

## **REQUIREMENTS FOR GOVERNMENT PROCUREMENT OF BRAZILIAN FEDERAL UNIVERSITIES: CONTENT ANALYSIS OF JUDGMENT OF THE BRAZILIAN AUDIT COURT**

### **EXIGÊNCIAS PARA AS COMPRAS GOVERNAMENTAIS DAS UNIVERSIDADES FEDERAIS BRASILEIRAS: ANÁLISE DE CONTEÚDO DE ACÓRDÃOS DO TRIBUNAL DE CONTAS DA UNIÃO**

**Ricardo Belinski, Mestre**

<https://orcid.org/0000-0002-0124-9639>

[ricardobelinski@gmail.com](mailto:ricardobelinski@gmail.com)

Universidade Federal do Paraná | Programa de Pós-Graduação em Gestão da Informação  
Curitiba | Paraná | Brasil

**Guilherme Francisco Frederico, Doutor**

<https://orcid.org/0000-0002-5330-4601>

[guilherme.frederico@ufpr.br](mailto:guilherme.frederico@ufpr.br)

Universidade Federal do Paraná | Programa de Pós-Graduação em Gestão da Informação  
Curitiba | Paraná | Brasil

**Maria do Carmo Duarte Freitas, Doutora**

<https://orcid.org/0000-0002-7046-6020>

[mcf@ufpr.br](mailto:mcf@ufpr.br)

Universidade Federal do Paraná | Programa de Pós-Graduação em Gestão da Informação  
Curitiba | Paraná | Brasil

Recebido em 02/junho/2020

Aprovado em 26/novembro/2020

Publicado em 01/janeiro/2021

Sistema de Avaliação: *Double Blind Review*



Esta obra está sob uma Licença Creative Commons Atribuição-Uso.

## ABSTRACT

This paper addresses the topic of government procurement based on the content analysis of judgment issued by the Brazilian Audit Court (TCU) to Brazilian federal universities in 2017, and 2018, covering the acquisition of consumption materials, and fixed assets. This content features requirements for university administrations on government procurement, bidding, and electronic tender procedures. Forty-one judgment were selected from more than 49,000 issued during this period. The content analysis indicated a repetition of the same audit recommendation for different universities, evidencing the need for monitoring the implementation of information management practices. The results point to requirements for improvement of university administration, such as the systematic placement of tacit knowledge in manuals defining procedures for government procurement events. The investigation addresses an area considered of low significance by audits, but of high risk in personal accountability for the competent authorities of Brazilian federal universities.

**Keywords:** Public Administration. Supreme Audit Institutions. Accountability. Government Procurement. Information Management.

## RESUMO

A pesquisa aborda o tema compras governamentais a partir da análise de conteúdo de Acórdãos do Tribunal de Contas da União emitidos para as universidades federais brasileiras entre 2017 e 2018, abrangendo a aquisição de material de consumo e bens permanentes. Esse conteúdo apresentou exigências para a gestão universitária sobre compras governamentais, licitação e procedimentos no pregão eletrônico. Foram selecionados 41 Acórdãos dentre mais de 49 mil emitidos nesse período. Na análise de conteúdo constatou-se que houve repetição de uma mesma recomendação de auditoria para diferentes universidades, fato que evidencia a necessidade de monitoramento para implantação de práticas em gestão da informação. Os resultados apontam para exigências de aprimoramento da gestão universitária, tais como a sistematização de conhecimentos tácitos em manuais sobre os procedimentos nas compras governamentais. A investigação aborda uma área considerada de baixa materialidade pela auditoria, mas de alto risco de responsabilização personalíssima para as autoridades competentes das universidades federais brasileiras.

**Palavras-chave:** Gestão Pública. Entidades de Fiscalização Superior. *Accountability*. Compras Governamentais. Gestão da Informação.

## **1 INTRODUCTION**

Since the late 1990s, with the enactment of the Law on Bids, and Contracts, the competent authorities of the Brazilian federal government have been required to know the legislation, and jurisprudence of the Supreme Audit Institutions (SAI) on government procurement, such as the Brazilian Office of the Comptroller General (CGU), and the Brazilian Audit Court (TCU). The challenge of public administrators lies in achieving simultaneous compliance in the constitutional principles of legality, and efficiency in the federal government's bidding, and purchasing processes, while adequately supplying public agencies with consumption materials, and fixed assets.

Public bidding presupposes an information management strategy, as well as the continued training of public servants, such as the auctioneers<sup>i</sup>, in addition to the implementation of information selection, and deployment routines for decision making purposes in Brazilian federal universities. Almeida, and Sano (2018), when addressing the issue of speed in government procurement, considered four dimensions: i) legislation, and procurement processes; ii) framework, and organization of the procurement sector; (iii) procurement systems; and iv) human resources in the procurement sector.

The search for excellence has been in the context of reduction of bureaucracy since the 1970s, and the application of the principles of managerialism in public administration (DE PAULA, 2005). However, at least in discourse, the idea of excellence in the administrative management of universities is present despite a very low operational deployment as point out Gonçalves *et al.* (2017).

The transposition of management principles from the private sector to the public is a complex challenge in management given the existing bureaucracy (DENHARDT; CATLAW, 2017). Assisting public agencies in the search for efficiency is one of the tasks of the SAIs, such as the CGU, and the TCU, which audit government purchases for federal universities (TCU, 2020b). Dias *et al.* (2020) addressed the importance of internal auditing at federal universities, especially in strengthening the administration, and effectiveness of SAIs control actions, especially in line with the CGU's Recommendations.

The relevance of this study lies in the risk of the SAIs holding public managers accountable for government purchases of consumption materials, and fixed assets, in particular the TCU, in an area considered of low importance by audits (LEITÃO; DANTAS, 2016); that is, this paper addresses a subject of high risk, and low importance in audits of

university administrations. Government purchases of consumption materials, and fixed assets comprise a small financial share among the hundreds of contracts of federal universities, according to data from the National Treasury of Brazil (STN, 2020), and the National Association of Administrators of Federal Higher Education Institutions (ANDIFES, 2019).

The work of the SAI happens after decision-making, and in events already occurred making it difficult to improve public management in real time (ARANTES et al., 2005); this time lapse impairs the organizational learning process. However, this paper presents a mapping of competencies for professionals working in government procurement, precisely one of the difficulties pointed out in the Montezano study (2019), along with other difficulties for the implementation of competency management in public higher education entities: personnel restrictions for its implementation, lack of support from management, and resistance from employees.

The subject addressed is complex, and multifaceted because of covering areas of knowledge such as: public administration, law, information management, and logistics. In particular for targeting these at the activities of the auctioneer, and other authorities that work in the internal, and external stages of the e-procurement bidding session (JUSTEN FILHO, 2002).

The methodological strategy has a qualitative nature, and uses content analysis, based on Bardin's (2016) techniques, to address the theme "tenders", and "government procurement" from the point of view of management enhancements, without entering the discussion on legal terms around tenders, and contracts, such as intent or guilt. In contrast to the predominant legal universe that governs public tenders (JUSTEN FILHO, 2002), the results of this study target managerial aspects of the use of information in the process of improvement of public administration.

Thus, the partial results of the research, carried out during the years of 2018, and 2019, in the Graduate Program in Information Management of the Federal University of Paraná, identify the main requirements to be addressed in the logistics of federal universities, from the content analysis of judgments issued by the TCU in 2017, and 2018 for Brazilian federal universities.

After this introduction, the second part brings the theoretical foundation, addressing government procurement, professional profiles, information management, and learning. The third part features the methodological procedures for content analysis of judgments by the

TCU. The fourth part, in the discussion, and results, introduces the number of documents, the most frequent ideas, the judgments issued to federal universities, the categories of analysis on the subject, and the findings of the TCU on government procurement; finally, guidance for public administrators in the area of logistics, and tenders are presented. The fifth part presents the final considerations, and limitations of this study.

## **2 THEORETICAL FOUNDATION**

Innovation, and agility in government procurement are historically related to the enactment of laws, and jurisprudence of the Supreme Audit Institutions (SAIs). Tenders require a specific profile from professionals working in public procurement given the need to be familiar with the pertinent legislation, and jurisprudence, and is indicative of how information management can be managed as a good practice in public procurement.

### **2.1 INNOVATION, AND AGILITY IN INTERNET PURCHASES IN GOVERNMENT PROCUREMENT**

The late 1980s brought changes in Brazilian government logistics, in a context of recreating a government that "worked better, and cost less" (DENHARDT; CATLAW, 2017, p. 216). These authors state that, in this economic rationalism, public administrators sought to consolidate accountability, and high performance through better administrative structuring, such as the government procurement process.

Melo Filho (2020) states that the Federal Constitution of Brazil, enacted on October 5, 1988, for the first time brought the requirement of tenders for government purchases. This mention is expressed in Article 37, item XXI, which deals with the general principles, and norms of public administration. Article 22, item XXVII, states that the federal administration has the sole competence to legislate on the general rules for tenders, and contracting for the public administration of direct, autarky, and foundations at federal, state, federal district, and municipal levels. Therefore, since 1988, public procurement has become more transparent, and replaced numerous state and municipal laws with something valid in the national territory (MELO FILHO, 2020).

Although considered unconstitutional, the power delegated to the Federal Government to legislate on tenders for states, and municipalities is the understanding currently in force. Thus, Justen Filho (2002) said it was defined that standardizing general bidding rules for all entities of the federation would be necessary. This reality remains an innovation, including the

consolidation of an online platform for the promotion of e-procurement bidding (*E-Procurement*) in the Comprasnet system in the first half of 2020. <sup>ii</sup>

Purchasing by Brazilian federal universities is carried out in the Integrated General Services Management System (SIASG), established by Decree no. 1,094 of March 23, 1994. Therefore, a General Logistics Strategy for Federal Public Administration was developed, which is responsible for satisfying these requirements (BRASIL, 2015), that should preferably be undertaken through e-procurement bidding.

The first article of Law no. 10,520, of July 17, 2002, allowed the adoption of the tender bidding modality for the acquisition of common goods, which are those whose performance, and quality standards can be objectively defined in the notice to tender, through the usual market specifications.

In the initial stage of government procurement, needs planning results in drafting a document called the Terms of Reference. The notice to tender, with the rules for participating in the e-procurement bidding stage, must be accompanied by the Terms of Reference, which contains the technical, and administrative delivery conditions for product tendered, including forms of supplier assessment (BRASIL, 2015; BRASIL, 2017b).

Law no. 10,520 of July 17, 2002, regulated the e-procurement bidding session. In general, the e-procurement bidding session for government purchases, provided for in Decree no. 5,450 of May 31, 2005, is a form of reverse auction held over the Internet, promoted by a public servant designated as the auctioneer. Oliveira et al. (2020), when addressing the strategic alignment between the Institutional Development Plan (PDI), and the Strategic People Management Plan at a federal university, addressed the need for consistency between the needs of the institution, and the sizing of its workforce. This area of government procurement is quite complex, as it requires competencies (*soft skills*), and practical knowledge (*hard skills*) that are obtained and developed while working in the auctioneer role.

Auctioneers of federal universities are responsible for mastering the rules of e-procurement tender bidding, striving to obtain knowledge on the bureaucratic rituals provided for in the legislation, and jurisprudence of the TCU to run public sessions. The permanent tender committee is responsible for avoiding waiving tenders, whenever possible (TCU, 2020b).

The federal government is using computerized systems to control the stages of public procurement, in the context of public procurement, since the mid-2000s; as well as

monitoring the contractual execution that occurs after the conclusion of the public bidding session of the e-procurement tender process (JUSTEN FILHO, 2002; COSTA et al., 2019).

Since the inclusion of the e-procurement tender process, the main objective of Brazilian public procurement is to reduce costs for the government, and promote greater effectiveness, efficacy, and transparency in purchasing. There is also a dimension of emerging approaches in the area of public policies, such as sustainable purchases, and the use of tenders in government market reserve for small, and micro enterprises (COSTA et al., 2019).

In a broader view of the evolution of the legislation on bidding it is important to mention the dimension of innovation in the national scenario. Innovation is a duty of the state, state Mulgan, and Albury (2003), because public services must be more efficient. In Brazil, with the enactment of Constitutional Amendment no. 85 of February 26, 2015, there was the inclusion of the single paragraph stating that the State will encourage the establishment, and strengthening of innovation in companies, as well as in other entities, public or private, the establishment, and maintenance of technology parks, and centers, and other environments that promote innovation, the performance of independent inventors, and the creation, absorption, dissemination, and transfer of technology.

Law no. 13,243 of January 11, 2016, instituted a new Legal Framework for Science, Technology, and Innovation in the country, with the amendment of some provisions of Law no. 10,973/2004, known as the Innovation Act. Simplified procedures for the acquisition of common goods, and services with characteristics of innovation was one of the novelties (TCU, 2020a; MCTIC, 2020). In order to track the incremental innovations in the public acquisition of goods, and services, a professional with specific technological profile, and knowledge must be trained.

## 2.2 PROFILE OF THE PUBLIC PROCUREMENT PROFESSIONAL

In the area of tenders, and government procurement, studying the career in public administration is relevant since Silva et al. (2019) state that this is a crucial factor for valuing the employee, for providing motivation, contributing to the improvement of quality of life, and safety at work, in addition to guiding personal training in the development of technical, and functional skills.

The environment of continuous development in the careers of federal university employees was changed by the new career plan of administrative technical positions in

education with Law no. 11,091 of January 12, 2005, called PPCTAE. This law increased employee compensation for the progression by professional training in four levels (A to E) through courses from 90 to 180 hours in duration, in addition to increasing the remuneration for qualification through regular studies (increases of 5% up to 75% on basic salary) by formal education in undergraduate, specialization, master's, and doctorate levels (GONÇALVES et al., 2017).

Compared to procurement professionals in the private sector, procurement professionals in the government sector have narrower prospects on logistics practices, states Larson (2009). This means less public servant attention to logistics management factors, such as efficiency, cost, and strategic alliances between buyer, and seller, provided for in material, and logistics management manuals (BOWERSOX, 2006; BALLOU, 2006; CHOPRA, MEINDL, 2016).

In the public sector, there is greater emphasis on compliance with existing legislation on tenders, that is, there is an emphasis on the constitutional principle of legality, states Larson (2009). Procurement professionals in the government sector have essentially different objectives, and logistics practices, state McCue, and Pitzer (2005). Public sector professionals are driven by laws, and regulations (LARSON, 2009). This paradox marks the clash between the constitutional principles of legality, and efficiency in public management. After all, how to accomplish logistics efficiency within the boundaries provided in law? Management of information, and knowledge of the case law present in the judgments of the TCU requires investment in processes, and people (GONÇALVES et al., 2017; TCU, 2020a).

Knowledge is the outcome of a list of skills, and competencies that organizations develop to achieve their objectives, usually the result of transforming people's tacit knowledge into explicit knowledge for management. Many organizations recognize the "importance of knowledge that can be accumulated in their activities, tasks, and operations" for years, which can be shared among people (CHOO, 2006, p. 127). It is information management that allows the transformation of data, and information into knowledge, says Davenport (1998).

Goez (2018, p. 123) states that there is a "direct relationship between the concept of competence with lifelong learning, and its importance in the Information Society" in accessing, searching, and using information for decision-making. Learning involves two different processes: an external process of interaction of individuals, and their social, cultural,



and material environments, and an internal psychological process of elaboration, and acquisition of knowledge (ILLERIS, 2013).

This process of transforming data, and information into knowledge has information management as an important management tool, given that public administrators are, and should be held accountable according to content present in norms, normative instructions, and jurisprudence of the TCU (DENHARDT; DENHARDT, 2007), in an environment of accountability in the public service.

It is up to professionals working in logistics, and public tenders to transform data, and information into knowledge. The signs, when physically structured, and selected, can be transformed into data that, cognitively structured, endowed with meaning, and significance, can be transformed into information. In short, knowledge is the result of "information endorsed with belief, and justification", explains Choo (2006, p. 132).

Monitoring by SAIs targets guiding, educating, and preventing risks in public administration, at risk of being held accountable by the competent authorities (ARANTES et al., 2005). Using the result of an audit cycle for improvement in subsequent years in public administration is one of the objectives of SAIs, recommends the manual of technical guidance for internal government audit activities of the Federal Executive Power (BRASIL, 2017a). This knowledge, once consolidated in purchasing professionals, enables them to document, and monitor good practices, and manage the information derived from the auctioneer activity.

### 2.3 INFORMATION MANAGEMENT PRACTICES IN PUBLIC PROCUREMENT

The entire information environment addresses organizational values, and beliefs about information (DAVENPORT, 1998). Likewise, professionals use information in their work processes, barriers to the flow, and sharing of information, as well as information systems, and new technologies.

In the life cycle of information, physical, technological, and human assets make use of information that supports processes that maintain the institution's operations, says Semola (2003); for this author, the processes are: handling, storage, transportation, and disposal of information, with the following characteristics: confidentiality, integrity, availability, authenticity, and legality. Detlor (2010) complements that the information life cycle requires information management, and points to storage, distribution, and use of information in

organizations as steps. Best (2010) states that the dissemination of internal, and external information helps in organizational performance.

Cooper, and Schindler (2011) expand the discussion with emphasis on the administrator, and comments on a hierarchy between the types of information driven decision-makers, as follows: i) at the basic level they are intuitive, based on previous experiences or instinct; ii) at the intermediate level, they are standardized, with some decisions based on research, use of tested, and previously approved methodologies using limited data; and iii) at the higher level they are visionary, in which each decision is guided by research, with innovation in the combination of research methodologies, and with access to data, and findings in all instances of the organization.

The level of knowledge for decision making requires learning. Senge (2011) said that learning is an eternal process, that one never reaches the end, because there can always be further enhancement. "The more we learn, the more we become aware of our ignorance," explained Senge (2011, p. 44) in his fifth discipline on systemic thinking, which integrates the other disciplines: personal mastery, mental model, shared vision, and team learning.

With the advent of the Internet, new opportunities to expand knowledge in the workplace have emerged. Siemens (2018), in his learning theory called Connectivism, states that the Internet allows real-time access to repositories of information that promote learning. Another author, Bell (2011), summarized Connectivism as one of the learning theories mediated by technology. The complication of George Siemens Connectivism was addressed by Lima et al. (2020), in their study in public higher education institutions of their methodological approaches, and their impacts on the use of social media. For Lima et al. (2020, p. 121), Connectivism refers to "the integration of the principles of chaos, network, complexity, and self-regulation theories".

Learning, and information management practices in public procurement require consultation of TCU judgments which is facilitated by the existence of an online government portal, which is inserted in the movement of open government data (*OPEN GOVERNMENT WORKING GROUP*, 2007). These documents materialize legal accountability because they result from an audit of compliance with current legislation, and jurisprudence on government procurement, and of which public administrators should be aware (ROMZEK; INGRAHAM, 2000). For this, considering the life cycle of information, from its creation to its disposal is necessary (Semola, 2003).

Thus, government portals, such as the TCU's, function as a centralized access point to accountability documents issued by controller agencies, and, if consulted by researchers, and citizens, says Lourenço (2015), promote accountability. By analyzing the types of accountability applied to the public sector – hierarchical, professional, legal, and political, authors Duarte et al. (2018) identified that most studies on accountability are centered in the approach of legal, and political accountability, indicating that the source of control is located in the external environment, usually in compliance with laws, and the delivery of response to controller entities.

One of the elements to be addressed in audits was the Program for Restructuring, and Expansion of Federal Universities (REUNI), established by Decree no. 6,096 of April 24, 2007, which suddenly expanded the offer of student vacancies in higher education, and required a greater volume of government purchases to support the increase in infrastructure without prior planning, and maturation of internal communication on long-term goals, and objectives (ABREU; MARRA, 2019).

In short, as per Bardin (2016), this paper uses or the following information management context, and analysis categories: learning, information life cycle, and transparency.

### **3 METHODOLOGICAL PROCEDURES**

This is a qualitative, documental, and exploratory research, derived from studies during the master's degree in Information Management. Qualitative research presupposes the correct choice of timely methods, and theories, in the recognition, and analysis of different perspectives as part of knowledge production (CRESWELL, 2003; FLICK, 2004). The epistemology adopted in this documental research was objectivism from a post-positivism philosophical perspective (CROTTY, 1998), in which the content analysis technique (BARDIN, 2016) was applied in TCU judgments.

Judgments issued to federal universities were collected, and dealt only for government purchases of consumption materials, and fixed assets in 2017, and 2018 found in the TCU website (<http://www.tcu.gov.br>) in the second semester of 2018.

One of the characteristics of the TCU judgments is the presence of multiple sources of evidence, including interviews, and responses from public administrators of universities to audit questions. These documents have the characteristic of presenting the analysis of events

through the triangulation of multiple sources of evidence: documents, interviews, observation, validation of computerized systems, according to guidelines of the International Organization of Supreme Audit Institutions (INTOSAI, 2016).

For Bardin (2016), the choice of *the corpus* of analysis comprises the stage of pre-analysis, and floating reading. This study considered the judgments issued to the 69 existing federal universities in December 2018, and which were monitored through external audits in 2017, and 2018 for government purchases of consumption materials, and fixed assets. A *corpus* is outlined by the criteria of relevance, homogeneity, and synchronicity, according to Bauer, and Aarts (2015).

According to the National Association of Administrators of Federal Educational Institutions, in 2019, the 69 Brazilian federal universities worked in 298 municipalities, had 1,333,826 students enrolled; 199,244 Master's, and doctoral students; 398,100 undergraduate vacancies; 5,118 undergraduate courses (ANDIFES, 2019). In 2019, to sustain this educational structure, almost 7 billion Brazilian reais were allocated for funding, of which the smallest part is for government purchases of consumption materials, and fixed assets.

### 3.1 STEPS FOR PRE-ANALYSIS OF CONTENT

Due to the procedural nature of the content analysis method, the stages of data collection, and analysis took place simultaneously (BARDIN, 2016). In consultation of the TCU website, it was found that, in the 2017, and 2018 cycle, judgments were issued to 28 of the 69 federal universities on the logistics of consumption goods, and permanent assets. The content analysis of these documents was aided by computers using CAQDAS (*Computer-assisted qualitative data analysis software*) (KELLE, 2015), adopting the NVivo software for coding, and analysis. Registration units (words, and themes) related to government procurement were identified.

To understand the content of the documents issued by the controller agencies, we consulted the TCU's Operational Audit Manual, which contains the principles, and standards that guide the performance of external inspection work by applying international standards to the work of operational audit of the court's technical units, with the first version published in 1998, and revised in the years 2000, and 2010 (TCU, 2010; TCU, 2020a). The novelty of this manual was the approach that the cycle of performing the operational audit modality in the

public sector must be aligned with the International Standards of Supreme Audit Institutions (ISSAI) of the International Organization of Supreme Audit Institutions (INTOSAI).

The work of the TCU covers both operational, and compliance audits, and there may be some overlap between these two types of work (TCU, 2020a). On the one hand, operational audits addressed complex, and subjective issues of economics, efficiency, effectiveness, efficacy, and equality in public management, resulting in greater flexibility in the choice of audit themes, objects, working methods, and communication of results (TCU, 2020b).

The objective of operational audits is to contribute to administratively improving public administration. The auditor's posture is that of a consultant in public policies in an attitude of partnership, and cooperation. The operational audit findings are the result of the comparison between the situation found, and the previously defined criteria for it, and contains the following attributes: criterion (what it should be), condition (what it is), cause (reason for deviation from the criterion), and effect (consequence of the situation found), in line with the INTOSAI (2016) guidelines.

In their turn, compliance audits present objective conclusions about the compliance of transactions with laws, and regulations, in addition to the inadequacy of internal controls, illegal acts or fraud, i.e., the objective is to verify whether the public administrator's administrative acts were performed within the constitutional principle of legality, and the auditor's position is similar to that of a judge as an independent, and impartial external agent (TCU, 2020b).

The judgments issued by the TCU were analyzed based on information management practices (DETLOR, 2010; BEST, 2010), and the information life cycle (SÊMOLA, 2003). Thus, the universities audited, the judgments issued for those on the list, as well as the prevalence of a compliance audit were identified.

#### **4 RESULTS AND DISCUSSION**

The discussion begins by presenting a step by step for content inference, and interpretation (BARDIN, 2016). Given the numerous judgments issued annually by the TCU, public administration is responsible for implementing appropriate information management systems to transform data, and information into knowledge (DAVENPORT, 1998).

#### 4.1 TCU JUDGMENTS ISSUED IN 2017, AND 2018

In consultation on the TCU website, a total of 49,933 judgments issued in 2017, and 2018 were located, as shown in Table 1. These documents were directed to different Brazilian public entities, covering a range of issues, including tenders.

**Table 1** Total judgments issued by the TCU (2017-2018)

| YEAR         | TCU                | DOCUMENTS     |
|--------------|--------------------|---------------|
| 2017         | First Chamber      | 11,255        |
| 2017         | Second Chamber     | 10,378        |
| 2017         | Plenary            | 2,925         |
| <b>Total</b> |                    | <b>24,558</b> |
| 2018         | First Chamber      | 12,909        |
| 2018         | Second Chamber     | 10,058        |
| 2018         | Plenary            | 2,408         |
| <b>Total</b> |                    | <b>25,375</b> |
|              | <b>Grand Total</b> | <b>49,933</b> |

Source: Brazilian Audit Court (2019).

On the TCU website, the documents consulted show the judgments that were issued, and mentioned the word "university". From this list, the documents dealing with federal universities were extracted, including recommendations to the Ministry of Planning, Development, and Management, current Ministry of Economy, responsible for government procurement, resulting in more than 11 thousand documents, 23% of the total. In floating reading, according to Bardin (2016), 41 documents were selected for this content analysis (Table 2).

**Table 2** TCU judgments issued to universities (2017-2018)

| YEAR | TCU                    | JUDGMENTS           | SAMPLE   | AMOUNT    |
|------|------------------------|---------------------|--|-----------|
| 2018 | First Chamber session  | 5,516               | 1291 – 1971  | 2         |
| 2018 | Second Chamber session | 180                 | 6326 – 8020 – 8021 – 9364 – 10194  | 5         |
| 2018 | Plenary session        | 303                 | 0538 – 1033 – 1451 – 1745 – 1796 –<br>2076 – 2587 – 2588 – 2681 – 2889                         | 10        |
| 2017 | First Chamber session  | 4,122               | –  | 0         |
| 2017 | Second Chamber session | 1,079               | 1620 – 5235 – 5428 – 5810 – 7868 –<br>7869 – 7872 – 7884 – 9316 – 9456 –<br>9565               | 11        |
| 2017 | Plenary session        | 243                 | 0367 – 0581 – 0592 – 0604 – 0917 –<br>0918 – 1003 – 1056 – 1469 – 1837 –<br>2141 – 2434 – 2593 | 13        |
|      | <b>Total</b>           | <b>11,443 (23%)</b> |  | <b>41</b> |

Source: Based on the website of the Brazilian Court of Audit (2019).

One of the characteristics present in the judgments was the constant reference to previous judgments, i.e., the consultation of a knowledge base by the Ministers of the TCU. To understand the subject of government procurement, in a systemic view (SENIGE, 2011), it was necessary to consult the content of other judgments, given that the TCU approaches public entities without addressing their specificities.

#### 4.2 THE MOST FREQUENT REGISTRATION UNITS

The registration units (words, and phrases) were identified, as per Bardin (2016), using consultation of the frequency of appearance of words in the 41 judgments using the NVivo software; in which the most frequent words were grouped by "derived" words. As a result, three analyses streams were identified:

- a) The **responsibility of the dean or competent authority** in drafting government procurement policies, being responsible for the risks in acquisitions, for the appointment of employees through ordinances, in addition to having to comply with the determinations of the SAIs, eliminating the vices, and indications of illegalities in tenders;
- b) The **practices, and procedures adopted by the auctioneer** in the public session with the bidding companies, the validation of the prices, and deadlines set out in the notice to tender, and the term of reference, as well as the individual responsibility of knowing, and applying the jurisprudence of the TCU in the e-procurement bidding session, such as ensuring the bidding companies' right to appeal in the stage of qualification of the bidding session, and the validation of commercial proposals;
- c) The **need for the planning stage** before the e-procurement bidding session, in which the Reference Term is drafted, and the purchase schedule is estimated, preferably in the Price Registration System; this stage provides for studies on the characteristics of the products that will be accepted by the auctioneer in the event.

#### 4.3 THE CONTENT OF THE TCU CASE LAW ON GOVERNMENT PROCUREMENT

The judgments highlighted the responsibility of the auctioneer, and the competent authorities of federal universities. For the TCU, during the e-procurement bidding session, the competent authority is: i) responsible for supervising the tender, prices, and procedures adopted by the auctioneer; and ii) responsible for supervising the powers delegated to the auctioneer, the support team, and those responsible for the price survey, and supervision of contracts through active internal controls (Judgment TCU 1,659/2015 Plenary session).

As an example of the complex accountability for administrative acts in university administration, in a given case, the audit did not receive information on the list of all those responsible parties who, during a tax year, delivered the responsibilities defined in art. 10 of Normative Instruction no. 63/2010 of the TCU (Judgment TCU 1,971/2018 First Chamber session).

On formalizing responsibilities, there was mention of the need to define the role of each employee in the government procurement process, with publication of their respective appointment ordinance. Deans delegate, and supervise all administrative acts, and facts in federal universities (Judgment TCU 1,659/2015 Plenary session), i.e., the delegation of responsibility does not waive the dean's office from being responsible for the annual statement of accounts, nor from maintaining an active control of all administrative acts in the university.

The purchasing plan, and planning were requested in audit, especially in the context of bidding waiver, and emergency purchases. Briefly, the focus on compliance auditing has been identified.

#### 4.4 CONTEXT UNITS FOR ANALYSIS

From the content of the judgments, the categories of context, and analysis related to information management were identified: learning, information lifecycle, and transparency (BARDIN, 2016). The survey identified the following categories:

- a) **Logistics, and government procurement:** strategy, products, procurement, controls, and sustainability.
- b) **Public administration:** Law of Access to Information, accounting, and tenders, and contracts.
- c) **Law of Access to Information** on the judgments of the TCU whose requirements on the internet use, documents, time, availability, plans, regularity, profile, and appointment of heads, accounting, the list of roles responsible at the university, and audit documents were identified.
- d) **Transparency, and disclosure of documents** comprising the acquisition process: request for acquisition, preliminary technical studies, price estimates, technical, and legal opinions on the Internet (Judgment TCU 538/2018 Plenary session).



Among the documents, the disclosure of the annual procurement plan on the institution's website was requested, and which must be approved by the organization's highest authority (Judgment TCU 2.889/2018 Plenary session). These are the higher collegiate entities in federal universities.

Regarding those responsible for university administration, the recommendation was publishing the decision regarding the regularity of the accounts issued by the SAIs on the university website; disclosure of the public commitments agenda of the officer responsible for procurement, usually the vice-dean of administration was also requested (Judgment TCU 538/2018 Plenary session).

It was identified that the responsibility for government procurement fell on the dean's office, the vice-deans, and the members of higher collegiate entities, as established in each university's organizational chart (Judgment TCU 2,034/2017 Plenary session). In view of the very personal accountability for government procurement, the TCU recommended assigning to a committee, comprised of representatives of the various sectors of the university, the responsibility for assisting senior management in decisions related to acquisitions, in order to achieve the best result for the university as a whole (Judgment TCU 2,889/2018 Plenary session).

Although tendering is mandatory, according to the Tender, and Contracts Law (Law no. 8,666/1993), in a study undertaken with 14 public organizations, including universities, between January 2016, and August 2017, the TCU identified a large number of direct purchases through waiver of tender in 75% of all tenders. In monetary amounts, this corresponds to 40% of the total amount (Judgment TCU 1,796/2018 Plenary session). That is, whenever possible, exemption from tender was sought in government procurement, without the definition of a risk management policy in acquisitions or an annual procurement plan, when requested in audit.

Thus, the TCU found the following weaknesses in government procurement in federal universities: the absence of a risk management policy; the lack of contracting risk management; the lack of initiatives to train management in risk management for the areas of contracting; the absence of monitoring of direct contracting without tenders; the lack of preliminary technical studies; the absence of an annual contracting plan; the absence of measures to avoid emergency contracting; the dearth of assessment of the effective link between the nature of the institution, and the object contracted, in addition to proven

compatibility with market prices, in the contracts under item XIII of Art. 24 of Law no. 8,666/1993 (Judgment TCU 1,796/2018 Plenary session).

#### 4.5 PARADOX BETWEEN THE PRINCIPLE OF LEGALITY, AND EFFICIENCY IN GOVERNMENT PROCUREMENT

The content analysis of TCU judgments pointed out that the purchasing system of federal universities, which were part of this research, did not address information in the jurisprudence of TCU judgments issued to other public administration agencies. There was repetition of subjects previously addressed by the SAI in a continuous cycle of recommendation available in the TCU portal. This is evidence that the information of the SAI was not used to improve public administration (GONÇALVES et al., 2017).

In consultation of the TCU judgments issued in 2017, and 2018, the following requirements were observed: i) the presence of recurring audit recommendations in the strategic, tactical, and operational logistics planning of federal universities; ii) the requirement of legal compliance in administrative acts supporting university management; (iii) the identification of relevant management points that would be audited in the next audit cycle; and iv) the identification of professional skill sets for staff working in the purchasing, and tender sector of universities.

In the content of TCU judgments, the prevalence of the constitutional principle of legality to the detriment of the principle of efficiency was evident. Compliance with the legislation to the detriment of the search for new forms of contracting was verified by the TCU, as well as that logistics in the government sector is inserted in an environment of organizational culture with little focus on innovation (TCU, 2017):

- a) excessive attachment to bureaucratic rules, and processes;
- b) administrative discontinuity, with each change of administration;
- c) high degree of resistance to change, of any nature;
- d) setting goals that imply full allocation of existing resources for routine activities;
- e) environment with low tolerance for errors, resulting in fear of staff to exposing themselves to criticism;
- f) difficulty in carrying out experimental actions, and evaluating their benefit.

These barriers were mentioned in the Basic References for the Innovation Program, published by the TCU, and influence innovation in the administrative, and organizational dimensions, which are changes in internal operating structures, and routines (TCU, 2017).

The content of the judgments surveyed points to the attachment to the rules, and bureaucratic process before, during, and after the e-procurement bidding session, due to the risk of fines due to the very personal accountability of the auctioneer, and the competent authority.

For example, in consultation of the TCU website, 611 judgments were issued in the last five years (2015 to 2019) that include, at the same time, the subject "fine", and "auction", encompassing all audited bodies, including universities. Thus, there is a need to implement information management practices, such as those described by Semola (2003), to promote the use of the content of documents issued by the SAIs. One of the characteristics identified in this study was the collegiate administration of federal universities, but with very personal responsibility of the auctioneer, the competent authority, and the dean.

An innovative environment, with greater tolerance for errors in government procurement, requires knowledge of the TCU jurisprudence, which issues more than 24,000 judgments annually. Only a systematic information management process will be able to provide auctioneer, and the competent authorities with the correct information at the different stages of the bidding, resulting in learning (CHOO, 2006).

The following are requirements for players in government procurement: auctioneer, responsible for price survey, and drafting the Terms of Reference, competent authority for awarding the tender, and ratifying the event.

#### 4.6 REQUIREMENTS FOR PLAYERS IN FEDERAL UNIVERSITY PROCUREMENT

In consulting the content of TCU judgments, the main logistical objectives to be incorporated into the Brazilian university management strategies were identified and are shown in Table 3.

The requirements expressed in Table 3 show the prevalence of a Compliance Audit (ISSAI 400) which, according to the International Organization of Supreme Audit Institutions (INTOSAI), is focused on determining whether the activities are, in all material respects, in accordance with the precepts determined by the responsible for public governance (LEITÃO; DANTAS, 2016).

**Table 3** Requirements for government procurement in TCU findings

| ITEM | LOGISTICAL OBJECTIVE  | JUDGMENT TCU   |
|------|---|--|
| 1    | Improve procurement processes that provide support for teaching, research, extension, and management. | 1796/2018 Plenary session                                  |
| 2    | Ensure the existence of public procurement management mechanisms                                      | 2681/2018 Plenary session                                  |
| 3    | Meet internal, and external audit demands on tenders, and contracts.                                  | 6326/2018 2nd Chamber session                              |
| 4    | Create management framework for public service administrative ethics.                                 | 581/2017 Plenary session                                   |
| 5    | Create control, and accountability model for procurement.   | 604/2017 Plenary session                                   |
| 6    | Define purchasing, and inventory policies.  | 5810/2017 2nd Chamber session<br>2588/2018 Plenary session |
| 7    | Develop the skill sets of university employees, and managers.   | 1796/2018 Plenary session                                  |
| 8    | Disseminate the principles of ethics and conduct in procurement.                                      | 581/2017 Plenary session                                   |
| 9    | Develop a contracting governance model.   | 5810/2017 2nd Chamber session                              |
| 10   | Develop Contract Management Plan.   | 6326/2018 2nd Chamber session                              |
| 11   | Develop Risk Management Plan, and Controls in Procurement.  | 1796/2018 Plenary session<br>2681/2018 Plenary session     |
| 12   | Develop Strategic, Tactical, and Operational Management Plan for contracting.                         | 2588/2018 Plenary session                                  |
| 13   | Develop Sustainability Plan, and Sustainable Logistics Plan.  | 1056 2017 Plenary session                                  |
| 14   | Establish accountability model, and follow-up of recommendations of controller agencies.              | 6326/2018 2nd Chamber session                              |
| 15   | Establish a model of accountability of the competent authority.                                       | 367/2017 Plenary session<br>581/2017 Plenary session       |
| 16   | Establish a model of active, and passive transparency of administrative acts.                         | 6326/2018 2nd Chamber session<br>1469/2017 Plenary session |
| 17   | Promote forecasting and planning of annual demand for procurement.                                    | 2593/2017 Plenary session                                  |
| 18   | Promote transparency, accountability, and monitoring of accounting.                                   | 6326/2018 2nd Chamber session<br>1796/2018 Plenary session |
| 19   | Segregate functions in the area of acquisition management.  | 6326/2018 2nd Chamber session<br>367/2017 Plenary session  |
| 20   | Ensure the procedures in the public session of the e-procurement bidding session.                     | 6326/2018 2nd Chamber session<br>2593/2017 Plenary session |

Source: authors (2020).

Regarding the development of skill sets for administration technicians in educational institutions, it was found that the training policy with financial incentives, with the advent of PPCTAE, since 2005, has not always been aligned with the needs of the government tender, and procurement area, as evidenced by the TCU's constant recommendations on complex management activities, such as inadequate price surveys, irregular conduct of auctioneer in

public bidding sessions, in the acceptance of a commercial proposal without due technical compliance to the Reference Term of the tender notice.

The results point to the need to align the professional training of public servants working in federal universities with the needs of the area of government tender, and procurement, such as auctioneers, contract inspectors, and staff responsible for drafting the Terms of Reference, provided for in Federal Decree no. 5,450/2005, in a practical, and not just conceptual format (GONÇALVES et al., 2017).

## **5 FINAL CONSIDERATIONS**

Since the late 1980s, with the enactment of the Magna Carta, Brazilian public procurement aims to implement a model of excellence in government procurement, adapting common practices in private companies acknowledged for their excellence, such as training of human resources in procurement functions (especially the auctioneer), implementation of an annual plan for procurement of consumption materials, and fixed assets, the adoption of an online platform for e-procurement bidding sessions, the improvement of legislation in the area of government procurement.

The Supreme Audit Institutions (SAIs), such as the Brazilian Audit Court (TCU), act in auditing the area of government procurement, logistics, and tenders. The inventory of judgments, available online, constitutes a source of information to outline the best practices of public administrators of excellence, as well as avoiding the failures found in other federal universities. The requirements for government procurement, the best practices for the auctioneers, and the competent authority, as well as the points of interest that should be addressed in the planning of internal controls were clearly highlighted.

This qualitative study, through document content analyses, addressed a complex, and multidisciplinary subject in the areas of law, public administration, and information management that offer tips in competency management in universities, especially for auctioneers. The focus of this study is on information management, seeking aspects of management improvement, only citing the legislation, and jurisprudence of the TCU, without entering the legal field relevant to the tender, and contracts area.

Among the findings are the requirement for the drafting tactical, and operational guidelines, such as: manual of ethical principles, and conduct in procurement, contract governance model, contract management plan, risk management plan in procurement, tactical,

and operational procurement management plan, sustainability plan, and sustainable logistics plan, and annual demand procurement plan.

The lack of these manuals at the time of the audit means that there were still management processes that were not structured, and systematized, were not objective, and had no goals, and objectives defined in the area of government procurement, and tenders. They were existing activities, manifested by the tacit knowledge of federal public servants who had a knowledge, and a *modus operandi*, not always in line with the current TCU jurisprudence.

The tacit knowledge of public servants, when not aligned with the TCU jurisprudence, was liable to accountability when discovered, and evidenced in audits; this represents an area of risk for new university administrators, because it is invisible in the public institution due to the dearth of systematization, and formal structuring.

Audits also evidenced aspects in people management, mainly the segregation of functions in government procurement, justified by the shortage of public servants trained to work in the 69 federal universities as auctioneers, contract inspectors, price surveyors, and other logistics related activities. The recommendation for joint procurement among federal entities was pointed out in an audit as a way to reduce the need to replicate procurement teams for purchases of consumption materials, and fixed assets used in comm across the federal government.

One of the limitations of this research in judgments of the TCU is the focus on weaknesses in public management, which can be held accountable by the competent authority. The public entities of excellence do not appear in the audit recommendations, given their *modus operandi* being considered satisfactory in the previous audit cycle, i.e., their administrative acts are in accordance with the legislation, and jurisprudence of the SAIs.

On the other hand, these weaknesses pointed out in audits reveal points for improvement in university administration, given that other public entities have already adopted these administrative procedures, achieving excellence in government procurement, and tenders.

## REFERENCES

ABREU, R. M. de, MARRA, A. V. Mudança organizacional e as reações dos servidores após a implantação do REUNI. **Revista GUAL**, Florianópolis, v. 12, n. 3, p. 86-105, setembro-dezembro 2019.

ALMEIDA, A. A. M. de, SANO, H. Função compras no setor público: desafios para o alcance da celeridade dos pregões eletrônicos. **Revista de Administração Pública**, v. 52, n. 1, p. 89-106, 2018. Doi: <https://dx.doi.org/10.1590/0034-7612164213>

ANDIFES. Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior. **Painel de cortes em 2019**. Disponível em: <http://www.andifes.org.br/painel-dos-cortes>. Acesso em: 31 maio 2020.

ARANTES, R. B., ABRUCIO, F. L., TEIXEIRA, M. A. C. A imagem dos Tribunais de Contas subnacionais. **Revista do Serviço Público**, v. 56, n. 1, p. 57-83, 2005. Disponível em: <https://bit.ly/2xHyF0s>. Acesso em: 31 maio 2020.

BALLOU, R. H. **Gerenciamento da cadeia de suprimentos: logística empresarial**. 5. ed. Porto Alegre: Bookman, 2006.

BARDIN, L. **Análise de conteúdo**. 3. reimp. São Paulo: Edições 70, 2016.

BAUER, M. W., AARTS, B. A construção do corpus: um princípio para a coleta de dados qualitativos. In: Bauer, M. W.; Gaskell, G. (Orgs.). **Pesquisa qualitativa com texto, imagem e som: um manual prático**. 13. ed. Petrópolis. RJ: Vozes, 2015, p. 39-63.

BELL, F. Connectivism: its place in theory-informed research and innovation in technology enabled learning. **The International Review of Research in Open and Distance Learning**, v. 12, n. 3, p. 98-118, 2011.

BEST, D. P. The future of information management. **Records Management Journal**, v. 20, n. 1, p. 61-71, 2010.

BOWERSOX, D. J. **Gestão logística da cadeia de suprimentos**. Porto Alegre: Bookman, 2006.

BRASIL. Controladoria-Geral da União. **Manual de orientações técnicas da atividade de auditoria interna governamental do Poder Executivo Federal**. Ministério da Transparência e Controladoria-Geral da União. Secretaria do Controle Interno. Brasília, DF: CGU, 2017a.

BRASIL. Ministério do Planejamento, Desenvolvimento e Gestão. **Referencial de Governança e Gestão do Serviço de Serviços Gerais (SISG)**. Brasília: MP, 2017b.

BRASIL. Ministério do Planejamento, Orçamento e Gestão. Secretaria de Logística e Tecnologia da Informação. **Estratégia Geral de Logística da Administração Pública Federal: EGL 2016/17**. Brasília: MP, 2015.

CHOO, C. W. **The knowing organization: how organizations use information to construct meaning, create knowledge and make decisions**. 2. ed. New York: Oxford University Press, 2006.

CHOPRA, S., MEINDL, P. **Gestão da cadeia de suprimentos: estratégia, planejamento e operação**. 6. ed. São Paulo: Pearson Education do Brasil, 2016.

COOPER, D. R., SCHINDLER, P. S. **Métodos de pesquisa em administração**. 10. ed. Porto Alegre: Bookman, 2011.

COSTA, R. E., HOLLNAGEL, H. C., BUENO, R. L. P. Compras governamentais: panorama atual e desafios. **Revista Científica Hermes**, n. 23, p. 51-75, jan./abr. 2019.

CRESWELL, J. W. **Research design: qualitative, quantitative and mixed methods approaches**. 2. Edition. Sage Publications, CA: Thousand Oaks, 2003.

CROTTY, M. **The foundations of social research: meaning and perspective in the research process**. London: Sage, 1998.

DAVENPORT, T. H. **Ecologia da informação: por que só a tecnologia não basta para o sucesso na era da informação**. São Paulo: Futura, 1998.

DE PAULA, A. P. P. **Por uma nova gestão pública: limites e potencialidades da experiência contemporânea**. Rio de Janeiro: Editora FGV, 2005.

DENHARDT, J. V., DENHARDT, R. B. **The new public service: serving, not steering**. New York: ME Sharpe, 2007.

DENHARDT, R. B., CATLAW, T. J. **Teorias da administração pública**. 7. ed. São Paulo: Cengage Learning, 2017.

DETLOR, B. Information management. **International Journal of Information Management**, v. 30, p. 103-108, 2010.

DIAS, L. dos P. P., GOMES, D. G. de, ANGONESE, R., QUINTANA, A. C. Auditoria interna e gestão: estudo de caso em uma universidade federal à luz da teoria institucional. **Revista GUAL**, Florianópolis, v. 13, n. 2, p. 116-139, maio-agosto 2020.

DUARTE, A. L. F., BOENTE, R. M. P., MARINHO, R. B. A., ZOUAIN, D. M. Produção acadêmica sobre 'accountability': categorizações na área de administração pública. **Contabilidade, Gestão e Governança**, v. 21, n. 3, p. 459-475, 2018. Doi: [http://dx.doi.org/10.21714/1984-3925\\_2018v21n3a9](http://dx.doi.org/10.21714/1984-3925_2018v21n3a9)

FLICK, U. **Uma introdução à pesquisa qualitativa**. 2. ed. Porto Alegre: Bookman, 2004.

GOEZ, W. L. C. Competência informacional na sociedade da informação: perspectivas e análise bibliométrica de modelos. **Revista Brasileira de Biblioteconomia e Documentação**, v. 14, n. 1, p. 109-125, 2018.

GONÇALVES, A. de O., SANTOS, R. L. A. dos, BILHIM, J. de A. F., COSTA, T. D. da. Que modelo é esse? As alterações nos processos de capacitação de recursos humanos nos 20 anos do Plano MARE. **Administração Pública e Gestão Social**, v. 9, p. 4, p. 298-309, 2017. Disponível em: <https://periodicos.ufv.br/apgs/article/view/5129>. Acesso em: 31 maio 2020.



ILLERIS, K. (Org.) **Teorias contemporâneas da aprendizagem**. Porto Alegre, RS: Penso, 2013.

INTOSAI. International Organization of Supreme Audit Institutions. **Guidelines for the performance auditing process**: ISSAI 3200/84. Viena, 2016. Disponível em: <https://bit.ly/3cngllg>. Acesso em: 31 maio 2020.

JUSTEN FILHO, M. **Comentários à lei de licitações e contratos administrativos**. 9. ed. São Paulo: Dialética, 2002.

KELLE, U. Análise com auxílio de computador: codificação e indexação. In: Bauer, M. W.; Gaskell, G. (Orgs.). **Pesquisa qualitativa com texto, imagem e som: Um manual prático**. 13. ed. Petrópolis. RJ: Vozes, 2015, p. 393-415.

LARSON, P. D. Public vs. private sector perspectives on supply chain management. **Journal of Public Procurement**, v. 9, n. 2, p. 222-247, 2009.

LEITÃO, J. M., DANTAS, J. A. (2016). Materialidade em auditoria financeira no setor público: a prática internacional e a opinião de especialistas brasileiros. **Contabilidade, Gestão e Governança**, v. 19, n. 1, p. 146-166, 2016. Disponível em: <https://bit.ly/2XQ6lht>. Acesso em: 31 maio 2020.

LIMA, S. L. L. de, GOMES, A. R. V., FERREIRA, R. M., WALTER, S. A. Mídias sociais, uma questão a ser enfrentada: a percepção dos alunos sobre as abordagens metodológicas e os princípios do conectivismo. **Revista GUAL**, Florianópolis, v. 13, n. 1, p. 115-136, janeiro-abril 2020

LOURENÇO, R. P. An analysis of open government portals: a perspective of transparency for accountability. **Government Information Quarterly**, v. 32, n. 3, p. 323-332, 2015. Doi: <https://doi.org/10.1016/j.giq.2015.05.006>

MCCUE, C., PITZER, J. **Fundamentals of leadership and management in public procurement**. Herndon, VA: National Institute of Governmental Purchasing, 2005.

MCTIC. Ministério da Ciência, Tecnologia, Inovações e Comunicações (2020). **Novo Marco Legal da Inovação: Código de Ciência, Tecnologia e Inovação**, 2020. Disponível em: <https://bit.ly/3aH3QX8>. Acesso em: 31 de maio de 2020.

MELO FILHO, L. F. B. **A licitação na Constituição de 1988**. Disponível em: <http://bit.ly/2spOF12>. Acesso em: 31 maio 2020.

MONTEZANO, L., SILVA, N. B. da., MARQUES, F. B., ISIDRO-FILHO, A. Aspectos determinantes da implantação da gestão por competências em institutos federais. **Revista GUAL**, Florianópolis, v. 12, n. 3, p. 21-44, setembro-dezembro 2019.

MULGAN, G., ALBURY, D. **Innovation in the public sector**. London: Cabinet Office Strategy Unit, 2003.

OLIVEIRA, A. C., PINTO, F. R., MENDONÇA, C. M. C. de. Alinhamento estratégico de planejamentos institucionais: estudo em uma universidade federal da Amazônia Setentrional. **Revista GUAL**, Florianópolis, v. 13, n. 2, p. 183-205, maio-agosto 2020.

OPEN GOVERNMENT WORKING GROUP. **Eighth principles of open government data**, 2007. Disponível em: <https://bit.ly/2VvrZvG>. Acesso em: 31 maio 2020.

ROMZEK, B. S., INGRAHAM, P. W. Cross pressures of accountability: initiative, command, and failure in the Ron Brown Plane Crash. **Public Administration Review**, v. 60, n. 3, p. 240-253, 2000. Doi: <http://dx.doi.org/10.1111/0033-3352.00084>

SÊMOLA, M. **Gestão da segurança da informação**: uma visão executiva. Rio de Janeiro: Campus, 2003.

SENGE, P. M. **A quinta disciplina**: arte e prática da organização que aprende. 27. ed. São Paulo: Best Seller, 2011.

SIEMENS, G. **Conectivismo**: uma teoria de aprendizagem para a idade digital, 2018. Disponível em: <http://bit.ly/2F4JBIg>. Acesso em: 31 maio 2020.

SILVA, A. L. I. F., AZEVEDO, M. C., PINOCHET, L. H. C., OLIVEIRA, M. A. A influência da carreira proteana em suas respectivas âncoras na gestão de carreira de servidores públicos. **Contabilidade, Gestão e Governança**, v. 22, n. 1, p. 118-135, 2019. Disponível em: <https://bit.ly/2xFPWHe>. Acesso em: 31 maio 2020.

STN. Secretaria de Tesouro Nacional. **Aspectos fiscais da educação no Brasil**. Disponível em: <http://bit.ly/2Md7QGw>. Acesso em: 31 de maio de 2020.

TCU. Tribunal de Contas da União. **Jurisprudência: Acórdãos** (2020a). Disponível em: <http://www.tcu.gov.br/>. Acesso em: 31 maio 2020.

TCU. Tribunal de Contas da União. **Controle e Fiscalização** (2020b). Disponível em: <https://bit.ly/352VVIU>. Acesso em: 31 maio 2020.

TCU. Tribunal de Contas da União. **Manual de auditoria operacional**. 3. ed. Brasília: TCU, Secretaria de Fiscalização e Avaliação de Programas de Governo (Seprog), 2010.

TCU. Tribunal de Contas da União. **Referencial básico do programa de inovação**. Brasília: TCU, Instituto Serzedello Correa (ISC), Centro de Pesquisa e Inovação (CEPI), 2017. Disponível em: <https://bit.ly/2yNC8us>. Acesso em: 31 maio 2020.

## NOTES

<sup>i</sup> The activities of the auctioneer are provided for in Article 11 of Federal Decree no. 5,450/2005, i.e.: a) coordinate the bidding process, b) receive, examine, and decide on the challenges, and queries to the notice to tender, supported by the sector responsible drafting it, c) carry out the public session on the Internet, d) verify the compliance of the proposal with the requirements established in the convening instrument, e) control the bid stage, f) check, and judge the conditions for qualification, g) receive, examine, and decide the appeals, forwarding to the competent authority when maintaining the decision, h) indicate the winner of the event, i) award the object, when there is no appeal, j) undertake the support team work, and k) forward the duly instructed process to the competent higher authority, and propose the approval. This specific role is not set out in the list of activities of Brazilian federal universities. These are complex activities requiring ongoing training, as well as knowledge of the TCU rulings, and jurisprudence.

<sup>ii</sup> The Comprasnet online system, which is a system of *E-Procurement*, is available on the Federal Government Procurement Portal in <https://www.comprasgovernamentais.gov.br>