsequently applied between the PART score and ID II. The results are summarized in Table 2 below.

Table 2 - *Spearman* 's test

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Indicators I -	*Spearman* Correlation	P-value
Available credit/Provision received II - Expenses	-0.174	0.385
settled/Expenses committed Source: Prepared by the	0.408	0.035

author (2020).

For each association, the *Spearman* correlation value and the respective P-value are presented, which represents a decreasing index of reliability of a result; the lower its value, the less the hypothesis assumed by the test can be accepted (Null Hypothesis - H0).

Thus, Fávero and Belfiore (2017) explain that in the case of *Spearman* 's correlation coefficient , the test hypotheses are:

(i) H0: relationship between variables equal to 0, that is, there is no correlation.

(ii) H1: relationship between variables different from 0, that is, there is correlation.

Thus, when the P-value is less than the significance level, the hypothesis assumed by the test (H0) is rejected.

In this study, a 95% confidence level was used, therefore, the significance level of the test is equal to 5%. Therefore, for results in which the P-value is less than 0.05, the null hypothesis (h0) of the test is rejected and it can be concluded that there is a statistically significant correlation between the two variables.

The test to analyze the correlation between the PART score and the ID I returned a coefficient equal to -0.174, and a P-value of 0.385, which demonstrates that there is no significant correlation between the PART score and the ID I, since the P-value is greater than the significance level of 0.05. Graph 2 shows the relationship between the variables.

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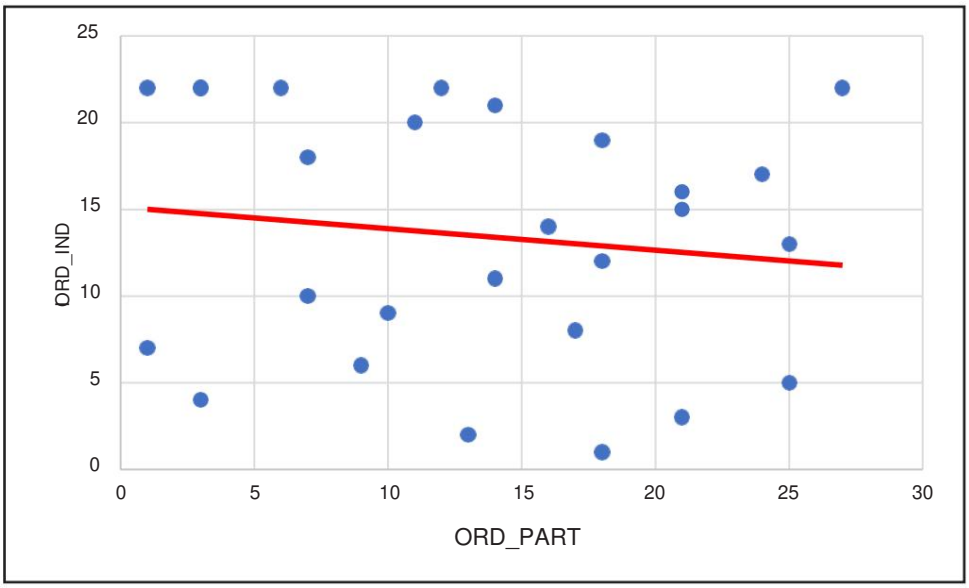
ISSN: 2675-9128. Sao Paulo-SP.

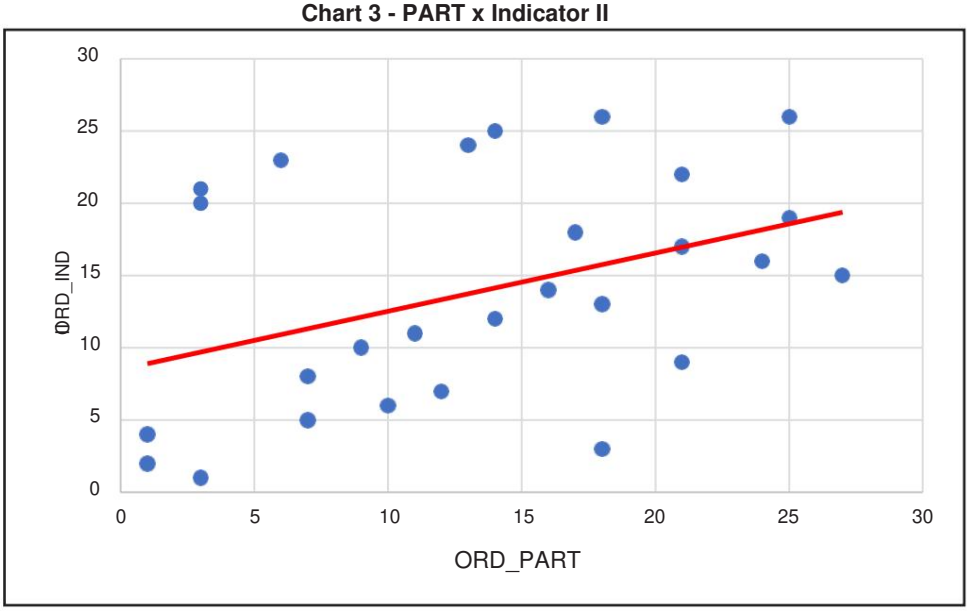
Chart 2 - PART x Indicator I



Source: Prepared by the author (2020).

On the other hand, the test to analyze the existence of a correlation between the PART score and the ID II returned a coefficient equal to 0.408, and a P-value of 0.035. The P-value is lower than the significance level of 0.05. Therefore, the null hypothesis is rejected and the hypothesis that there is a statistically significant correlation between the PART score and the ID II is accepted, at a 95% confidence level. This relationship between the variables is demonstrated in Graph 3.

Chart 3 - PART x Indicator II



Source: Prepared by the author (2020).

Unlike what is shown in Graph 2, Graph 3 shows the variables in a less dispersed manner and closer to the trend line. Thus, although the result of the *Spearman* correlation test does not demonstrate causality between the variables, the positive sign of the *Spearman* coefficient indicates that the PART score and the ID II result tend to vary in the same direction.

Therefore, the result presented above demonstrates that when combining an analysis of the ID with the PART, it can be concluded that the self-assessment process was successful, as it characterized, in a certain way, the financial performance of the PA goals, by proving the correlation

statistically significant between its results and the results of ID II. As for ID I, although the statistical association is not proven, the behavior of the variables demonstrates, to a certain degree, a coherence between the data found.

Thus, the use of PART as a tool for performance assessment can contribute to MB, since in addition to having proven, for this test sample, that its results are coherent and in line with the financial performance of the goals, it adds qualitative data, separated into the four categories of the form, which can be used for a detailed analysis, not addressed in this study.

5 FINAL CONSIDERATIONS

This study analyzed a sample of PA goals based on PART criteria, and allowed us to assess whether their use would contribute to MB in developing performance information.

To achieve the general objective of this study, the sample of goals was first evaluated using the PART. Afterwards, the way in which the PA performance was measured was highlighted and an evaluation of the sample of goals was carried out with the two performance indicators identified and, finally, the results presented by the PART were statistically analyzed with the results of the ID.

Thus, the general objective of this study was achieved and it was identified that PART can contribute to the performance measurement process at MB, as the results of this tool are aligned with the financial performance of the PA goals, and as it is a performance measurement process through assessments, the data produced allow for a detailed analysis, which allows for the indication of recommendations on changes in processes that aim to improve performance.

It should be noted, however, that the performance information collected with the PART must be used as an analytical tool in the decision-making process, and not as decision rules. Thus, performance information should not replace the political bias of the decision-making process, but rather enable political decisions to be better informed.

Nevertheless, it is concluded that the existence of a statistically significant correlation, identified by calculating *Spearman's correlation coefficient,* between the PART results and the ID II data, indicates that the self-assessment process is consistent with the financial performance of the PA goals, presented by the SIPLAD monitoring indicators. Despite the absence of statistical correlation with ID I, it is understood that the behavior of the variables demonstrates, to a certain degree, consistency between the data.
found, not rendering the conclusions unfeasible.

In this context, among the limitations found in this study, we can highlight the risk of the influence of the "human factor" in the self-assessment process, which we attempted to mitigate in some way with the statistical test. It should also be noted that the tests performed only included the financial information for the 2020 fiscal year, given that this is the first exercise under the new PD system.

That said, this research hopes to contribute to the increase of practices related to the Budget for Results, indicating the use of the *Program Assessment Rating Tool,* as a possible tool to be used in the process of measuring the performance of the PA goals, together with the budgetary and financial monitoring indicators.

Finally, as suggestions for future research, we suggest: (i) carrying out this study for the other PA goals; (ii) research involving qualitative data from PART; and
(i) conducting a study that seeks to identify ways of including performance information as input to the resource allocation process.

NOTES

1 Advisory body to the President of the United States. Source: https://www.whitehouse.gov/omb/. Accessed: October 10, 2020.

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