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RESEARCH ARTICLE

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# ANALYSIS OF THE EFFICIENCY OF TENDERS CARRIED OUT IN FEDERAL INSTITUTIONS OF HIGHER EDUCATION IN THE NORTHERN REGION OF BRAZIL

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## ABSTRACT

This article evaluated the efficiency of bidding processes carried out through Electronic Auction - Price Registration System - SRP in Federal Institutions of Higher Education - IFES in the North region. The study was operationalized through an applied research, characterized as a multiple case study, exploratory-descriptive, using a qualitative-quantitative approach, carried out in 07 Federal Universities in the North of Brazil. Data were collected through documentary research in official documents generated during the bidding process in the Electronic Auction mode – Price Registration System. The results indicate that 6,348 of the items were canceled or deserted, comprising 25.88% of all bid items, indicating a high level of inefficiency in carrying out these processes. Among the institutions surveyed, the Federal University of Amazonas has the highest failure rate, where 33% of its bid items were unsuccessful, thus not being available for purchase. The Federal University of Pará presented one of the best an efficiency index, with only 14% of its bid items failed or deserted.

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## INTRODUCTION

The procurement and contracting process in the Public Administration is guided by item XXI of article 37 of the Federal Constitution of 1988, which determines that all purchases of goods, materials, and contracting of services must be carried out through bidding procedures, whose main purpose is the choice of the best proposal for the Public Administration (Federal Constitution, 1988). The difficulty to carry out purchases in the Public Administration, efficiently and effectively, may be related to the absence of guidelines, administrative systems, and government instruments that help public managers, as well as the scarcity or inexistence of tools to measure the quality of these processes, triggering inefficient and ineffective processes. These difficulties are felt by all public bodies, however, attention is drawn to the Federal Institutions of Higher Education (IFES), considering their

importance to society and, mainly, their peculiarities that prove to be even more challenging about procurement processes, due to the diversity of activities performed, a large number of applicants and, mainly, the need for specific equipment and products, with technical and complex characteristics. In this scenario, the purchasing agent is faced with the challenge of meeting demands that are characterized by specific components and not rarely difficult or limited availability in the market. In these Institutions, the lack of efficiency in the purchasing and the contracting process can lead to a shortage of products and equipment, as well as delays in the provision of services that are fundamental to their operation, causing direct damage to the quality of teaching, research and other activities developed. In the northern region of Brazil, the problem is further aggravated by the geographic location of these institutions, which ends up becoming a sensitive factor in public procurement and contracting processes, which have a national character. Elements such as the freight price, delivery times, place of delivery of acquisitions, and/or provision of services that are difficult to access, end up weighing on the interest of the participation of suppliers, contributing to a large number of failed or deserted processes, and in some cases raising the cost of acquisitions.

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For these IFES, which are autarchies linked to the Federal Government, the Electronic Auction modality, in electronic form, should preferably be used, in compliance with the caput of Article 4, and its § 1 of Decree 5.450/2005, which determines the obligation of the auction modality for the acquisition of common goods and services, and preferably the use in its electronic form, except for some situations of proven unfeasibility, upon justification of the competent authority (Decree 5450, 2005). Attention is also drawn to the use of the Price Registration System, which is a set of procedures, with a view to possible future contracts, and should be adopted whenever possible, in compliance with Art. 15, inc. II, of Law No. 8,666/93 (Law 8,666, 1993). Given the situations listed, it is essential in the public procurement sector to identify elements that favor the improvement in carrying out these processes, considering the various factors involved, such as legislation and legal procedures, complexity and diversity of objects, regional reality, little training of the agents involved. In this context, the guiding question of this research project is: What is the efficiency of bids for acquisitions carried out through Electronic Auction - Price Registration System (SRP) in Federal Institutions of Higher Education (IFES) in Northern Brazil?

The purpose of this article is to evaluate the efficiency of bidding processes carried out through SRP Electronic Auctions in IFES in Northern Brazil. In compliance with the Federal Constitution in art. 37, item XXI, all government spheres are required to use bidding procedures, whose main purpose is to choose the best proposal to contract with the Public Administration (Buriti et al., 2018; Nüske et al., 2017; Pontes & Xavier, 2018). Bidding is the administrative procedure by which a public entity, in the performance of its administrative function, enables all interested parties, who meet the rules established in the summoning instrument, to present proposals among which, it will accept the most advantageous for its hiring (Di Pietro, 2019; Meirelles, 2018). Law No. 8.666/93 is the legal instrument that defines the formal procedures, as well as the applicable bidding modalities, to promote competitiveness and achieve the most advantageous proposal for Public Administration (Santos, 2019). Article 3 of Law No. 8,666/93 lists the purposes of the bidding procedure: the selection of the most advantageous proposal in compliance with the parameters of the summoning instrument, equality between the participants, and the promotion of sustainable national development, which the public administrator must, within reach of these purposes, respect the guiding principles of the bidding (Costa & Massuqeto, 2014; Reis & Backes, 2017).

Art. 22 of Law 8666/93 establishes 5 bidding modalities: competition, price taking, invitation, tender, and auction, with two more modalities being subsequently created: Differentiated Contracting Regime (RDC), through Law No. 10,462/11, and the Auction, through Law No. 10.520/02. The auction is the modality that offers wide freedom of participation for the competition, to classify and qualify the participant with the proposal of the lowest price for the acquisition of common goods and services, whatever the estimated value of the contract (Di Pietro, 2019; Palavéri, 2005; Pontes & Xavier, 2018). This modality can be performed in electronic form, by electronic means of communication at a distance, such as an internet; and in person, in which all bidders will meet in person in a public session, in the presence of the auctioneer and his support team, for the delivery,

opening, analysis and judgment (including verbal bids) of the commercial proposals, and subsequent qualification of the winner (Nüske et al., 2017; Oliveira, 2007; Palavéri, 2005). The Electronic Auction brought more speed about the external phase of the bids, due to the simplification of the process, enabling the reduction of time spent for contracting, expansion of competition at the national level, security and transparency in operations (Almeida & Sano, 2018; Faria et al., 2010; Nüske et al., 2017; Oliveira, 2007). The modalities of bidding, auction and competition shall be processed, whenever possible, through the Price Registration System (SRP), which consists of a set of formal price registration procedures aimed at the acquisition of goods and services for future contracts, which can be better understood as a grouping of mechanisms for the formal registration of prices for future acquisitions (Santos, 2019; Silva et al., 2016). Efficiency and effectiveness are concepts that serve to assess the performance of any organization (Guzmán, 2003; Pinto & Coronel, 2017). Efficiency is related to the best use of resources to achieve an objective, that is, in the case of Public Organizations, the best possible use of public resources in meeting society's needs (Alcantara, 2009; Santos & Rodrigues, 2018). Peña (2008) corroborates by stating that efficiency is the ability to carry out operations, minimizing the use of inputs, to optimize resources, thus being related to the means used. Assessing efficiency becomes difficult in public services, as most activities do not allow for a direct and objective assessment of results, as they operate in open and complex systems (Alcantara, 2009).

Efficient management in the public sector means achieving results, to meet the demands, collective interests and expectations of citizens or organizations that make up society, some examples of indicators for the dimensions of performance, highlighting the areas visited that make up the support processes, are: Budget and Finance, Information Technology, General Services, Purchasing and Contracts, Strategy and Monitoring and Evaluation (Ministry of Planning, 2009).

## METHODS

This article evaluated the efficiency of the bidding processes carried out in the IFES in the northern region of Brazil, through an applied research, as it proposes the immediate use of the results or the verification of theoretical data in practice, generating knowledge, involving truths and local interests for solving specific cases (Chizzotti, 2018; Gerhardt & Silveira, 2009; Paranhos & Rodolpho, 2014). Its concern is focused on the immediate application in a circumstantial reality (Gil, 2019). As for the objectives, it is an exploratory-descriptive research, as it details a phenomenon, seeking qualitative and/or quantitative information that increases the researcher's familiarity with the object under study (Marconi & Lakatos, 2017). Its approach is qualitative - quantitative, considering that the conclusions of a quantitative survey will be used to develop the stage of understanding the phenomenon, the qualitative. Quantitative research generates data in the form of numbers, often presented positively, as being reliable and accurate, probably because of their association with science, while qualitative research generates what is called "rich" or "deep" data", usually in text form (Gray, 2012). The quantitative characteristic of this research refers to the search for numerical identification of the quantities and frequency of

the phenomenon that occurred, bidding items, by category, in the Electronic Auction mode - SRP, in the years 2017, 2018 and 2019, of the Federal Universities of the northern region using statistical techniques both in data collection and in the treatment of these data. Its qualitative approach is evidenced in the sub-process of analyzing the data in depth, through documentary research, looking for possible factors that corroborate the understanding of these events. A multiple case study was carried out, Yin (2015) states that this is a strategy that seeks to investigate a contemporary phenomenon within its real-life context, it is a means to investigate an empirical topic, it is a comprehensive method, with the logic of planning, collecting and analyzing data, which can be a single case study or a multiple case study. All data were collected through documentary research, considering that the use of documents in research should be appreciated and valued, and the wealth of information that can be extracted and retrieved from them justifies their use in various areas, allowing for greater understanding of objects whose understanding requires historical and sociocultural contextualization (Sá-Silva et al., 2009). The documentary research in this work took place in official reports generated by the federal government procurement website - Comprasnet (<https://www.comprasgovernamentais.gov.br/>). Only the reports referring to the years 2017, 2018 and 2019 of all approved bids were selected. The cases were investigated at the following Federal Universities: Federal University of Acre (UFAC), located in the city of Rio Branco - AC; Federal University of Amazonas (UFAM), located in the city of Manaus - AM; Federal University of Pará (UFPA), located in the city of Belém - PA; Federal University of Roraima (UFRR), located in the city of Boa Vista - RR; Federal University of Tocantins (UFT), located in the city of Palmas - TO; Federal University of Amapá (UNIFAP), located in the city of Macapá - AP; and the Federal University of Rondônia Foundation (UNIR), located in the city of Porto Velho - RO. A total of 07 Institutions, selected due to their contributions to teaching, research and extension in the country. The reports consulted were: minutes of the public session, term of adjudication and term of approval of each approved bid. The following steps were taken to reach the objectives: establishment of data categories, tabulation of collected data, statistical analysis of data, interpretation and analysis of data. In this research, we opted for the categorization of data after collection in the field, where the items that were successful or unsuccessful in the surveyed bids were identified. In the next step, data tabulation was performed with the aid of Microsoft Excel spreadsheets, to group the data by institution. In the statistical analysis phase, data were collected and synthesized, using descriptive statistical measures, and graphical methods, in a small number of indicators, without significant loss of information, to allow a better understanding of the phenomenon studied, and to enable concluding the data collected (Silvestre, 2007). In the data analysis phase, the data was organized in such a way as to provide answers to the problem proposed for investigation, and in the data interpretation phase, the broadest sense of the answers was sought, which is done by linking them to other knowledge. Previously obtained (Gil, 2019).

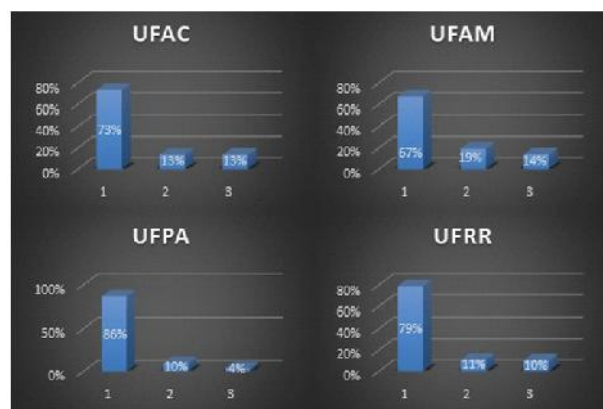
## RESULTS

As a result of the survey, a total of 1006 bidding processes in the electronic auction modality carried out in 2017, 2018 and 2019 were surveyed, for the acquisition of materials, contracting of services, concession of commercial exploration

of physical space and engineering services. From this total, only the processes performed for the acquisition of materials were selected, corresponding to 696 processes, excluding the other processes, whose object were services, of the most varied types. Of the 696 auctions held, 18 processes were abandoned, 02 canceled, and 14 cancelled, according to records in the researched documents, which means a loss of 34 processes, corresponding to 4.88% of the total processes for the acquisition of open materials in the years researched. The completed and approved processes correspond to a total of 662, for all the institutions surveyed. Of these, 518 processes were recorded through the Price Registration System - SRP, in compliance with the objective of this research. Considering that each process has different quantities of items, the analysis of the quantities of items auctioned per process was carried out, identifying, in isolation, the number of successful items, those awarded and approved, and also the items with failure, items canceled in the adjudication or homologation phase and deserted items, which are those that did not come interested in their acquisition. In the results referring to the bid items, a total of 24.524 items in the completed processes were identified, of which 18.176 were awarded/approved, 3.469 were canceled and 2.879 were deserted. Table 01 - Survey of bid items, summarizes the number of processes and items bid for by Institution in each year surveyed. Table 1. Survey of bid items

## DISCUSSION

Figures 01, 02 and 03 shows the graphs of the percentages of adjudicated, failed and deserted items, by Institution, for a more in-depth discussion.



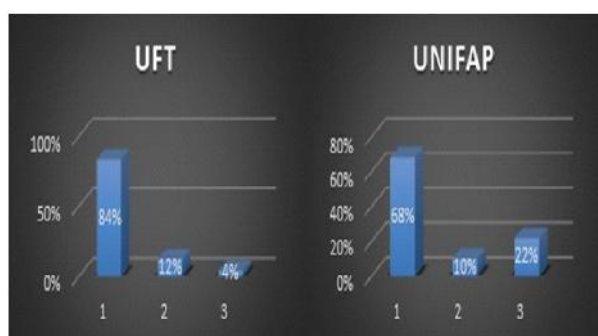
Key: 1 - Awarded; 2 - Canceled; 3 - Deserts

Figure 1. Ufac/Ufam/Ufpa/Ufrr Graphics

Figure 1 shows the percentages of items for each Institution, where a total of 16% of all items, which means 2,906 items were cancelled. Analyzing individually, UFAM stands out, with 19% of its items in this condition. And the UFPA with the lowest percentage of canceled items, only 10%. The deserted items comprise a total of 12%, that is, 2,211 of the items were not interested, with an individual highlight for UFAM, with 14% of its items deserted. And positive highlight for UFPA, with only 4% of items without interested parties. It is noteworthy that such indexes mean high percentages, both in the sum of the Institutions, and per Institution, for canceled and deserted items, such items were not approved, consequently causing the non-compliance with the demand, which means the lack of availability of these items for acquisition and use, generating with a possible new bid, causing rework and new ones for those involved and new deadlines for service, directly

Table 1. Survey of bid items

IFES	Year	Processes completed	total items	Items awarded/approved (accepted and enabled)	Items canceled on acceptance/judgment	deserted items
UFAC	2017	19	1028	708	213	107
	2018	18	1203	918	108	177
	2019	19	1271	940	144	187
UFAM	2017	81	3412	2572	466	374
	2018	74	3886	2236	920	730
	2019	73	2801	1956	550	295
UFPA	2017	30	1306	1019	193	94
	2018	23	758	741	17	0
	2019	13	475	432	40	3
UFRR	2017	17	832	655	52	125
	2018	15	983	755	167	61
	2019	12	558	464	36	58
UFT	2017	13	1192	1037	121	34
	2018	16	520	415	89	16
	2019	8	201	149	23	29
UNIFAP	2017	8	852	497	93	262
	2018	10	228	205	22	1
	2019	6	124	119	5	0
UNIR	2017	18	542	410	61	71
	2018	19	815	700	87	28
	2019	26	1537	1248	62	227



Key: 1 – Awarded; 2 – Canceled; 3 – Deserts

Figure 2. UFT/UNIFAP Graphics

impacting the activities of the Institutions, and the efficiency of their institutional purchases. Failure to meet procurement objectives, rework and delays in procurement are elements that identify the inefficiency of these processes. The UFT and UNIFAP Institutions, together, presented a percentage of 11% of their items canceled, 353 items, and 11% of items deserted, meaning 342 items that were not interested. For a total of 22% of your items no potential supplier has been selected. For the Institutions, this means the need for a new tender, rework, new deadlines and even the non-fulfilment of their material needs, causing damage to their activities and demonstrating the inefficiency of these processes.



Key: 1 – Awarded 2 – Canceled 3 – Deserts

Figure 3. UNIR Graph

UNIR had a total of 18% of its unsuccessful items, including canceled and deserted items, a high percentage compared to its needs, and impacts on its administrative and academic activities. The data presented reflect inefficiency in institutional purchasing processes, considering the failure to meet their demands for the acquisition of goods, which are essential for carrying out their activities, such data are worrisome considering the high number of items that were not adjudicated/approved. This article concludes that the institutions surveyed, in the years 2017, 2018 and 2019, presented a high rate of inefficiency in the bids carried out in the electronic auction modality - Price Registration System, considering large amounts of canceled and deserted items. It is noteworthy that each item not acquired in the bidding is a possible rework of all those involved in the purchasing process, for a new acquisition process, or even may mean not fully meeting the needs of these Institutions from the point of view of Management and Acquisition of materials, directly impacting their services provided to society. This article leaves as a suggestion for future works, to deepen the study of the main reasons related to canceled and failed items, seeking to understand their causes, through research in official documents generated in the bids, and, mainly, to develop organizational strategies aimed at reducing these rates of failure and greater efficiency in their purchases of materials.

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**Key Points:** Public Purchases, electronic auction, price registration, efficiency.

The Institutions object of this study need to improve their institutional purchasing processes, seeking improvements in the internal phase, such as better planning of purchases, improving their Terms of Reference, specification of objects and estimated values, and also in the external phase of the bidding, aiming with this greater efficiency in its purchases of materials, which are fundamental to the provision of its services to society.

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