

FISCALIZANDO

Journal



Editorial

Dear readers,

The year 2021 has brought us multiple lessons and has taught us to live with the Covid-19 pandemic. Supreme Audit Institutions (SAIs) have developed new skills and have strengthened their most valuable capital: their personnel, as well as their auditing procedures, mainly with new technologies as great allies.



In this scenario, OLACEFS activities have also undergone changes, such as the holding of hybrid meetings that combine face-to-face and virtual meetings. Likewise, the focus on exchanging our knowledge and experiences among the SAIs of the region has never been lost, since we all have much to learn and much to teach.

This issue of the Fiscalizando Magazine, a publication whose objective is to share the experiences and good practices of SAIs, brings us diverse topics such as internal communication, climate change, disaster auditing, human rights, cost auditing, process mining and mega projects.

I would like to thank the authors of the Entities whose articles make up the 27th edition of the Fiscalizando Journal for taking the time to write, research and share such a valuable element today as knowledge. Special thanks also to the heads of their SAIs for encouraging them in the field of research.

Nelson Shack Yalta
President of OLACEFS
Comptroller General of the Republic of Peru

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Internal communication, from local to regional. The journey as a good practice

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Abstract: This research work addresses internal communication and its identification as a tool that has a positive impact on the achievement of institutional strategic plans.

The experience of the communication team of the General Audit Office of the Nation and its subsequent inclusion in the Annual Operating Plan of the Technical Committee on Good Governance Practices shows the process that aimed to systematize and record their practices for the development of a theoretical corpus on internal governmental communication.

The contribution can be understood along the following lines:

- a. Conceptualization of the work of SAI workers themselves.
- b. The need to record good practices for management improvement.
Construction of a state of the art of
- c. internal communication in governmental control organizations.

Keywords: Internal Communication, Collaborative Management, Best Practices, OLACEFS Commissions.

Introduction

The purpose of this document is to present the path, recent progress and next steps of a research under development, carried out within the

framework of the Technical Commission on Good Governance Practices (CTPBG) of OLACEFS since 2019, based on the investigation of the importance of internal communication (IC) as a strategy to strengthen SAIs in the region.

Its precedent is the implementation of the IC Project in one of its associated entities -the General Audit Office of the Nation of Argentina- and its final projection, the development of a bank of good practices in internal communication in the region, which will serve as an anchor to reflect on the various experiences in this area and share the good practices learned.

Next, the local origin of the project and its articulation in the construction of a regional theoretical framework, the research carried out, the current management with its adaptations to the pandemic context and the future will be presented.

The origin

- We're not turning them down, but we're not especially looking for accountants, "he said" We want people with an excellent academic background, and above all smart guys.
- Smart guys?
- They can be mathematicians, musicologists and historians. The key is that they are able to think. And that they have the will to

defend the state. They may earn much less than in the private sector, but they are motivated by the objective of serving the citizens and, in addition, they feel that their work is more interesting than that of a bureaucrat in a private consulting firm. (reflections by Iain Johnston, member of the National Audit Office -Great Britain) published by Martín Granovsky in PAGINA 12¹.

The General Audit Office of the Nation (AGN) was created in 1992, with the enactment of Law 24.156 on Financial Administration and State Control Systems, which in its Title VII on External Control, Chapter I "General Audit Office of the Nation", Articles 116 to 127, establishes the institution and regulates its actions.

In 1994, Argentina underwent a constitutional reform that introduced several amendments, including Article 85, which gives constitutional rank to the function of external control in Argentina in order to promote the consolidation of democracy, progress in republicanism and a strengthening of the division of powers. This institutionalization of external control through the General Audit Office of the Nation establishes that the examination and opinion of the Legislative Power on the performance and general situation of the public administration shall be based on the opinions of the General Audit Office of the Nation.

After thirteen years of operation of the agency, in 2006, the Press and Communication Department was

created², with the primary responsibility of "Understanding the communication management of the General Audit Office of the Nation". The actions of managing and developing internal and external communication tools find their first regulatory order at the institutional level.

In 2012, the AGN approves its Institutional Strategic Plan 2013-2017, where it establishes as a strategic objective "To establish an effective organizational management system in line with the new needs", and as a specific objective "To strengthen the tools and mechanisms for internal and external communication". This strategic plan was a tool designed and drafted by members of the institution; a work of introspection, in which the institution reflected on its mission, was carried out within and by the organization. For its preparation, a diagnosis was implemented that covered different spheres of the institution and included internal and external communication.

Prior to the approval of the PEI 2013-2017, there were several proposals to work on internal communication in the AGN, formulated from the Press and Communication Department (DPyC), given the perception that this was an area where there was a gap and that it would be desirable to provide a solution.

The tools that existed up to that time - e-mails from different areas and bulletin boards - were not used systematically, nor did they address all the issues about which the staff needed or wanted to be informed. Faced with the vacuum,

1 DIARIO PÁGINA 12. Granovsky, Martín. Una corte pensada para el descontrol. retrieved August 25, 2021 at <https://www.pagina12.com.ar/diario/elpais/1-27237-2003-10-24.html> (online)

2 Resolution N° 2/06 - GENERAL AUDIT OFFICE OF THE NATION

information circulated - partial, distorted and limited in scope - by word of mouth, by "radio corridor".

The crux of the first ideas sketched out by the communication team - those embryonic IC projects - emphasized strengthening ties among workers on the basis of an informal and un-systematized diagnosis, which postulated that the biggest problem was the lack of an assessment of what information the staff should have to carry out their tasks and even their career development.

The first attempts to manage internal communication, in the form of isolated actions, were not implemented because they lacked an integral approach that would enable work with other areas directly involved in the objective, such as Human Resources, Personnel, Systems and Standards and Procedures. A consensus-based institutional action was required in order to move towards a diagnosis that would make it possible to identify the real needs of the personnel.

The decision to start working with institutional strategic plans paved the way. With the PEI 2013-2017³ approved, the team formed to work on internal communication was able to have an institutional diagnosis that allowed "to glimpse the way in which an organization knows those internal, external, positive and negative factors, in order to tend to a better management of its resources that leads to the fulfillment of its Mission and the

achievement of its Institutional Vision"⁴ and thus develop the first Internal Communication Project for the AGN.

The premise was to institutionalize internal communication as a vehicle of information that favors work processes and dialogue in the institution. Consolidating a shared vision, guiding and directing the organizational changes proposed in the PEI and promoting listening to employees were the goals set by the team of communication managers.

From local systematization to regional theoretical framework

In 2014, the first IC project was presented at the AGN. It was conceived by articulating the three functions of communication -informative, advisory and integrative- around three products -internal newsletter "Vocero Interno", collaboration in communication plans for certain areas and the generation of a space where the social fabric of the institution converges-.⁵

The origin of the AGN's internal communication project is associated with the existence of the Institutional Strategic Plan; as a founding myth of the project, it was always thought about the impact of communication on the knowledge that government auditors had about the agency's strategic guidelines.

The communication was based on a basic segmentation, centered on the

3 The AGN currently has the PEI 2018-2022 in effect, where the agency expands the institutional framework of the project by incorporating indicators to measure the impact it has on the achievement of the strategic objectives set by the agency.

4 "Institutional Strategic Plan: Institutional Diagnosis Report". Buenos Aires, 2012.

5 Alcibar, Valeria; Andrada, Angélica; Britos, Mónica; Ockier, Ethel: (2016) Internal communication: the case of the General Audit Office of the Nation. Actas de Periodismo y Comunicación, Vol. 2, No. 1, Universidad Nacional de La Plata, La Plata.

the formal structure of the staff: all staff, by function, gender, profession, type of department, age group, place of performance in terms of buildings.

After a year of project management, in 2015, the Technical Commission on Good Governance Practices (CTPBG) incorporated the AGN's internal newsletter, *Vocero Interno*, into the SAI Toolbox for corruption control.

In parallel, in 2016, the INTOSAI Working Group on the Value and Benefit of SAIs developed the SAI Performance Measurement Framework⁶, which incorporates IC as an indicator to measure internal governance and ethics. Under the item "leadership and internal communication" the Framework states that heads and directors are responsible for promoting integrity, and for developing an organizational culture that promotes effectiveness, transparency and accountability. To achieve these objectives, the SAI must have strong leadership and good communication with staff.

The Framework proposes that when evaluating IC, the context, organizational structure and number of personnel should be taken into account. This premise was considered in the definition of IC of the work team, which understood, following Álvarez Teijeiro⁷, that the main objectives of internal governmental communication are that the internal public knows the mission, vision and values of the organization; that it knows its strategic plans and, fundamentally, that this public is

committed to this mission, vision and values and that its work contributes to the achievement of the strategic objectives. The form this definition takes depends on the characteristics of each institution.

Other standards that regulate the actions of SAIs were also taken into account: INTOSAI-P 12 and 20 because they generally set a standard for the general institutional communication of governmental control entities.

INTOSAI-P12 postulates the SAIs' principle of leading by example and proposes that the entities themselves formulate strategies to improve their management and, to this end, their members must be informed about institutional goals and the rules governing professional and technical performance and the working relationship.

INTOSAI-P 20, for its part, postulates the principles of accountability and transparency and states that this challenge is achieved with coherent, standard-based, easily accessible and relevant information.

In relation to the present research and the theoretical framework offered by these two INTOSAI-Ps for the creation of a regional model of the IC, the principles of accountability and transparency should be those that are reproduced within the institutions.

Accountability refers to the legal and reporting framework, organizational

6 INTOSAI Working Group on the Value and Benefit of SAIs (2016) <https://www.olacefs.com/wp-content/uploads/2017/01/03-SAI-PMF-Endorsement-Version-2016-Spanish.pdf>

7 Álvarez Teijeiro, Carlos (2013) "Internal governmental communication. What works?" In Elizalde Luciano et al. (comp) *Comunicación gubernamental 360*. Buenos Aires. La Crujía.

structure, strategy, procedures and actions that help ensure that SAIs monitor and evaluate their own performance and the impact of their audit function; and on the other hand, that the highest authorities and all staff of each SAI are accountable for their actions.

Transparency refers to the SAI's obligation to publish, in a timely, reliable, clear and relevant manner, information on its status, competence, strategy, activity, financial management, actions and performance. In addition, it must report on the results and conclusions of audits, and make information related to the SAI accessible to the public.

Thus, the Institutional Strategic Plan and its diagnosis, the SAI Performance Measurement Framework, INTOSAI-P 12 and 20 were the tools that provided the theoretical and normative framework that gave shape to the project and made it possible to identify the effective role that internal communication should play.

Special mention should be made of two articles of the INTOSAI Code of Ethics, and their adoption by the various SAIs, which propose that staff should be aware of the SAI's policies and procedures on professional behavior, the applicable professional standards, the laws, regulations and conventions of the society in which they reside, and understand how their actions impact on the credibility of the SAI.

Research as a record of internal communication work

In 2019, the CTPBG decided to include in its POA the activity "Strengthening

Internal Communication in the SAIs of OLACEFS" within Strategy 4.2 Promote SAI review strategy. The project management team appealed, on the one hand, to investigate the evolution of internal communication in other SAIs in the region and, on the other hand, to make a systematized contribution of the realities in this area.

To this end, it prepared its first document "Internal Communication: a strategy to consolidate SAIs". This work sought to investigate the modality in which internal communication is manifested in the different organizations by virtue of the type of governmental body, its role in society, its internal structure and its dynamics for information management, among other issues. In this sense, the institutional websites of the 22 entities in the region were surveyed, identifying the following variables: existence of strategic plans, what was the vision, organization chart (to locate the place of internal communication in the structure), institutional communication and internal communication.

This survey was validated by 19 SAIs, which understood communication as a central tool for good institutional management.

Some data from the first document show that, in 2019, 100% of the SAIs had a PEI; 94% had communication areas in their organizational chart in direct relation to the highest institutional hierarchy (regardless of whether they were collegiate bodies); the IC functions stated by the SAIs in their PEIs were designed and coordinated by the institutional communication management/areas/departments; 35%

considered that institutional communication includes internal and external communication. In relation to the audiences identified in the visions, society and citizens were the most frequently mentioned; only in two cases were identity attributes related to personnel -integrity and professionalism- mentioned; the other audiences identified were State entities, Civil Society Organizations (CSOs), the international community and the legislative branch.

A first partial conclusion from this information: SAI organization charts tend to have vertical structures in which communication areas are positioned as direct tactical allies for the fulfillment of strategic objectives.

It is worth clarifying that in the websites the detailed communication is the external one, since it is conceived for this type of public, although the document appeals to visualize the government auditor as the first ambassador of the institution in the production of contents and in the interaction with external stakeholders.

As a general conclusion of this first document, it was possible to confirm the need for communication products to be aligned with the organization's identity and for the government auditor to be seen as the institution's first ambassador.

A comprehensive view of communication imposed the need to work on an exhaustive segmentation of audiences that allows for clear guidelines, with key messages about what and to whom to communicate.

Here appears the need to focus on the role of the entities' personnel in creating, knowing and owning the institutional goals so that this involvement in control policies has an impact on society. Internal communication plays a key role in this.

The continuity of this work was the registration of good practices implemented by SAIs. Therefore, it was proposed for 2020 to work on two lines: an audiovisual bank of good practices in internal communication and a guide for segmentation of internal audiences to focus on a communication management tool for SAIs.

But in 2020, COVID-19 transformed the world and forced the adaptation of the plans of this project. Thus, the work was restructured along two lines: the development of an Internal Audience Segmentation Guide and an Internal Communication Survey in times of pandemic crisis.

The survey was structured to analyze the institutional context; SAIs may be at very different starting points for determining actions. It is important to know how the crisis changed the work, space, tasks, etc., and to what extent this affected the organization's mission. These modifications may be the result of external factors (e.g., regulations, force majeure) or internal factors (e.g., decisions). To analyze the organizational level, the following variables were taken into account: whether there was a diagnosis and a plan related to crisis situations, formats, contents, media and crisis spokespersons.

Regarding the most significant changes in internal communication, the following were noted: the transition to digitalization, the strengthening of e-mail, the use of social networks for internal communication, greater focus on the needs of personnel (especially in relation to information on teleworking indications), the feeling of greater transparency in information, strengthening and directing Intranet content, and carrying out diagnostics.

For its part, the Guide is a tool that brings together academic and regional theoretical concepts to give continuity to the models instituted for external audiences and thus optimize the paths that in terms of knowledge are being adopted in the region. The aim was to take into account the risks of not segmenting, to avoid falling into generalist communications projects, and to identify groupings by areas of interest. Likewise, the idea was emphasized that neither the communication strategies in general nor those developed for the internal public in particular are formulas, recipes or protocols that, with their mere application and reiteration, guarantee that the objectives set by the institutional communication management will be met: they require permanent evaluation and reformulation.

Working collaboratively

In 2021, the region's communication managers were invited to a webinar to build together a useful tool and share good practices that were presented, in the form of an athenaeum, among peers. Miriam Insausti, CTPBG technical

liaison, pointed out that "the most important thing about this is to get to know each other and form this group of communicators. To begin to think, among all of us, of actions that will enable us to position internal communication as a fundamental management tool for our institutions."

In this experience -which took place in two meetings during the month of July- the documents prepared within the framework of the commission were presented, focusing on the segmentation of internal audiences, a space was created to socialize experiences and doubts, and it was agreed to subsequently send the Guide with the information gathered in order to continue working collaboratively, with virtual tools that favor joint writing and based on the reality of each SAI.

The President of the Commission, Jesús Rodríguez, highlighted the importance of institutional communication for the CTPBG and the work carried out with external stakeholders, but he also focused on the internal public "there is a need to improve communication within the organizations as well as to share good practices and identify positive experiences and learn from the experiences of others, especially those involved in the Press Areas of the SAIs of the region". On the other hand, Danila Terragno, Head of Press and Communication of the AGN highlighted the characteristics of these meetings "... it is not only an initiative that comes from the bottom up in Argentina, but the same is being proposed at group level, that is, the idea is that the people who are in the day to day with all the issues of Internal Communication or

who want to develop Internal Communication and have not yet developed them within their SAIs, are the ones who participate in this process and are the ones who then generate the material to share and to disseminate".

The sharing of experiences favors not only the internalization of communication tools but also the assimilation of this regional experience as one's own by sharing good practices. As an example, the experience on how the use of WhatsApp was implemented in its organization, shared by the Peruvian SAI, allowed other SAIs to apply it.

Conclusions

Strategic plans are a trend at regional level, 100% of OLACEFS SAIs have them, and Internal Communication is beginning to be inserted in the agenda of the entities, with different levels of conceptualization and institutionalization.

The importance of managing on the basis of an institutionalized project and with a diagnosis to start from helps institutional communication managers to carry out methodical analyses on a starting point to which they can always return to adjust deviations and gaps in the project. The ability to adapt to required and contextual changes also invites the realization of a diagnosis of the organizational culture that fully nourishes internal communication.

The continuity of the regional practices and their paths in matters that have an impact on internal communication is also a way of thinking collaboratively in the region: the categories and

classifications for the segmentation of audiences in relation to external stakeholders are already a fact in the region and a good starting point for thinking about internal audiences.

Reflecting with other people whose organizational cultures may be diverse but who share common problems regarding internal communication, gives an added value to institutions that should be seen as models that have an impact on citizens and also an invitation to government auditors in the region to look at ourselves regionally.

Time for reflection on one's own work is sometimes short, scarce and even convulsed by the critical moments that institutions may be going through - the pandemic context exposed it - but also necessary if the implementation of the strategic objectives of audit institutions is sought and also a way to build knowledge. Organizing a bank of good practices in a collaborative manner is a good resource.

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MAIN ASPECTS TO BE TAKEN INTO ACCOUNT WHEN REVIEWING THE COST SHEET OF A PRODUCTION PROCESS

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Abstract: In the journals Audit and Control No. 37 and 40 of the years 2019 and 2020 respectively, two articles were published in which the fundamental aspects to be taken into account for the analysis of the cost in the Cuban economic activity and the practical indications for the review of the productive process in a control action are explained.

Criteria are summarized on the cost as a determinant indicator in the degree of efficiency of the enterprise and management tool for decision making, with a view to the sustainable development of the economy, as well as the formation scheme of cost indicators for production control, both in a service-producing enterprise and a goods-producing one; since an adequate analysis of the processes, allows identifying outdated or oversized consumption standards.

Keywords: Audit, cost sheet, pricing, economics, growth.

Develop

To incorporate more elements of what has been published to date, the article proposed on this occasion focuses on answering the following question: What aspects cannot be overlooked by an auditor when reviewing a cost sheet?

To arrive at the answer, an investigation must first be carried out on the price of the product to be marketed.

It is important to determine if there is a Price Committee, composed of the different directors of the key areas, and chaired by the general director; because it represents an effective method for the organization and control of the work done, and the conformation of the decentralized wholesale price certification file for each marketed product, established in Resolution 256/2020 of the MFP, to verify the presentation of the different prices of the assortment, according to the characteristics of each producing unit; as well as the predetermined file as a basis for applying the growth index to the average of the product class, which is defined with the certification of the maximum company price that marks the highest weight of physical sales; identifying the invoices that support it.

Review that the superiority of the retail price over the wholesale price is complied with, and if not, the causes that originate this adverse situation. Understanding as a starting point the analysis of the growth rate established for the wholesale price of the product to be commercialized and of the raw materials and fundamental materials involved in the production process. Following this, and as a consequence of the results, analyze the cost sheet.

If we start from the price of a product to its conception basis, the file must be analyzed to determine the price for the predetermined cost items, which is subdivided into two large groups:

- Raw Materials and Materials, and
- Processing Costs

Raw Materials and Materials include the basic raw materials and energy carriers used, while Processing Expenses include other direct expenses, labor and indirect production expenses, general and administrative expenses, and distribution and sales expenses.

In order to be able to analyze the file, it is convenient to break down the objective from the general to the specific. Mastering the process in question will allow us to make an accurate judgment, with a minimum risk of error. Therefore, we are in the presence of an investigation that cannot be separated from the methodology to be followed. In our case, as auditors we rely on the EQS. By identifying our competence, outlining a work strategy, establishing the risks and their probability of occurrence, we will be in a better position to adapt any program or generalized procedure on the subject, because every time we face a challenge like this, we will realize that the situations encountered are different, although they have similar characteristics.

What are those aspects that we cannot ignore?

It is necessary to define whether indirect costs are higher than direct costs, or what percentage the former

represent of the latter, in order to establish whether there is balance in the process. This can be observed from the file prepared to determine the price of the product or service.

Another aspect to be taken into account is whether the expenses reflected in the record are stated in the same unit of measurement in which the resulting production is marketed. For example, a product can be produced and marketed in physical units (u), and be controlled as finished production in m², because a unit does not represent a whole number of square meters.

Therefore, the auditor, before starting to analyze your file, should make sure that it has been calculated in accordance with the unit of measurement established for the marketing of the product and its equivalent in units of production. (e.g. One physical unit of product X = 1.98 m²). Then the card should reflect how much it costs to produce 1 m² which multiplied by 1.98 m² will give how much it costs to produce a physical unit of product X, and with this the price card should reflect the price of product X which is how it is sold in the market (in units).

Returning to the breakdown of expenses, once the percentage structure between direct and indirect expenses has been defined, the causes and conditions of their composition are established and to what extent they can be reduced in order to gain in efficiency. At this point it is essential to have as a reference the total coefficient established in the entity for indirect expenses.

These include: depreciation, other expenses for maintenance and repairs, consumption of energy carriers, clothing and footwear for indirect workers and food. There are expenses that can be reduced, such as fuel and lubricants and electric energy, as well as maintenance and repair expenses. Adequate planning has an impact on this, and the auditor should use this way to establish comparisons. (Trend analysis).

With respect to the labor force, the breakdown of the salary expenses of the production and service workers must be analyzed. This pre-designed model establishes the occupational category, the scale group, the number of workers, their time standard, which multiplied by the established wage rate gives the amount of basic salary, which is incorporated into the file as a salary expense, together with vacations, social security contributions, labor force tax, among other defined indicators.

On this aspect it is advisable that the auditor approaches the human capital specialist, to know how the time standards for direct workers were established. That is, on what historical basis was used to determine the actual rate in the use of the working day. The auditor has to verify the traceability of this time standard.

Recall that any indicator must be verified on the basis of its calculation. Regarding the recently updated scale group, it is easy to identify its veracity, however, both the wage rate and the time standard must be verified by the auditor, taking into account the

procedures established in the human capital department of each entity.

Again, the unit of measurement of the product is involved, because in general, the direct production worker identifies his salary according to the quantities in physical units he produced and this is decisive to issue an accurate criterion on the time standard, which must be in correspondence with this reality, as well as the incidence of technological obsolescence in the performance of the operator, due to unplanned industrial stoppages, whether prolonged or intermittent, especially if the production process is continuous.

If you had the opportunity to study the articles that precede this one, you will notice that one of the most important aspects to analyze the cost sheets of a product lies in the consumption standard of raw materials and fundamental materials.

To do this, first of all, the auditor must review the breakdown of the fundamental inputs in production. It is important at this point to be clear about the composition of the product by raw material used, which can be substituted or if they are imported; what is its replenishment cycle and how the entity ensures compliance with this; if there are internal or external factors that affect the failure to obtain raw materials in a timely manner and, if because of this, it has been necessary to alter the composition of the product to make a production with acceptable quality parameters, although not optimal.

If this has occurred, we will be in the presence of a predetermined cost sheet

for exceptional cases and an estimated cost sheet, for when 100 percent of the composition of the product is obtained in terms of the required raw material; which is a practice of the activity, based on the predetermined and estimated costs and their planning, which are exposed in the General Cost Guidelines, approved by the Joint Resolution: JUCEPLAN, CEF, CEP and CEE, of 18/02/89, which was modified by Resolution No. 25, Ministry of Finance and Prices, the Ministry of Finance and Prices, the Ministry of Finance and Prices. 25, Ministry of Finance and Prices, on 06/23/1997, and updated by Resolution 935/2018 MFP Specific Accounting Standard No. 12 "Management Accounting" (NEC No. 12).

For example, coffee: Cuba produces coffee powder 100 percent coffee (robusta, arabica) and produces coffee powder 70 percent coffee and 30 percent pea, however, taking into account the characteristics of the fundamental raw material used (coffee), the composition in the finished product can be defined in different percentages, although maintaining a similar result:

- A softer coffee: arabica raw material;
- A stronger coffee: robusta;
- A coffee obtained by mixing different materials according to the quality: whole bean picked from the bush; picked from the ground with particles, that is to say the well known husk, or raw material imported from different countries.

It is therefore important that the production specialist certifies the

composition of the product by raw material, in order to establish its impact on the quality of the final product and its percentage exposure in the file. This will make it possible to delimit responsibilities in the process. Now, each cost sheet has a breakdown of the fundamental inputs. These can be separated into three groups for better analysis. For example, for the production of fiber cement tiles:

First group: fundamental inputs, i.e. pure raw materials, in which asbestos fiber types U-85 and U-100 are related, which is the main raw material in the composition of the product. In addition, there are the ironworks, gray cement, cellulose, among others, as well as the cost of producing the wooden parles with which the shingle is transported and the imported inputs for the maintenance of the industry. Also included are water, fuel oil and electricity.

Second group: Transportation costs of the imported raw material from the port to the sandy area and from there to the UEBs in each producing province, and the costs of transportation services for fuel oil and cement.

Third group: recoverable residues if they exist in the process.

As can be seen, although the cost sheet is prepared in the economic area, in order to prepare it it is necessary to interrelate several key areas of the entity (human capital, technical area, quality, production, energy and maintenance) because it responds to the summary of a process that will

contribute to a common benefit, which is income. All these areas represent different sources of information for the auditor. (NCA: evidence gathering).

Each time the analysis of a cost sheet is performed, totally new situations may arise because it depends on the production process reviewed, the existing economic scenario and the response to that scenario. Therefore, an exhaustive review of the inputs exposed in the card must be carried out and answers to the questions that arise from this review must be requested. Following the example of the roof tile:

Why was the cost of producing the wood *parle* incorporated in the key inputs? Because the entity is in a position to produce its *parle*, since it can acquire the wood and it is cheaper than buying them. This is an alternative solution to reduce the costs of the process. So if the entity had not identified it, it could have been a suggestion of the auditor.

What does it mean that the inputs for maintenance have been incorporated? It is expected to be able to import the inputs to perform maintenance from the entity's own workshop and not pay for the maintenance service to third parties that makes the card more expensive, which is considered as other direct costs, within the processing costs. At this point the auditor should verify if it was really possible to import, otherwise it is a factor that is distorting the record.

Another analysis to be made is the structure of the total according to the three groups delimited. The third should be practically imperceptible but not

negligible, because it could represent a warning in the production process, in terms of the impact of technological wear.

The second group should be lower than the first, because it responds only to transportation costs and therefore its participation in the composition of the product is lower than that of the first group where all the raw materials used in the process are included. If this is not the case, it will be necessary to identify the causes and conditions for the reversal of the pyramid of the process within the direct production costs. With this approach the auditor should develop his analysis.

So far only the time standard to obtain the wage expense for each unit produced has been mentioned, however, nothing has been mentioned regarding the standards of consumption of key inputs and prices defined in each case. On this subject it is important to point out the following:

In order to be able to issue a criterion, it is first recommended to request the consumption standards established and approved by the highest representative of the entity, which in turn must be supported by a certification issued by the entity empowered to do so, which will make it possible to be certain that an analysis is being performed on a reliable basis.

The technological obsolescence of our industries is a determining factor in the non-compliance of production plans due to stoppages, so maintenance of technological equipment is becoming

more and more frequent. This problem affects consumption standards. It is impossible for technological equipment that is more than ten or twenty years old to maintain the manufacturer's rates. If the cost sheet reflects these invariable standards, then it is evidently not showing the reality of the process, which leads to the concealment of the deviation or inefficiencies of the same.

Therefore, it is advisable to make comparisons with cards used in previous periods to establish a trend analysis of standards and prices. During the review, it is possible to compare the U/M reflected by each card for the same raw material. This does not mean that it cannot be modified, but the standard must correspond to the change made. If a unit of finished product requires 1 ton of cement, the card may reflect 1000 kg or approximately 2200 lb, which is the same as saying 1 ton and the price remains the same, which is appropriate to the U/M. Example:

The tab prepared in period 1 reflects that the finished product required 0.0100 t of cement with a price of 1650.00 pesos, therefore, the cost of one m² of the finished product is 16.50 pesos.

The sheet elaborated in period 2 reflects that the finished product required 9.50 KG of cement with a price of 1.65 pesos, therefore, the cost of one m² of the finished product is 15.68 pesos.

As can be seen, the price did not change, but was adapted to the form of expression of the consumption standard in the cost sheet, according to the unit of measurement used. However, the cost

of one m² of finished product decreases by 0.82 pesos (15.68 pesos - 16.50 pesos). Why? How many kg represent 0.0100 t of cement? Was the consumption norm of period 1 maintained? Was there efficiency in the second period in terms of resource savings? Did these savings not affect the quality of the final product? What are the quality parameters established for this product, do they have updated quality certification? What would happen if it were the other way around, that is, the second period were the first? Would there be efficiency? These are the questions that the auditor must ask himself to identify the efficiency of the production process and its impact on costs. Let us remember the effect of these costs on the entity's results (profits).

An economist lives these moments constantly and performs this type of analysis to make decisions, because he prepares monthly the actual cost sheet to see the degree of efficiency of its production process and the impact on its profits. While the auditor's role is to evaluate the effectiveness of such analyses and the decisions taken. This is why he relies on trend analysis.

Regarding the price of raw materials and fundamental materials, let us remember that the raw material involved in a production process, was considered as a finished product of another. Therefore, it underwent similar analyses for the determination of its price, which could have been defined in a centralized or decentralized manner.

This means that in the cost sheet in which that product is presented as a raw

material, its price may or may not have limits for negotiation with suppliers. It is therefore essential for the auditor to delimit those raw materials whose prices cannot be negotiated, and in which legislation they are established in order to evaluate the updating of the file. Moreover, in these cases, a better result is obtained when resources are used more efficiently, and this is directly affected by the consumption rule defined.

When the prices of raw materials and services were negotiated with suppliers, the auditor should inquire how the contracting process was carried out in establishing a fair price for both parties.

It is worth remembering that the price shown in a cost sheet is not necessarily the price agreed upon in the contract, therefore, the auditor must be prepared to recalculate the basis of calculation, because otherwise he will not be able to conclude whether the price reflected in the sheet is correct, according to the established unit of measure of production.

For example, transportation costs are calculated considering the established rate, as shown in the following case:

1. To determine the incidence of the transportation of the imported raw material from the port-Havana to Arenal in the cost per unit produced, the maximum rate of 6876.60 pesos, established in Resolution 317/20 for containers of 20 tons and rate of 67 km per hour, was taken into account.

This type of container assimilates up to 22.5 tons of the raw material in question, so each ton costs 305.62 pesos to transport, which means that each m² of finished product costs 16.25 pesos for transportation, which is equivalent to 32.18 pesos per unit produced.

2. To determine the incidence of the transportation of the imported raw material from Havana to Santiago de Cuba, in the cost per unit produced, the maximum rate of 30 pesos per km traveled (960 km), established in Resolution 172/2020, was taken into account.

Sixteen tons can be transported in each shipment, so that each ton costs 1800.00 pesos, meaning that each m² of finished product is 135.33 pesos for transportation, which is equivalent to 267.95 pesos per unit produced.

It should be clarified that the consumption rate of the imported raw material is 1.20 t mm². This data as the rest mentioned had to be verified by the auditor, because otherwise the following recalculation would not have been effective:

- $$\begin{aligned} \$ 6\,876.60 / 22.5t &= \$ 305.62 \text{ t} / 18.8 \text{ m}^2 \\ &= \mathbf{\$ 16.25 \text{ m}^2} \text{ (price of the transportation of imported raw material Port Havana-Arenal, which reflects the cost sheet of UEB Santiago de Cuba)} \\ 22.5 \text{ t} / 1.20 \text{ t m}^2 &= 18.8 \text{ m}^2 \end{aligned}$$

- $960 \text{ Km} * \text{rate } \$ 30.00 = \$ 28800.00 / 16 \text{ t} = \$ 1800.00 \text{ t} / 13.3 \text{ m}^2$
 $= \$135.33 \text{ m}^2$ (price of transportation of imported raw material Havana-Santiago, as reflected in the cost sheet of UEB Santiago de Cuba)
 $16 \text{ t} / 1.20 \text{ tm}^2 = 13.3 \text{ m}^2$

In Summary

1. Determine whether there is a Pricing Committee, composed of the different directors of the key areas, and chaired by the general manager.
2. The conformation of the decentralized wholesale and retail prices and rates certification file, to verify the presentation of the different prices of the assortment, according to the characteristics of each producing unit; as well as the predetermined file as a basis for applying the growth index to the average of the product class, which is defined with the certification of the maximum company price that marks the highest weight of physical sales; identifying the invoices that support it.
3. If there is a superiority of the wholesale price over the retail price, establish the causes that originate this adverse situation.
4. Identify and analyze the growth rate established for the wholesale price of the product to be commercialized and of the raw materials and

fundamental materials involved in the production process. Its incidence in the price of the product.

5. Verify that different modeling of the cost sheet has been carried out to establish comparisons between the possible scenarios before making a conclusive decision, carry out negotiations with suppliers, decide on reductions in indirect costs, identify vulnerabilities and flaws in the production process. With this information the auditor will be able to start the analysis of the modeled cost sheets and the actual one finally established.

For the review of a cost sheet we cannot ignore:

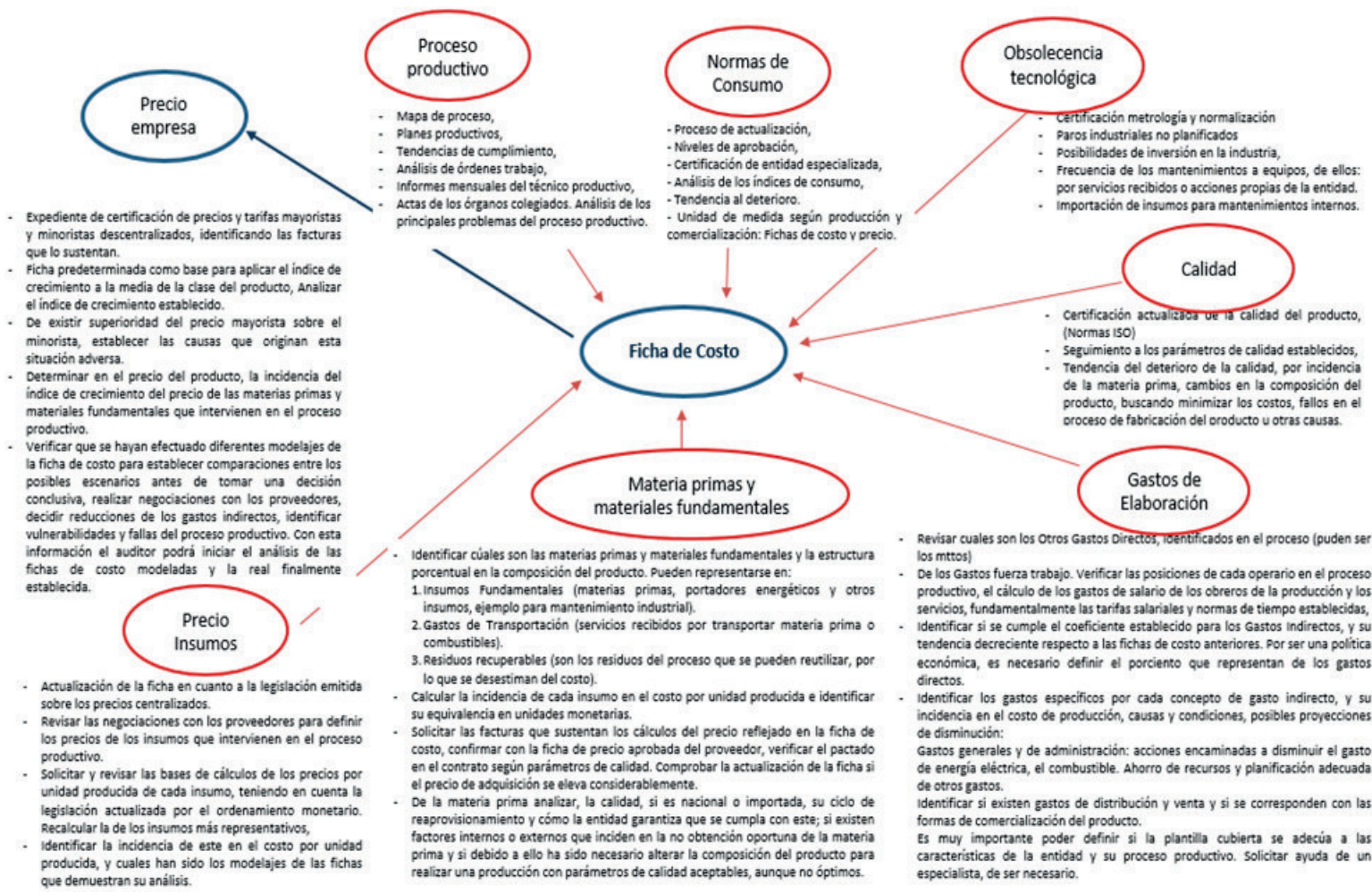
6. Research on the productive process to which the analyzed card corresponds, what are the inputs involved in the manufacture of the product. In what unit of measurement the card is expressed. How the finished product is controlled, registered and marketed.
7. The file should be analyzed to determine the price for the predetermined expense items, which is subdivided into two large groups: Raw Materials and Materials, and Processing Expenses.
8. Define whether indirect costs are higher than direct costs, or what percentage the former represent of the latter, in order to establish if there is a balance in the process. Verifying if they are exposed according to the established coefficient.

9. With respect to the labor force, the breakdown of the wage costs of production and service workers should be analyzed. Find out how the time standards for direct workers were established. That is, on what historical basis were they based to determine the actual rate of utilization of the working day. The auditor has to verify the traceability of this standard.
10. Determine the incidence of technological obsolescence in the operator's performance, due to unplanned industrial stoppages, whether prolonged or intermittent.
11. To review the disaggregation of the fundamental inputs in production. Be clear about the composition of the product by raw material used, which ones can be substituted or if they are imported; what is their replenishment cycle and how the entity ensures that this is met; if there are internal or external factors that affect the non-obtaining of raw materials.
12. In the disaggregation of the fundamental inputs, it is necessary to establish the percentage structure to know if there is disproportionality with respect to the composition of the final product.
13. The consumption standards established and approved by the highest representative of the entity must be requested, which in turn must be supported by a certification issued by the entity empowered to do so, which will make it possible to be certain that an analysis is being made on a reliable basis.
14. Delimit the impact of technological obsolescence in the non-compliance of production plans due to stoppages. Verify the frequency of maintenance of technological equipment and if there are any limitations to perform it.
15. It is recommended to make comparisons with files used in previous periods to establish a trend analysis of standards, causes and conditions.
16. Identify the quality parameters, if they have updated certification. Verify the sequence of the analyses carried out by the specialists, and if they have been taken into account for decision making.
17. Be able to calculate the incidence of each input in the cost per unit produced, and identify its equivalence in monetary units.
18. Regarding prices and their treatment for analysis in a cost sheet. Request the invoices that cover them, confirm with the supplier's approved price sheet, and in the case of imported raw materials verify the contractually agreed price, according to quality parameters.
19. Delimit those domestic raw materials and services whose prices were not negotiated. Verify their establishment by legislation, in order to evaluate the updating of the file and establish criteria on the efficiency in saving resources. In the case of those whose prices were negotiated with suppliers

investigate how the contracting process was carried out in order to establish a fair price for both parties.

Recommendation

Consider the research as a basis for the development of an audit program on the analysis of production process cost sheets.



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AUDITING OF DONATIONS AND FINANCIAL AND RISK TRANSFER INSTRUMENTS FOR NATURAL DISASTER RELIEF IN MEXICO

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Abstract: The audit of donations and financial and risk transfer instruments for natural disasters showed that the Mexican State lacked a clear strategy to face contingencies derived from natural disasters. Although we can accept that it is not possible to prevent and therefore generate strategies to know when and to what extent society and its productive infrastructure may be affected, it is also true that our country, due to its geographical location, is constantly exposed to different phenomena that may be potentially devastating, and therefore it would be necessary to have effective and timely strategies to deal with such situations.

This article explains how, after the earthquakes that occurred in the country in 2017, the Superior Audit Office of the Federation decided to create a cycle of audits that sought to know the degree of preparedness of the State to mitigate the effects of natural phenomena, such as earthquakes, floods, droughts, etc. In this regard, the results showed that the country is not prepared, that its financial instruments are opaque, that there are no clear rules for accessing resources and to prevent them from being used for purposes

other than containing the tragedy resulting from natural disasters.

keywords: Disasters, donation, natural phenomena, financial and risk transfer instruments, earthquakes.

By way of introduction

Due to its geographical location, Mexico frequently faces various natural phenomena, such as hurricanes, earthquakes, rains, droughts and fires, whose intensity and duration can cause disasters¹ / that represent a danger to human life, the productive activity of the regions and social organization.^{2 3}

The month of September 2017, happened the most recent event of great magnitude, given that on the 7th occurred an earthquake of magnitude 8.2 degrees on the Richter scale that caused damage to homes and public infrastructure in the states of Oaxaca,

- 1 A disaster is a natural or man-made phenomenon, constituted as a threat to a community that causes serious human, infrastructure (such as schools, hospitals, housing and public property), economic and environmental damage and losses (such as damage to natural sources of life), which exceeds the capacity for response and recovery.
- 2 In the period from 2000 to 2018, disruptive natural phenomena in Mexico caused, on an annual average, 190 deaths and a cost of 2,357.0 million dollars, mainly affecting the vulnerable population, since 48.8% of the municipalities declared in disaster presented high marginalization indexes. Ministry of Security and Citizen Protection, Disasters in Mexico: social and economic impact.
- 3 89.9 million people continue to be vulnerable to new risks and related losses that natural hazards can cause. Secretaría de Seguridad y Protección Ciudadana, Los Desastres en México: impacto social y económico.

Chiapas and Veracruz; 12 days later, on the 19th another earthquake of magnitude 7. 1 Richter that affected homes

These events demonstrated the importance of having financial and risk transfer instruments to prevent or react to the occurrence of natural disasters: Natural Disaster Prevention Fund (FOPREDEN), Natural Disaster Fund (FONDEN), Bono and Catastrophic Insurance. Likewise, donations derived from voluntary contributions from national and international individuals and companies were essential and complementary.

Effects of the earthquakes of September 7 and 19, 2019

In order to know the effects of the earthquake of September 7, 2017, only for the housing sector, the Mexican Government (DOF, 2017a)⁴ commissioned the Ministry of Agrarian, Territorial and Urban Development (SEDATU) (DOF, 2017b)⁵ to conduct a census that will determine the balance of damages caused by the earthquake, to identify, immediately, the damaged homes, so that "no instance other than it

had the authorization to handle preliminary figures around the work carried out by the brigades." (SEDATU, 2017). After the earthquake of September 19, SEDATU complemented the information gathering strategy with homes located in the states of Mexico City, State of Mexico, Guerrero, Morelos, Puebla, Tlaxcala and, again, Chiapas and Oaxaca, which had been damaged.

However, the strategy did not have the expected results because SEDATU did not have the necessary operational capacity to deal with the emergency in terms of information gathering, since the magnitude of the damages overwhelmed it. This caused the Mexican Government to ignore the official balance of damages caused by the earthquakes, as it did not integrate a census and a sufficient and reliable census to program and prioritize the support destined to the reconstruction and rehabilitation of the homes of the population affected by the earthquakes that occurred on September 7 and 19, 2017 (ASF, 2018a)⁶.

The above, led to a question in a timely manner what were the activities to respond to the emergency and for the

4 Agreement by which various actions are instructed to the Dependencies and Entities of the Federal Public Administration and to the productive companies of the State, to attend the areas affected by the earthquake that occurred on September 7, 2017, Official Gazette of the Federation, September 12 of 2017.

5 According to the Organizational Law of the Federal Public Administration, the Ministry of Agrarian, Territorial and Urban Development is responsible for developing and conducting the country's housing, land management, agrarian and urban development policies.

6 SEDATU did not collect information in 343 municipalities with natural disaster and extraordinary emergency declarations, 47.6% of the 720 municipalities with declarations, and in the municipalities surveyed it obtained information on 3.7% of the dwellings (172,026 of the 4,654,095 existing dwellings) and 4.2% of the population (742,182 of the 17,817,859 inhabitants); it carried out coordination in 100 municipalities, 26.5% of the 377 municipalities surveyed; it showed that it validated 75,945 affected dwellings, of which 26,963 showed recognized structural damage, without this type of damage corresponding to the damage defined in the regulations. 5% of the 377 municipalities surveyed; demonstrated that it validated 75,945 affected homes, of which 26,963 presented damages recognized as structural, without this type of damage corresponding to those defined in the regulations, in addition to the fact that the 75,945 homes do not coincide with the 172,026 affected homes that SEDATU integrated as a definitive diagnosis of damages and that it claimed to have delivered to BANSEFI; its databases called "census and census list" presented fields with duplicated data that were not clarified, and for the 172,026 homes reported as affected, it programmed 73.9% of the support (127,094), without demonstrating the prioritization of support.

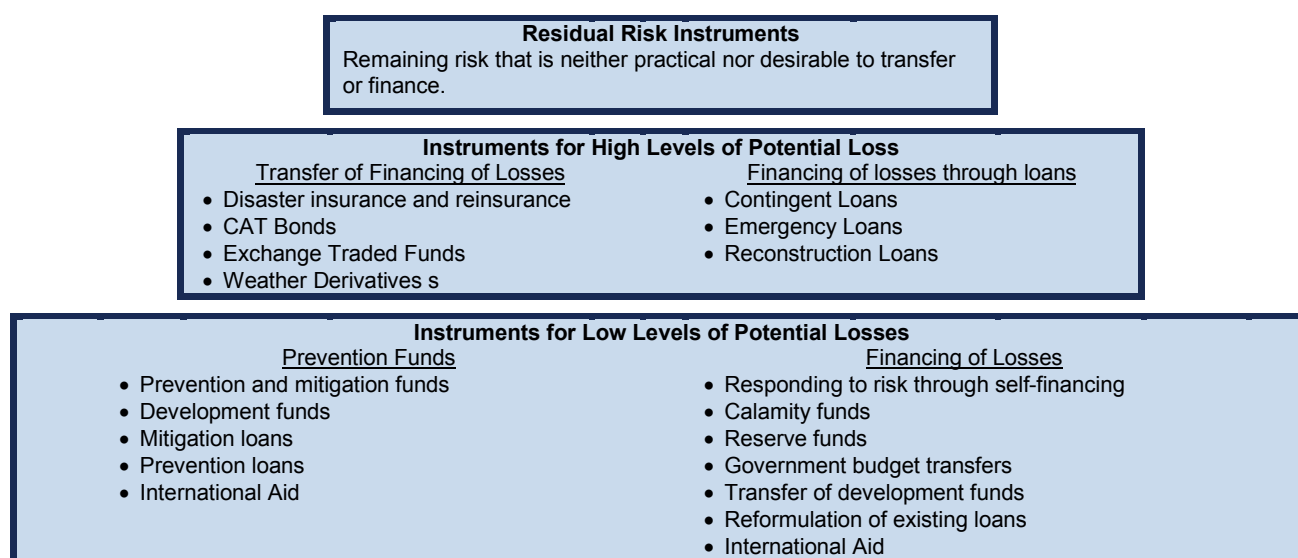
reconstruction derived from the earthquakes? in a simple way no one could know it, however this question was of interest to the Superior Audit Office of the Federation (ASF) who decided to implement a cycle of audits related to donations and financial instruments and risk transfer that were used in the attention of the effects generated by the

aforementioned earthquakes.

Dimensions of financial and risk transfer instruments

The Risk Management and Transfer Instruments, which are used at the international level, are presented in the following scheme:

SCHEME NO. 1



Source: Stuart Miller, Keipi Kari, (2006)

At the national level, according to the General Law of Civil Protection, the Mexican State must promote the incorporation of Comprehensive Risk Management (GIR), (DOF, 2012)⁷ to establish strategies and policies that prevent the construction of future risks and the implementation of intervention actions, in order to reduce existing risks,

for which it is necessary to allocate resources for the optimal functioning and operation of the Financial Instruments of Risk Management, namely, to address the contingency arising from the 2017 earthquakes, Mexico had four financial instruments for risk management and transfer: Natural Disaster Prevention Fund (FOPREDEN),⁸ Natural Disaster

7 Integrated Risk Management (IRM) is defined as the set of actions aimed at the identification, analysis, evaluation, control and reduction of risks, considering them for their multifactorial origin and in a permanent process of construction that involves the three levels of government, as well as the sectors of society, which facilitates the realization of actions aimed at the creation and implementation of public policies, strategies and procedures integrated to the achievement of sustainable development guidelines that combat the structural causes of disasters and strengthen the resilience or resistance capacities of society.

8 Its purpose was to ensure financial availability after the occurrence of a natural disaster and, with this, to finance the reconstruction or restitution of affected federal and state public infrastructure, without compromising the existing budget or the fulfillment of goals and objectives of approved public programs.

(FOPREDEN),⁹ Natural Disaster Fund (FONDEN)¹⁰, Bond and Catastrophic Insurance¹¹, which were intended to promote and support the implementation of actions aimed at addressing the damage caused by disasters of natural origin.

Audit of donations, financial instruments and risk transfer instruments

The audit of donations and financial and risk transfer instruments was based on ISSAI 5510 "Audit of disaster risk reduction" and 5520 "Audit of disaster relief", comprised the analysis of two fiscal years 2018¹² and 2019¹³, in accordance with the powers conferred to the ASF.

Donations for the reconstruction or rehabilitation of the damages caused by the 2017 earthquakes¹⁴

The audit of donations did not include private resources, since the ASF is only empowered to review public resources.¹⁵ Given the limitations, the audits focused on the performance of government agencies, in accordance with the provisions of the General Law of Civil Protection (LGPC)¹⁶.

The results of the four audits showed that the Mexican State did not guarantee that donations were delivered for the benefit of the affected population, since it did not have an agile, transparent and effective

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- 9 One of its purposes was to contribute to the reduction, anticipation and permanent and prioritized control of risk and, with this, to strengthen the resilience capacities of society to avoid or reduce the damages caused by the presence of disturbing natural phenomena.
 - 10 The importance of the Catastrophic Bond was to increase or strengthen the resources to attend to the effects caused to people and property by a disturbing natural phenomenon.
 - 11 The purpose of the Catastrophic Insurance was to strengthen the resources available in the event of the occurrence of catastrophic natural phenomena. The insurance was activated when the FONDEN trust fund was affected by damage to property and infrastructure, due to the occurrence of risks, such as: communications and transportation, hydraulic, physical, educational, sports, health, urban, solid waste, naval, tourism, fishing and aquaculture, forestry resources, housing, etc. Insurance is a means of protection against the consequences of risks, based on the transfer of risks to an insurer, which is responsible for compensating all or part of the damage caused by the occurrence of an event foreseen in the insurance contract. From the insurance point of view, catastrophic risks are characterized by the accumulation of claims, exceptionality, human influence and the complexity of the insurance technique.
 - 12 The ASF conducted audits Nos. 52-GB, 56-GB, 61-GB and 74-GB "Donations for the Reconstruction or Rehabilitation of the Affectations Caused by the 2017 Earthquakes" to the Ministry of Finance and Public Credit (SHCP), National Banking and Securities Commission (CNBV), Tax Administration Service (SAT) and Ministry of Foreign Affairs (SRE), respectively.
 - 13 The ASF conducted audits No. 16-GB "Bono Catastrófico", to the SHCP; 62-GB "Seguro Catastrófico", to Aseguradora Agropecuaria Mexicana, Sociedad Anónima (AGROASEMEX, S.A.); 25-GB and 81-GB "Bono Catastrófico", to Aseguradora Agropecuaria Mexicana, S.A.); 25-GB and 81-GB "Fondo de Desastres Naturales", to SHCP and Secretaría de Seguridad y Protección Ciudadana (SSPC); 29-GB and 82-GB "Natural Disaster Prevention Fund ", to SHCP and SSPC.
 - 14 This section was made based on the reports of audits Nos. 52-GB, 56-GB, 61-GB and 74-GB " Donations for the Reconstruction or Rehabilitation of the Affectations Caused by the 2017 Earthquakes." published by the ASF at: <https://www.asf.gob.mx/Trans/Informes/IR2018a/index.html#0>
 - 15 The Superior Audit Office of the Federation may only audit operations involving federal public resources or federal participations through contracts, subsidies, transfers, donations, trusts, funds, mandates, public-private partnerships or any other legal figure and the granting of guarantees on borrowings of States and Municipalities, among other operations.
 - 16 Article 68 states that the corresponding authorities will establish the bases and guidelines, in accordance with the provisions of this Law and its Regulations, to issue the calls, reception, administration, control and distribution of donations made for altruistic purposes for emergency or disaster relief.

mechanism for the receipt, administration and management of donations.

The results of the four audits showed that the Mexican State did not guarantee that the donations were delivered for the benefit of the affected population, since it did not have an agile, transparent and effective mechanism for the reception, administration, control, distribution and supervision of the donated resources. Likewise, the lack of precise information that would allow knowing the use and destination of the donated resources became evident, since there is a lack of precise, specific and comprehensive regulations that clearly determine the process of administration and control of the donations, which implied a deficient attention to rebuild the assets affected by the earthquakes of September 2017.

The conclusion reached by the ASF led to wonder what happened then with the resources that had been donated to the Fideicomiso Fuerza México¹⁷, financial instrument that managed the donations made by business organizations and individuals, to collaborate in the reconstruction derived from the earthquakes occurred in September 2017. This trust, in the economic literature, would be considered a hybrid as it is neither fully public nor private in nature, since, the trustee was part of the private sector initiative, led by the Business Coordinating Council, the trustee was a public entity, Nacional Financiera (NAFIN), and its purposes are also a matter of public interest.

The answers appear when reading the reports separately, they also reveal important deficiencies as follows:

For the tax sector:¹⁸

- The members of the National Civil Protection Council -the SHCP, the SRE and the National Civil Protection Coordination- did not establish the bases and guidelines for the issuance of calls, reception, administration, control and distribution of the resources to address the effects, as set forth in Article 68 of the LGPC; instead, the SHCP issued Comunicado 185 to facilitate the operation of the "Fuerza México" trust fund, to channel the contributions due to the earthquakes, without this decision being justified, substantiated and motivated.

Coordination between the SHCP and federal agencies was unknown, despite the fact that Comunicado 185 of September 21, 2017 provided that the trust would work in coordination with federal agencies, in order to focus the aid and make it be channeled quickly, efficiently and transparently, in addition to the reconstruction actions carried out by the Government of the Republic.

Regarding transparency, the use of donations in the "Fuerza México" Platform was not reported, despite the fact that these were considered strategic information, likewise the

17 The Fideicomiso Fuerza México was created as an instrument of coordination between the private sector and the Federal Government to join efforts and raise funds to support the affected areas.

18 The Ministry of Finance and Public Credit was responsible for regulating, coordinating and making donations to address the effects of the 2017 earthquakes for the benefit of the affected population transparent, in accordance with the Civil Protection Law and its internal regulations, as well as the Mexico Force Platform.

information available in this platform did not contain updated data nor the update or cut-off dates, so they were inconsistent among its different sections.

In banking and securities matters:¹⁹

- There were regulatory limitations that allowed the National Banking and Securities Commission (CNBV) to regulate and supervise trusts in which, at least, the trustee or the trustor were public entities or whose purposes served social or public interest needs, as in the case of the "Fuerza México" trust, due to the lack of a legal framework that established this obligation.

With respect to the tax administration system:²⁰

- With publicly available information from the Tax Administration Service (SAT), as of May 29, 2019, 5,083.0 million pesos (mdp) were delivered to authorized donees; however, neither the amount corresponding to the "Fuerza México" trust nor the breakdown of the tax effects for applicable deductions was specified. Only 48.4% (2,460.0 million pesos of the 5,083.0 million pesos) were reported as distributed among the states affected by the earthquakes.

For international donations:

- The Ministry of Foreign Affairs (SRE)²¹ did not register them, despite the fact that the Law of International Cooperation for Development establishes that in the National Registry of International Cooperation (RENCID) the amounts, modalities and exercise of financial resources, donations and in-kind contributions coming from foreign governments and international organizations should be registered, so it did not know the total amount of what was donated and contributed, as well as the exercise of financial resources.

However, the ASF identified donations: in kind, of 12,267 units, 197.8 tons and 31,467.5 kilograms; in technical support, of 525 people belonging to search, rescue, structuralist, emergency care and medical groups, as well as 20 canine units, and in cash, of 3,234,169.5 US dollars, 48,494.0 euros, 20.16 million Mexican pesos and 600,000.0 Canadian dollars, without these data being supported in the RENCID.

Financial and risk transfer instruments²²

In Mexico there are four financial instruments for integrated disaster risk

19 Pursuant to Article 2 of the Law of the National Banking and Securities Commission, the purpose of the Commission is to regulate and supervise the entities comprising the Mexican financial system (including development banks and trusts).

20 The Tax Administration Service was responsible for processing applications for the authorization of legal entities to be authorized to receive tax-deductible donations, to publish the amounts, use and destination of donations.

21 The Ministry of Foreign Affairs, in accordance with the provisions of the General Civil Protection Law and its Regulations, was responsible for regulating, coordinating, managing and registering donations from abroad.

22 This section is based on the reports of audits Nos. 29-GB and 82-GB "Natural Disaster Prevention Fund", 25-GB and 81-GB "Natural Disaster Fund"; 16-GB "Catastrophic Bond" and 62-GB "Catastrophic Insurance" published by the ASF at: <https://www.asf.gob.mx/Trans/Informes/IR2019b/index.html#0>.

management:

- Instruments for Low Levels of Potential Losses:
 - a) Natural Disaster Prevention Fund (FOPREDEN);
 - b) Natural Disaster Fund (FONDEN),
- Instruments for High Levels of Potential Losses
 - c) Catastrophic Bond, and
 - d) Catastrophic Insurance.

The audit of the four financial instruments for comprehensive disaster risk management was aligned with the preparation and reconstruction stages of the Disaster Management Cycle defined in ISSAI 5520 "Audit of Disaster Relief", which defines the activities to prepare communities for disasters, mitigate their impact, restore living conditions and the functioning of the local economy, as well as reduce the vulnerability or exposure of the population to natural phenomena.

Natural Disaster Prevention Fund

FOPREDEN had a timely allocation of resources for the fulfillment of its purposes, due to the fact that the trustee does not constitute specific sub-accounts and financial reserves. Between 2017 and 2019, 21 prevention projects were authorized to be financed from the fund's resources; 3 Preventive ones that were in the portfolio since 2012, 2014 and 2015, requested by Sinaloa, Chiapas and Mexico City (14.3%), for an amount of 126,960.0 thousand pesos; 5 Strategic Preventive requested by CNPC (23.8%), for

689,552.0 thousand pesos and 13 from the Research subaccount 61.9% of the total authorized for an amount of 40,228.0 thousand pesos. However, there was no certainty of the physical-financial progress of the 21 projects, even though, according to the audits carried out, the results of the projects may be visible up to 6 or 7 years after the request for resources, which limits the fund to be the most effective and efficient means.

In addition, 10 (47.6%) of the 21 projects were cancelled, which caused ignorance of the actions aimed at the reduction, forecasting and permanent control of the risks they wanted to prevent, despite having voluntarily adopted, in 2015, the Sendai Framework for Disaster Reduction 2015-2030, so it is necessary to implement proposals to modify the regulations and encourage the participation of federal entities.

Natural Disaster Fund

FONDEN's regulatory framework lacked processes to quantify, evaluate and supervise the contribution of the resources granted for the reconstruction or restitution of assets affected by natural phenomena. Neither were measures determined to improve the fulfillment of FONDEN's objectives, nor normative criteria and regulations for the adequate and effective regulation of the fund.

In relation to the management of access to the fund's resources, there were no mechanisms or criteria to verify that the requests for access to resources did not duplicate actions for the repair of

damages unrelated to the natural phenomenon in question and that the infrastructure to be supported was not the subject of previous support. Neither was it evidenced that the global request for resources was prepared and submitted, identifying the opinion on whether the requests received were in accordance with the FONDEN rules and guidelines, nor why only 308,611.3 million pesos were authorized out of the 3,538,412.5 million pesos requested for the attention of the affected properties, even when the 2003 FONDEN Trust Fund had the resources to cover the requirements.²³

Regarding the contribution in the reconstruction or restitution of the assets affected by the occurrence of natural phenomena, it was not demonstrated that the affected assets recovered the similar operating conditions that prevailed before the disaster, since it was argued that it "lacks the attributions and capacities in terms of technical and human resources to verify if the existing conditions prior to the disaster are reestablished", It was also argued that the information contained in the quarterly reports was not reliable since it did not demonstrate that it had implemented mechanisms, criteria and procedures to verify the recovery of similar conditions that prevailed before the natural phenomenon in each of the affected assets, nor that the reconstruction or restitution works included mitigation measures for future damages and, thus, reduce the vulnerability of the population to future threats.

In relation to the cost-benefit of the reconstruction or restitution of property affected by the occurrence of natural phenomena, it was verified that of the 26 natural phenomena with disaster declaration in 2019, damages were determined for 4,827,059.7 million pesos, of which only 308,611.3 million pesos were authorized out of the 3,538,412.5 million pesos requested by 14 states for the attention of affected assets, for the attention of 15 of the 26 events (57.8%), so the benefit obtained by the affected states was limited, without the SSPC accrediting the causes and criteria of that decision, since the final balance of the FONDEN 2003 Trust Fund ranged between 9,860,450.6 million pesos and 9,572,335.1 million pesos.²⁴

Catastrophic Insurance

The contracting of the Catastrophic Bond, a risk instrument that provided coverage to the assets of the "Fondo de Desastres Naturales" trust fund, was relevant, since FONDEN's resources were insufficient to attend to emergencies; However, the proposals and contracting of the catastrophic bond presented deficiencies as it did not guarantee FONDEN's financial protection on a continuous basis, since it lacked coverage against hydrometeorological phenomena, which made it impossible to corroborate the term, the insured amount, the coverage areas and the activation parameters authorized by the Technical Committee.

23 In result number 4 "Reports on the use and destination of FONDEN resources" the authorized amount of 308,611.3 thousand pesos was identified and in result number 6 "Cost-benefit of the reconstruction or restitution of property affected by the occurrence of natural phenomena" the final balance of that year of the trust was determined, based on the Public Account 201

24 The non-compliance, observation and recommendation of deficient resource management is located in result No. 3 "Management of access to FONDEN resources".

Regarding the contribution to the financial protection of the assets of the FONDEN trust, through the catastrophic bonds in force in the period 2009-2020, although its coverage allowed its protection when it was activated, it has only intervened in 1 earthquake, in 2017 and 1 hurricane, in 2015, for which 4,126,477.9 thousand pesos, which represented 75.9% of the total premiums disbursed for 5,436,945.8 thousand pesos; however, the official records of earthquakes and hurricanes, which occurred in Mexican territory in the period 2006-2020, show that the parameters established in the bonds contracted have not been in accordance with the characteristics of such events.

Catastrophic Insurance

AGROASEMEX, S.A. administered the FONDEN Catastrophic Insurance, which had coverage for damages from catastrophic risks to protect 16 types of federal infrastructure (housing, highway, educational, electrical, hydraulic, military, naval, fishing, health, solid waste disposal, tourism, urban, archeological, artistic and historical monuments, coastal zones, natural protected areas and forestry). In addition, AGROASEMEX, S.A. transferred 100.0% of the risk assumed by the operation of the Federal FONDEN Insurance (better known as Catastrophic Insurance) to the international market.

The cost of the insurance operation from 2011 to 2019 amounted to 9,817,558.3 thousand pesos, 1,090,839.9 thousand pesos on average for each period, with this, AGROASEMEX, S.A., was obliged to grant coverage for up to 45,300,000.0

45,300,000.0 thousand pesos, in the event of having intervened in all periods, an average of 5,033,333.0 thousand pesos for each coverage.

As of 2019, the administration of Catastrophic Insurance by AGROASEMEX, S.A., allowed the Federal Government to have a risk transfer instrument that would pay coverage for up to 5,000,000.0 thousand pesos derived from the adverse consequences of natural disturbing phenomena, thus protecting the FONDEN Trust for its financial protection with respect to the total losses claimed in charge of FONDEN between 2011 and 2018, since of the 4,070,430.4 thousand pesos received from the activation of the insurance would be sufficient to cover the cost of the premium for the 2017-2018 period, which was for 892,764.7 thousand pesos, that of 2018-2019 for 1,054,440.0 thousand pesos and that of 2019-2020 for 1,087,500.0 thousand pesos and an amount of 1,035,725.7 thousand pesos would remain available for a new renewal of the insurance.

Conclusions

Despite Mexico's vulnerability to hurricanes, earthquakes, rains, droughts and fires, whose intensity and duration can cause disasters, the Federal Executive decided to eliminate, in 2020, the financial and risk management instruments available to the Mexican State.

It is expected that in view of the disappearance of these instruments, the competent authorities that will henceforth be responsible for the resources that were disbursed through

the fund, as well as those that are committed and those that will be granted for the attention of the effects caused by the subsequent natural phenomena through the mechanism designed for such purposes, will establish the terms and procedures, with the purpose of reviewing the regulations governing access to the resources of the funds to achieve better compliance with the objectives of the trusts or figures determined to address the damages, with respect to the contribution of the resources destined to address the effects caused by a natural phenomenon, which allow it to evaluate, know and report on the contribution of the resources granted for the reconstruction or restitution of the assets affected by the natural phenomena and that these recover the conditions prior to their occurrence.

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Evaluation of public policy performance: Safeguarding human and women's rights

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Abstract: After analyzing three performance evaluations of public policies on equality, non-discrimination and women's access to a life free of violence, it was found that in order to activate the continuous improvement mechanism, it is necessary to communicate the audit products and thus achieve the objective of contributing to public policies and safeguarding the human rights of citizens.

Keywords: auditing, performance evaluations, public policies, human rights, gender, discrimination.

Human Rights in Auditing

Human rights are the minimum basis for a dignified life; monitoring their fulfillment is a task of co-responsibility between the public and private spheres, which necessarily requires the collaboration of government institutions and civil society. From the perspective of the United Nations (UN), "Human rights are a cross-cutting theme[...] in the key areas of development, humanitarian assistance, peace and security, as well as economic and social issues. (UN: n.d.).

As has already been pointed out in other research papers, there is evidence of an anti-corruption paradox, i.e., that while

aspiring to development and human welfare, corruption forcefully prevents the generation of effective public policies to combat it and to have an impact on the phenomena of inequality, poverty and marginalization, as well as to put an end to it. (Corichi García: 2018, 216) Corruption affects humanity and widens inequality gaps while mainly violating the human rights of the people most in need. Therefore, the tasks of auditing possess, a dimension in the field of human rights.

In a comparison exercise of international indexes¹ on institutional strength of Supreme Audit Institutions (SAIs), perception of corruption, control of corruption, impunity, quality of democracy, economic freedom, human development, and gender inequality, it was shown that there is a negative relationship between the level of corruption and the traits they measure, such as economic growth, development and freedoms of the population, as well as a positive relationship between the degree of institutional strength of SAIs and access to rights. (Corichi García: 2020, 74-76). In other words, corruption affects access to and the exercise of human rights, and both accountability and auditing contribute to the safeguarding of these rights. It can be inferred that, in fact, societies that have made progress in addressing

1 For further information on this subject, see Table 4 and the statistical annex of the article "Rendición de cuentas, fiscalización superior y derechos fundamentales" by Claudia Sofía Corichi García available at https://inap.mx/wp-content/uploads/2021/05/INAP-RAP_153-2020_compressed.pdf.

situations of inequality that mostly impact women and seek to include them in government decision-making positions tend to be less corrupt and more democratic.

It is important to consider that INTOSAI-P 12 puts citizens at the center and states that SAIs, provided they are independent, effective and credible, have an important role in making a difference for society, given the positive impact that auditing generates on trust in institutions, as well as on strengthening a democratic system. (INTOSAI: 2019, 5). Such effects are indispensable for governance and empowerment of society. Reflecting on them and building approaches that generate a concrete impact on the lives of people and societies is fundamental for the development of SAIs and democracies.

Public policies are government interventions designed to solve specific social problems and meet the needs of the population, as Luis F. Aguilar indicates, it is an attitude of the government to capture the singularity of the problems and design adjusted and peculiar options for action (Aguilar: 1992, 32). Therefore, the performance evaluation of public policies establishes a road map to impact reality. This includes addressing inequality, discrimination, and violence, among other phenomena. Accountability contributes to solving problems that restrict the full exercise of rights such as freedom, human development, and gender equality, strengthens democracy and aspires to build a society free of corruption and impunity, among other virtues.

However, there is an intermediate step between auditing and the improvement of public policies, regulations, programming and budgeting of federal resources: adequately communicating findings, suggestions and recommendations to stakeholders and to those specialized in the field, to legislators, as well as to the audited entities. Promoting audit products is essential to activate the mechanism for continuous improvement of the budget exercise and the effects of public policies. It is worth reflecting on the challenges to be assumed by SAIs and how far to act, according to the mandate and following international auditing principles, in order to have a strong impact on people's social reality.

The Superior Auditor of the Federation, Mr. David Colmenares Paramo, points out that "by exercising our attributions and powers correctly, we contribute to the prevention, detection, punishment and eventual eradication of corruption and benefit the full enjoyment and exercise of human rights. Accountability is a key component of respect for human rights and the fight against corruption, and, therefore, is a fundamental principle of the rule of law and democracy." (Colmenares: 2021) In this same sense, as indicated by Patricia Gálvez and María Eugenia Rojas in their article *Corruption As A Violation Of Women's Human Rights* published by the Latin American and Caribbean Network for Democracy (REDLAD), "the United Nations Human Rights Committee (OHCHR) has pointed out that corrupt practices have a direct impact on people as funds are diverted for development and involve, therefore,

a reallocation of resources that can interfere with respect for human rights, especially for the most vulnerable people" (REDLAD: 2019).

Therefore, SAIs foster the appropriate use of resources and the improvement of public management, since auditing strengthens: institutions (eliminating spaces of discretionality), accountability and transparency of public activities. In this way, in Mexico, the ASF contributes to the authorities of the three orders and levels of government, as well as the autonomous agencies, that execute part of the federal treasury and attend to some public problems, such as inequality, discrimination and gender violence, have an additional stimulus for the observance of the obligations conferred by mandate in Article 1 of the Constitution in the area of human rights.²

Methodology

As stated in the International Standards of Supreme Audit Institutions (ISSAI), audits create incentives for change by providing knowledge, comprehensive analysis and well-founded recommendations for improvement (ISSAI 100: 2019, 11), particularly, performance audits, among other objectives, focus on areas where it can add value to citizens, and where it has the greatest potential for improvement. It provides constructive incentives for responsible parties to take appropriate action. (ISSAI 300: 2019, 10).

This article presents an analysis exercise with the objective of finding evidence of the impact of audit products, specifically those of public policy performance evaluations, on people's social reality. A study was made of the initiatives registered in the Chamber of Deputies³ in the period after the publication of the Evaluation of the Public Policy on Gender Equality 1587-DS; of the Evaluation of the Policy to Combat Discrimination 1571-GB; and of the Evaluation of the Policy on Women's Access to a Life Free of Violence 1369-GB and contrasted with the suggestions and recommendations issued by the ASF.

Aspects of the performance evaluations

Performance audits are an increasingly important element of supreme audit because they focus on the review of compliance with quantitative and qualitative program goals and the evaluation of public policies. At the ASF, they are objective and reliable reviews that allow us to identify whether public policies operate under the principles of effectiveness, efficiency and economy; they also provide information, analysis and perspectives on governmental activities to minimize costs, obtain the maximum benefit from the available inputs, achieve the expected results, and verify the social and economic impact on citizens.

² Article 1 of the Political Constitution of the United Mexican States establishes that "...all persons shall enjoy the human rights recognized in this Constitution and in the international treaties to which the Mexican State is a party...". For more information, please visit http://www.diputados.gob.mx/LeyesBiblio/pdf/1_280521.pdf (version updated as of May 28, 2021).

³ Consulted in the Parliamentary Gazette of the Chamber of Deputies as of August 26, 2021. (<http://gaceta.diputados.gob.mx/>)

Public policy evaluations imply an objective assessment of the impact of government programs, projects, policies and actions, in the context of the goals established in the applicable regulations and in national and sectoral planning documents (ASF: s.f.). (ASF: n.d.) It is important to identify that they cover the results of governmental activities, but they broaden both temporal and administrative scopes, since they are not limited to a specific Public Account. This temporal breadth allows for an in-depth review of the elements of design, regulations, programming and budgeting, as well as implementation, evaluation and accountability. As an added value, they make it possible to identify those public policies that, by providing concrete social benefits, deserve continuity beyond the juncture of the political cycle. According to Jarquin, Molina and Roseth (2018), the Superior Audit Office of the Federation (ASF) of Mexico and the Court of Accounts of the Union of Brazil have the most experience in the practice of performance audits in the region, but only the SAIs of Mexico and Costa Rica provide information on the social benefits of this type of audits. The objective of this type of audits and evaluations is also to increase administrative efficiency and improve public services (OECD: 2017).

For the purposes of this study, and given the relevance of women's rights in the field of human rights and in the current context, the following performance evaluations were selected:

Evaluation of the Public Policy on Gender Equality 2007-2017. 1587-DS

Equality is a human right contemplated in the 4th constitutional provision that seeks to guarantee access with equal opportunities to the use, control and benefit of goods, services and resources of society, as well as decision-making in all spheres. As a result of this, and given that inequality in Mexico is a specific social problem, work was done to establish the National Women's Program, which led to the creation of the National Institute for Women (INMUJERES), to conduct public policy in this area and the National Program for Equal Opportunities and Non-Discrimination against Women (PROIGUALDAD), which led to the enactment of the General Law for Equality between Women and Men (LGIMH), which came into force in 2007.

The Superior Audit Office of the Federation evaluated the public policy on gender equality with the purpose of diagnosing the situation of the public policy from its regulatory, programmatic, budgetary and process design, to its implementation and results, in order to determine the pertinence of the treatment of the public problem.

Of the 21 initiatives presented in the LXIV Legislature (2018-2021) to the General Law for Equality between Women and Men, only 1 was approved, it was turned to the Senate and is pending analysis and, if applicable, approval and is not related to the recommendations of the Evaluation.

Evaluation 1587-DS "Public Policy on Gender Equality".	
https://www.asf.gob.mx/Trans/Informes/IR2017c/Documentos/Auditorias/2017_1587_a.pdf	
Evaluation period	2007 to 2017
Delivery	Public Account 2018 (published in February 2019), ASF Mexico.
Audited entities	INMUJERES, SHCP and CNDH
Related regulations	General Law for Equality between Women and Men
Findings	There is a lack of coordination between the LGIMH since it does not establish basic mechanisms such as the follow-up and evaluation of the national policy on equality and there are inconsistencies in the regulatory and institutional design, and programmatic, budgetary, evaluation, coordination, conduction, operation, follow-up, promotion and protection inaccuracies.
Recommendations	32 recommendations, 1 to the Chamber of Deputies, 2 to the Executive Branch, 20 to INMUJERES, 9 to the CNDH and 4 to the SHCP.

Prepared by the author with information from Evaluation 1571-GB "Política Pública para el combate a la Discriminación" of the Superior Audit Office of the Federation, Mexico 2019.

Evaluation of the Policy to Combat Discrimination 2003-2018. 1571-GB

In Mexico, the normative framework against discrimination was integrated until 2001 with the reform to Article 1 of the Constitution, which prohibited discrimination and recognized the right to equality, defining discrimination as "any distinction, exclusion or restriction that, based on ethnic or national origin, sex, age, small size, disability, social or economic condition, health conditions, pregnancy, language, religion, opinions, sexual preferences, marital status or any other, has the effect of preventing or nullifying the recognition of the exercise of rights and real equality of opportunities, sexual preferences, marital status or any other, has the effect of preventing or nullifying the recognition or exercise of rights and the real equality of opportunities of persons, and it was with the reform of the Federal Law to Prevent and Eradicate

Discrimination (LFPED) that the operating framework was strengthened so that the National Commission to Prevent and Eradicate Discrimination (CONAPRED) would be the governing body responsible for preparing the program to prevent it.

The ASF evaluated 15 years of the design of the policy to combat discrimination, since the publication of the LFPED. In its opinion, the public policy to combat discrimination was limited in its contribution to address the public problem, since discriminatory practices persisted in the country, which has perpetuated unequal treatment and access to development opportunities for the population, violating the exercise of rights and freedoms enshrined in the national regulatory framework. It also determined that there is a disconnection between CONAPRED's steering role and the implementation of this public policy.

Evaluation 1571-GB "Public Policy to Combat Discrimination" https://www.asf.gob.mx/trans/informes/ir2018c/documentos/auditorias/2018_1571_a.pdf	
Evaluation period	2003 to 2018
Delivery	Public Account 2019 (published in February 2020), ASF Mexico.
Audited entities	CONAPRED, SEGOB, SHCP, SEDESOL, CNDH, INEGI
Related regulations	Federal Law to Prevent and Eliminate Discrimination; Law on the Rights of the Elderly; General Law for the Inclusion of Persons with Disabilities; General Law on the Rights of Girls, Boys and Adolescents; and Law of the National Human Rights Commission.
Findings	There is a lack of explicit and rigorous regulation of the federal public authorities as operators of public policy; the ASF considers that, if the disjointed design continues, the policy will not be able to guarantee equal treatment. Fourteen findings were identified regarding the normative, institutional, programmatic, budgetary, evaluation, coordination, conduction, operation, follow-up, promotion and protection design.
Recommendations	30 recommendations, 7 were addressed to the Chamber of Deputies and 23 were aimed at strengthening CONAPRED as the policy director.

Prepared by the author with information from Evaluation 1571-GB "Política Pública para el combate a la Discriminación" of the Superior Audit Office of the Federation, Mexico 2019.

At the end of its evaluation, the ASF suggests a series of modifications and recommendations that would help develop a true participatory cross-cutting strategy that would serve the fulfillment of the national objective, such as preventing and eliminating exclusionary practices in public and private goods and services.

Following the exercise of identification and contrast between the recommendations of the 2019 Public Account presented to legislators in February 2020, and the initiatives presented by the Chamber of Deputies to adapt the laws related to the policy to prevent and eradicate discrimination, the following results were obtained:

From February 2020 to August 2021, 81 initiatives and 4 minutes on discrimination were found, of which 13 have been approved and 2 published in the Official Journal of the Federation (DOF).

Of the 81 initiatives, 22 of these and 2 minutes seek to amend the Federal Law to Prevent and Eliminate Discrimination, of which 3 were approved and one was published in the DOF, while the rest remain pending.

Likewise, 11 initiatives and 2 minutes seek to modify the Law of the National Human Rights Commission, of which 1 was approved, 1 was published in the DOF and the rest remain pending.

Of the initiatives that seek to modify the General Law for the Inclusion of Persons with Disabilities, 25 are pending and 6 have been approved. There are 17 more that affect other laws regarding discrimination, such as the General Health Law, the Federal Labor Law, the Political Constitution of the United Mexican States and the Federal Criminal Code, among others.

From this universe of initiatives it can be clearly observed that they address key points expressed in some of the recommendations suggested by the ASF, however, it would be difficult to ensure that these initiatives were strictly based on the recommendations of the Evaluation. The 13 initiatives approved by the Chamber of Deputies are pending in the Senate of the Republic.

Evaluation of the Policy on Women's Access to a Life Free of Violence 2007-2019. 1369-GB

The General Law on Women's Access to a Life Free of Violence (LGAMVLLV), published in 2007, protects the human right of women to a life free of violence under the principles of legal equality between women and men; respect for the human dignity of women; non-discrimination; and women's freedom.

The purpose of the evaluation of the Policy for Women's Access to a Life Free of Violence was to assess the definition of the problem that gave rise to it in its regulatory, institutional, programmatic and budgetary design, as well as the evaluation and accountability processes; Its implementation and results, with the purpose of establishing

coordination between the Federation, the states, the Federal District (now Mexico City) and the municipalities to prevent, punish and eradicate violence against women, as well as the principles and modalities to guarantee their access to a life free of violence, which favor their development and wellbeing in accordance with the principles of equality and non-discrimination.

The findings indicate that the implementation of public policy is disjointed and there are inconsistencies between their respective designs. In addition, this review shows that there are no instruments to determine the policy's imputability in situations of violence against women and that the institutional actors who have responsibilities with respect to the policy make individual efforts.

In this sense, as part of this analysis and since the submission of this evaluation, 65 initiatives and 5 minutes were submitted to the House of Representatives regarding reforms to the General Law on Women's Access to a Life Free of Violence since the Evaluation of this public policy was submitted.

For the analysis of these minutes, the date from which they were submitted to the Chamber of Deputies was considered. Of the 5 minutes, whose origin came from the Senate of the Republic, 4 concluded the legislative process and were published in the DOF, identifying that only 1 minute is partially related to the recommendations issued on the design of the public policy by the ASF.

Evaluation 1369-GB "Policy on Women's Access to a Life Free of Violence". https://www.asf.gob.mx/Trans/Informes/IR2019c/Documentos/Auditorias/2019_1369_a.pdf	
Evaluation period	2007 to 2019 (Policy design). 2010 to 2019 (Performance of the implementation policy).
Delivery	Public Account 2019, (published in February 2020), ASF Mexico.
Audited entities	SEGOB, CONAVIM, INMUJERES, SEP, SALUD, INDESOL, FGR and CNDH.
Related regulations	General Law on Women's Access to a Life Free of Violence.
Findings	They confirmed that the policy to address violence against women in Mexico has not been effective, due to the inconsistency of its design, the lack of instruments to determine whether the policy can be applied to situations of violence against women, and the fact that the implementation of the policy is disjointed and only records individual efforts.
Recommendations	42 recommendations, 8 were issued to the Equality Commission of the Chamber of Deputies, 7 related to the design of the policy and 1 related to its axes.

Prepared by the author with information from Evaluation 1571-GB "Política Pública para el combate a la Discriminación" of the Superior Audit Office of the Federation, Mexico 2019.

With respect to the 65 initiatives presented concerning this law, only 6 initiatives have been approved in the H. Chamber of Deputies without concluding the legislative process in the H. Chamber of Senators, of which 1 initiative was identified as possibly linked to the recommendation on the axes of public policy, therefore, it would be difficult to ensure that this initiative was strictly based on the recommendations of the Evaluation.

Conclusions

In Mexico, an exclusive attribution of the Chamber of Deputies is to review the Public Account, whose objective is to "evaluate the results of financial management, verify whether it has

been adjusted to the criteria set forth in the budget and verify compliance with the objectives contained in the programs"⁴. An important part of complying with this mandate involves the review of findings, suggestions and recommendations, inputs with high technical value issued by the ASF that propose to modify ordinances and budgets, as well as to contribute to the improvement of public programs and policies, making efficient use of resources.

This premise motivated the analysis that sought to find indications of the impact of these inputs on the concrete reality of people. However, the fundamental discovery is that, in order to take advantage of the benefits of

⁴ The mandate is found in Article 74, Section VI of the Political Constitution of the United Mexican States http://www.diputados.gob.mx/LeyesBiblio/pdf/1_280521.pdf (updated version as of May 28, 2021).

performance evaluations, it is still pending a permanent activation of the continuous improvement mechanism, which would ensure that the initiatives draw sufficient references based on the recommendations that emanate from this technical work. This study identified a key area of opportunity in linking the findings and recommendations resulting from supreme audits, especially in public policies.

Even though the recommendations of the three public policy performance evaluations analyzed do not seem to be a predominant and determining reference for the elaboration of initiatives by legislators in Mexico, at least in the study at hand, according to public information, communicating them increases the added value for citizens and ends up benefiting them.

With this method, it is observed that, with actions and proactive promotion of the results of audit products, including those of performance evaluations, society would benefit greatly. In the universe of initiatives studied, it was found that only 5% of them were approved and only 3% were published⁵. The greatest challenge is to deepen the virtuous relationship with the people who make up the Legislative Branch, to which this technical body (the ASF) is attached, so that, if necessary, changes in the budget, public policies and, above all, in the social reality can be achieved. SAIs could go beyond the delivery of reports, sharing them in public forums, using a citizen's language, thus allowing a full exercise of transparency and accountability.

In order for auditing to contribute to public policy and, thus, to governance, bridges are needed to better communicate its results. This could result in the modification of regulations and the consequent continuous improvement of public policies, to the benefit of the most vulnerable people. The evidence indicates that the exercise of people's human rights can be strengthened, particularly those of equality, non-discrimination and women's access to a life free of violence, which were addressed in the performance evaluations reviewed here, as long as these mechanisms are implemented and the citizenry is encouraged to follow up on the recommendations issued by the ASF. In this way, a contribution is made to the safeguarding of rights and the continuous improvement of institutions through budgetary and public policy cycles.

Finally, the challenge is to strengthen SAIs' communication with decision makers (stakeholders) so that the results of the evaluations have a greater impact on administrative and legal improvements that contribute to strengthening the full exercise of people's human rights.

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5 All data in this study should be considered under the reservation that the flow of activity in the Chamber of Deputies was diminished, like many other institutions, by the social distancing measures imposed after the declaration of a pandemic by the World Health Organization (WHO) on March 11, 2020 <https://www.who.int/es/news/item/27-04-2020-who-timeline---covid-19>.

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BENEFIT OF SIMULTANEOUS CONTROL IN THE EXECUTION OF PERUVIAN MEGA-PROJECTS

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Abstract: The Office of the Comptroller General of the Republic of Peru, through ex-post control, evidenced deficient technical dossiers and irregular payments of material advances in the execution of works. It also identified that around 60% of the paralyzed works in Peru, amounting to US\$5.1 billion, are due to technical deficiencies and contractual non-compliance and arbitration.

However, these events were not prevented and/or alerted to the entities before they occurred.

In this sense, by applying simultaneous control, through ex officio guidance and simultaneous action, during 2017 and 2018 to the Vilavilani mega project, it was possible to timely alert risks related to the technical dossier, allegedly false and/or inaccurate documents, fractioning of work supervisor and payment of advance payment of materials. This reduced the value of the work by US\$8.3 million, declared the annulment of the contractor's contract and sanctioned the contractor, and allowed the continuity of the project by avoiding arbitration with the work started.

Key words: Subsequent control, Simultaneous control, Mega projects, Mitigation of risks or adverse situations.

Conducting the research

Through the website of the Office of the Comptroller General of the Republic of Peru, access was obtained to compliance audit reports (ex-post control) issued by the Sub directorate of Mega Projects, for the two types of irregularities analyzed in this investigation:

- The first one corresponds to deficiently prepared or overvalued technical files, for which the audit report n.º 1297-2018-CG/MPROY-AC related to the project Expansion and improvement of the Moquegua Hospital Level II-2 for 37 million dollars, in the department of Moquegua - Peru, which showed that the technical file was approved despite being incomplete, observed by the supervisor and without the opinion of the Ministry of Health, which led to the damage of 150 thousand dollars.

Likewise, the audit report n.º 629-2018-CG/MPROY-AC related to the project Improvement of the Uchumayo bypass road, in the department of Arequipa for 28 million dollars, it was observed that the costs were not supported by the increase, causing damages of 750 thousand dollars; likewise, it was approved incomplete and with deficiencies, due to the lack of

interference studies, environmental impact, storm drainage, telecommunications; which caused the formulation of the additions n. This caused the formulation of additions No. 1, 7, 8, 10, reductions No. 1 and deductions No. 6 and 7 for 2 million dollars.

As can be seen, through the subsequent control, irregularities were identified in the formulation of the technical file, which affected the public resources upon completion of the work or project.

- The second type of irregularity analyzed is the payment of advance payment for materials in breach of procurement regulations for the execution of public works, for which the audit report no. 1297-2018-CG/MPROY-AC related to the project Expansion and improvement of the Moquegua Hospital Level II-2, amounting to 37 million dollars, was reviewed. ° 1297-2018-CG/MPROY-AC related to the project Expansion and Improvement of the Moquegua Hospital Level II-2, amounting to 37 million dollars, which observed that, the processing of advance payment of materials for 12.50 million dollars was initiated by the entity before the request and was paid in 1 calendar day (December 31, 2014), and in breach of the requirements for this type of payment, favoring the contractor with such payment.

Likewise, the audit report n. ° 629-2018-CG/MPROY-AC related to the project Improvement of the Uchumayo bypass road in the region of Arequipa for 28 million dollars, it was observed that the entity paid

the advance payment of materials for 6 million dollars, despite the fact that it did not have the land available to start the work nor the contract of the work supervisor, appointing an inspector to support two of the requirements to start the work and grant the advance payment of materials, although it actually started 9 months after the payment of said amount and reached the legal interest of 100 thousand dollars.

As can be seen, in these subsequent controls it was evidenced that the advance payments of materials (up to 20% of the contract amount) were irregular.

In addition to this, the General Comptroller of the Republic of Peru in the "Report of paralyzed works 2019" of March 2019, analyzed that there are 867 paralyzed works for 5100 million dollars, of which 39% are due to technical deficiencies and contractual breaches and 28% to works in arbitration; therefore, the deficient technical files and arbitration are the cause of the paralyzations of the projects.

Simultaneous control reports on the Vilavilani Mega Project

This research analyzed the audit of the first component of the project "Improvement and expansion of water supply for agricultural development in the Tacna Valley - Vilavilani II - Phase I" whose updated budget is 92 million dollars, in charge of the Special Project "Strengthening and Expansion of Tacna's Water Resources", This project was formulated in 2008 to increase the volume of water for the province

of Tacna - Department of Tacna - Peru, for population and agricultural use in the Tacna Valley, the main component is the Vilachauillani - Calachaca - Chuapalca Canal, which contemplates the execution of:

- Vilachauillani Intake, for a design flow of 22 m³/s and a catchment of 1 m³/s.
- Vilachauillani - Calachaca - Chuapalca pipeline, consisting of 04 sections. Sections I and III of gravity conduction, 28 kilometers of structural HDPE pipe; and sections II and IV of pressure conduction (siphons) of 13 kilometers.
- 01 Tunnel of 500 meters.
- Works of art for the Borateras Crossing, roads, streams, among others that integrate the system of the file.

In this regard, through management resolution No. 247-2015-GRT-PET-GG of December 31, 2015, the first technical file was approved, being updated through management resolution No. 197-2016-GRT-PET-GG of October 3, 2016, for 38 million dollars, which led to the public bidding process No. 007-2016-GOB.REG.TACNA for the contracting of the executor of the work.

In this regard, in relation to the preparation of the technical file, the first simultaneous control used to timely alert, i.e. before hiring the executor of work and the respective payment, was through the Simultaneous Action Report n.º 001-2017-3413-OCI, which alerted on February 16, 2017 the restriction of the type of pipe joint defined in the technical specifications of the current technical file, it should be noted that

only the costs of this pipe are greater than 10 million dollars.

"Risk No. 1 The technical specifications of the structural HDPE pipe consider the use of spigot-bell joint and elastomeric seals, however their use is not technically supported, generating the risk of directing the procurement of a certain pipe, company and limiting the greater participation of bidders."

Likewise, Peruvian government procurement regulations establish that the technical file must contain the necessary market inquiries to determine the cost of the work; however, the quotations for the pipes in the technical file did not prove compliance with the technical specifications and therefore their validity for defining the cost of the work, risk no. 2. It should be noted that the difference between the costs of the piping is 1.50 million dollars.

In addition to the piping, the deficient preparation of the work budget of the technical file, related to the items of earthworks, quality control, transportation, supply, and installation of piping, was alerted, due to the selective review of only 12 items, as summarized in risk no. 3, generating the risk of deficient quality and increasing the cost of the work:

- Technical specifications for the supply and installation of piping did not adequately define the quality controls, nor did they require verification of the quality of the installation prior to payment, it overlaps with other excavation and

backfill works for the piping, i.e. there were two different technical specifications for the same works.

- Hydraulic test referring to house connections and runoff, which are not related to the execution of the piped channel.
- Backfilling of the pipe trench (support bed and backfill) with borrow material (i.e., material manufactured in the quarry and transported to the canal trench); however, the soil mechanics study defined that the same excavated material could be used as backfill, thus saving costs.
- The material transport calculation used one dump truck, but the unit price analysis defined three dump trucks with the same performance.
- Initial backfilling defined norms of the National Building Regulations, detailing even trench backfilling for foundations, which does not correspond to the type of backfilling work for a piped canal.
- Disposal of material in remote locations indicated by the contractor; however, the technical file defined four dumps in order not to affect the environment.
- Transportation of 0.90 meter diameter pipes at 209.37 soles per meter of pipe, which totaled 2,855,088.66 soles (0.85 million dollars); however, the cost of transporting the 1.40 meter diameter pipe was 91.57 soles per meter; therefore, the cost of transporting the smaller diameter pipe cannot be

greater than transporting the larger diameter.

Subsequently, the selection process was declared null and void and through management resolution n.º 76-2017-GRT/GG/GG/PET of July 3, 2017, the new technical file was approved for 36.7 million dollars, merit of which, the simplified award n.º 52-2017-GOB.REG.TACNA-1 was convened. Based on this, through Simultaneous Action Report n.º 524-2017-CG/CORETA-AS dated October 3, 2017, it was alerted that:

- The technical specifications did not define the technical standards for the quality control of the pipeline backfill, which is valued at 2.80 million dollars, risk no. 1.
- The material hauling works lack technical specifications and have different denominations, works valued at 0.36 million dollars, risk no. 2.
- The technical specification of the excess material removal items referred to granular material, asphalt mix and road, although the works of the present work correspond to a channel with piping, budget valued at 0.52 million dollars, risk no. 3.
- The camp has a difference of 3,000 square meters between the budget and the plans, totaling an additional 0.35 million dollars, risk no. 4.

After that, through Simultaneous Action Report No. 001-2018-3413-OCI dated January 4, 2018, it was reported that

the technical specifications of the pipeline were not changed, the cost difference (using the average cost of the pipeline) is 1.73 million dollars, risk No. 1. Also, the clarification of the consultation regarding the pipeline, during the selection process, was not adequately addressed, risk no. 3. Also, it was noted that the material hauling item overlapped with other fill items, resulting in the risk of paying 0.60 million dollars, risk no. 2.

Pese a los riesgos alertados oportunamente a la entidad, esta otorgó la buena pro el 5 de enero de 2018 y contrató el 31 de enero de 2018 por 36.7 millones de dólares; no obstante ello, a través de la orientación de *oficio* n.º 104-2018-OCI-PET-GOB.REG.TACNA de 9 de marzo de 2018, se alertó la demora en verificar la documentación de la propuesta ganadora.

Despite the risks timely alerted to the entity, it awarded the good pro on January 5, 2018 and contracted on January 31, 2018 for 36.7 million dollars; however, through the guidance of *official letter* No. 104-2018-OCI-PET-GOB.REG.TACNA of March 9, 2018, the delay in verifying the documentation of the winning proposal was alerted.

"Risk: Verification of the entire proposal submitted by the winning bidder of Simplified Award No. 52-2017-GOB.REG.TACNA, generates the risk of non-timely detection of false documentation and inaccurate information submitted by the winning bidder to preserve the interests of the entity and its performance in accordance with

procurement regulations to communicate these facts to the Procurement Court and Public Prosecutor's Office."

In this regard, by means of four simultaneous controls (official letters No. 173, 201, 383 and 405-2018-OCI-PET-GOB.REG.TACNA), it was noted that the contractor's winning proposal contains allegedly false and/or inaccurate documentation of the personnel in charge of the quality of the work, such as: Assistant site resident, archaeologist, hydraulic and safe water specialist, and chemist.

Notwithstanding this, during this process the direct advance for 10% of the contract value was paid; now, Peruvian regulations established that, after signing the contract, it is a requirement to hire the works supervisor for the start of work, in merit of which the entity convened on February 21, 2018 the public tender n.º 02-2018-GOB.REG.TACNA, whose referential value was 1.70 million dollars, a process that required 10 professionals for 27 months for the proper execution of the entire work; as well as, equipment and experience of the company.

In this regard, due to the fact that the public tender to hire the construction supervisor was in process, Peruvian regulations allowed the entity to defer the start date of the work, and therefore the payment of direct advances and materials, for which reason the entity agreed with the contractor to defer the start date of the work execution period. Notwithstanding this, the contracting, without public bidding, was required to

hire a supervising company for 9 thousand dollars, which included 1 professional for 2 months and with requirements (personnel, equipment and experience of the company) lower than the public bidding, causing the splitting, which is prohibited in the Peruvian legislation.

These facts were alerted through the simultaneous action report No. 2-2018-OCI-3413-AS, which generated the risk of deficient supervision of the work, payment of the direct advance (10% paid after the signing of the contract) and materials for 20%, which can be paid after the start of the work, amounting to 11 million dollars.

"Risk: Direct contracting of work supervision services for S/ 32,500.00 and 60 calendar days, avoiding the selection procedure, eliminating professionals, equipment and experience of the supervising company, without considering what is established in the technical file and the contracting regulations, generates the risk of a deficient supervision of the physical, technical, economic and administrative execution of the work, among which is the quality of the works, contract payments for S/ 121,098,111.02 and advances for S/ 36,329,433.31."

In this context, the supplier was timely alerted before the delivery of the Service Order (meaning a simplified contract); therefore, it did not cause contractual effects, in this sense this service order of 9 thousand dollars was annulled, not giving rise to the start of work or the granting of the direct

advance of 20% of the value of the contract, amounting to 7.30 million dollars.

It should be noted that, as detailed above, the contract was annulled due to allegedly false and/or inaccurate documents, which was also alerted by the simultaneous control. However, the contractor filed an arbitration award, which is a means of dispute resolution that in Peru takes about 2 to 3 years, after which legal action is generally brought before the judiciary, which also takes 2 to 3 years.

Based on these alerts, the contract was declared null and void due to the presentation of allegedly false and/or inaccurate documents, the Supervisory Body of State Contracting and the Public Prosecutor's Office were notified for administrative sanctions and criminal investigations, of which to date, through resolution No. 682-2020-TCE-S2 of the State Contracting Tribunal, the aforementioned contractor was sanctioned with eight months of temporary disqualification to contract with the state.

In July 2019, the technical file was approved again for 33.3 million dollars and the contractor was hired for 29.7 million dollars in December of the same year.

Benefit and timeliness of simultaneous control of the Vilavilani mega project

As it was related, in 2016 the technical file of the work "Villachullani - Calachaca - Chuapalca Canal" was

approved and the tender was called to hire the work executor, whose initial referential value was 38 million dollars, then through the simultaneous controls alerted by the Institutional Control Body and the Tacna Regional Control Management, in July 2019 another technical file was approved for 33.3 million dollars and the new work executor was contracted for 29.7 million dollars in December 2019, i.e. it was reduced by 8.3 million dollars, risks that were communicated in a timely manner and the entity partially mitigated the risks, pending to date the evaluation of the mitigation of the risks of the last file (year 2019).

Therefore, the timely control, through simultaneous control, used in Peru avoided, so far, a possible economic damage of 8.3 million dollars.

It should be noted that due to the simultaneous control alerts regarding allegedly false and/or inaccurate documentation, which led to the nullity of the contract, as well as the risk of splitting the contracting of the construction supervisor, which caused the work not to begin, it is now possible to continue with the contracting of the contractor and construction supervisor; otherwise, it would have to wait 4 to 6 years for the arbitration award to become final and then call for bids again; therefore, simultaneous control benefited the continuity of the work and the project.

Likewise, the simultaneous control must be communicated in time, that is, at the stage when the entity can take actions to correct or mitigate the risks. Likewise, the experience of the audit staff influences the definition of

representative and adequate samples for the time available for review and communication of risks, in the present case only 12 items of the total budget were analyzed, main queries of the selection procedure and selection of allegedly false and/or inaccurate documents; also, in obtaining sufficient and appropriate evidence.

The current simultaneous control and its application in other audit institutions

Currently, the Office of the Comptroller General of the Republic of Peru implemented for simultaneous control an additional modality, called "concurrent control", which is executed with the same audit team and identifies several milestones of an ongoing process, i.e. for example in the case of a work, these milestones can be defined, such as: bid submission, contract signing, month of execution No. 3, 7, 11, n, and / or reception of work, the number of milestones depends on the operational capacity.

In the specific case of mega projects, the audit staff is from the mega project department and does not remain in the entity where the simultaneous control is carried out, nor does it interact with the entity or citizens. However, the potential of the Institutional Control Organs of the entity in the simultaneous control lies in the fact that they physically remain in the entity, with which, they have diverse formal and informal information, obtained through audit techniques and auditor experience, which allows them to identify facts before they materialize; therefore, it is

recommended that audit personnel of the Institutional Control Organs participate in order to be able to identify facts before the effect materializes, logically it depends a lot on the predisposition and commitment of the audit personnel of the concurrent control as well as of the OCI.

In this sense, it is recommended to implement the simultaneous control through the modality of "concurrent control" with the participation of the Institutional Control Organs of the entity, so that the simultaneous control is: timely, prompt, synchronous and preventive, safeguarding that the public services are of quality and executed in a reasonable time.

Conclusions

The simultaneous control was timely and benefited the Vilavilani mega project because:

- It reduced the value of the work by US\$8.3 million, due to deficiencies in the technical file.
- It alerted of allegedly false and/or inaccurate documents in the contractor's proposal, which was sanctioned with 8 months of disqualification of the contractor.
- It avoided the splitting of the contracting of the construction supervisor and with it, the payment of the advance payment of materials for 7.30 million dollars.
- It allowed the continuity of the project regardless of the term of the arbitration (estimated at 4 to 6 years).

Simultaneous control through concurrent control can be applied to mega projects of the audit institutions, in order to ensure continuity, results and achievement of project objectives, with the participation of the specialized department and Institutional Control Bodies of the entity executing the project.

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AUTOMATION OF AUDIT PROCEDURES WITH PROCESS MINING

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Abstract: Process mining is a technology that allows to discover patterns, test controls, check compliance and performance of an organization's processes, from event records obtained from information systems. This article presents the use of this technology in audit work, through a case study with real data from the public procurement process of a unit audited by the Court of Audit of the State of Bahia. Process mining techniques were used to examine the entire population of a standard public procurement process and the simplified procurement process related to priority budget actions to combat Covid-19. The analysis allowed to understand how the pandemic affected the organization's procurement volume, compare differences between the actual process and the one envisioned in the legislation, check compliance, verify that segregation of duties was respected, discover process performance metrics and bottlenecks. It was concluded that the technology enabled analyses that would not be possible using traditional auditing techniques and provided more reliable opinions on the level of security.

Keywords: process mining, event logs, public procurement, process model, compliance, performance.

Processes play a central role in the public policy cycle, since policies are programs of government action that result from a set of legally regulated processes. In this sense, governments must optimize the processes that support the formulation, implementation and delivery of programs and services that benefit their citizens.

For their part, Audit Institutions (SAIs) contribute to the improvement of policies, programs and services when they evaluate not only their results, but also the means used to achieve them, a stage in which the examination of the conformity and effectiveness of internal processes is of particular importance. These include planning processes, budgeting processes, procurement processes, payment processes and citizen demand processes, such as the granting of a social benefit.

However, some factors have made it difficult to evaluate these processes. First, the growth in the size and functions of states in recent decades has made the decision-making process more complex. Secondly, the recent change in citizens' expectations regarding the use of technology by the Public Administration, motivated by greater proximity to the consumer experience in the private sector, has generated a trend towards digitization and automation of governments, such

as the use of integrated management systems (Enterprise Resource Planning), and the availability of smartphone applications and web pages for citizens to demand services or file complaints.

These factors require the audit activity to implement new methods and technologies for data analysis and for obtaining evidence, since, if the Public Administration has evolved, the audit activity cannot continue to use exclusively the same techniques as decades ago; at the risk of losing its relevance to society and being unable to issue adequate opinions on how governments manage the resources available in the provision of programs and services.

In this scenario, process mining stands out as a technology with great potential benefit for the audit activity, as it allows the visualization and understanding of an organization's critical processes (such as the procurement process), as they are actually performed in practice, and not as they were designed to function. In addition, through this technology, it is possible to perform risk, compliance and performance assessments.

The objective of this article is to present the feasibility and benefits of using this technology in audit work, as well as to present the results obtained in a case study, using real data from the public procurement process of an audited organization.

Development

Process Mining

Process mining is a relatively recent

technology, which allows the extraction of knowledge from event records obtained from information systems, allowing the discovery of the process as it is actually executed in practice (de facto), in contrast to the model provided by the legislation or the organization (de jure), in addition to other analyses, such as compliance and performance.

This technology establishes a link between Business Process Management, an area of study dedicated to modeling and improving business processes, but without considering the evidence extracted from the available data, and data mining, whose techniques allow to analyze and find correlations in a set of data, but not in processes.

In this sense, process mining connects data and processes in a new way, providing a great advantage to the audit activity, by allowing the visualization and analysis of a huge amount of data of a specific process from beginning to end. In addition, this technique eliminates the need for sampling, as it is possible to extract data and perform the examination of the entire population of processes, in order to increase the quality of the assessments made by the auditors.

Similarly, it is not necessary to conduct interviews with the agents involved in the process, because it is possible to understand it, as well as the functions of each agent, from the available data and in a more reliable and objective way, because the interviews are based on the opinions and perspectives of the interviewees, which do not always match the reality of the activities of the organizations.

Process mining can be used in any electronic process processing system, as long as the minimum requirements for event records are present, namely: case or process identifier, event or activity performed, and records of the date the activity was performed (Figure 1). In addition, other data may be present, such as the names of the agents who performed the activities and the departments. This information

is valuable because it allows analysis, such as segregation of duties and social relations, i.e., verification of which agents interact with each other in the process, as well as allowing examination of the process from an organizational perspective, i.e., understanding what the process is like among the different departments and sectors of the organization.

Figure n.1. Event log

	A	B	C	D	E	F
1	Nº do Processo	Atividade	Timestamp	Agente	Departamento	
2	030.12097.2020.003967	Ofício	2020/04/23 00:00:00.000	A	A	
3	030.2854.2020.0035994	Autuação	2020/04/23 00:00:00.000	L	G	
4	030.2854.2020.0035994	Memorando	2020/04/27 00:00:00.000	D	G	
5	030.2854.2020.0035994	Relatório	2020/04/27 00:01:00.000	L	G	
6	030.2854.2020.0035994	Relatório SIMPAS	2020/04/27 00:02:00.000	D	G	
7	030.2854.2020.0035994	Declaração do Ordenador da Despesa (DOD)	2020/04/27 00:03:00.000	O	G	
8	030.2854.2020.0035994	Relatório RS	2020/04/27 00:04:00.000	D	G	
9	030.2854.2020.0035994	Requisição de Serviços (RS)	2020/04/29 00:00:00.000	DA	G	
10	030.2854.2020.0035994	Comprovante de Agendamento de Disputa	2020/04/29 00:01:00.000	D	G	
11	030.2854.2020.0035994	Resultado da Disputa	2020/04/29 00:02:00.000	D	G	
12	030.2854.2020.0035994	Autorização de Prestação de Serviços (APS)	2020/04/29 00:03:00.000	DA	G	
13	030.3033.2020.0040082	Ofício	2020/05/07 00:00:00.000	IA	H	
14	030.9784.2020.0046110	Memorando	2020/05/12 00:00:00.000	D	S	
15	030.9784.2020.0046110	Termo de Referência	2020/05/12 00:01:00.000	D	S	
16	030.9784.2020.0046110	Autorização	2020/05/12 00:04:00.000	DB	S	
17	030.9784.2020.0046110	Declaração do Ordenador da Despesa (DOD)	2020/05/12 00:05:00.000	DB	S	
18	030.12097.2020.003967	Termo de Referência	2020/05/13 00:00:00.000	B	A	
19	030.12097.2020.003967	Autorização	2020/05/13 00:01:00.000	C	A	
20	030.12097.2020.003967	Declaração do Ordenador da Despesa (DOD)	2020/05/13 00:02:00.000	C	A	
21	030.12097.2020.003967	Orçamento	2020/05/13 00:03:00.000	D	A	
22	030.12097.2020.003967	Extrato do Fornecedor	2020/05/13 00:06:00.000	D	A	
23	030.12097.2020.003967	Relação de Empresas Impedidas de Licitar e Contratar	2020/05/13 00:07:00.000	D	A	
24	030.9784.2020.0046110	Requisição de Material	2020/05/14 00:00:00.000	D	S	
25	030.12097.2020.003967	Requisição de Material	2020/05/14 00:05:00.000	E	A	
26	030.12097.2020.003967	Resultado da Disputa	2020/05/14 00:06:00.000	F	A	
27	030.12097.2020.003967	Autorização	2020/05/15 00:02:00.000	C	A	

Note: Names of agents and departments have been withheld.

Source: Prepared by the author

From the extraction of the event log, you can use the different process mining techniques to achieve the desired results and, depending on the objective and phase of the audit, one or more techniques can be combined. The main techniques and their advantages in the audit activity are described below.

The main technique is called process discovery. In this technique, an algorithm sequences the order of activities in an event log and, as a result, generates a real process model. In addition, it is possible to visualize the different variations of the process and how the same process is executed in different departments or sectors of an organization or in different organizations.

The advantage of this technique is that the visualization of the process as it is actually executed shows the complexity of an organizational process, which is not always possible with manual flowcharts or checklists prepared as templates.

This process visualization can be very useful in the planning phase of an audit, as it facilitates the understanding of the auditee. In addition, process discovery helps to understand internal controls and to identify weaknesses and potential risks in order to guide the creation of a more effective audit roadmap .

Apart from discovery, the compliance conference is another valuable technique for auditing because it allows for a quick and effective review of the process' compliance with the model. The model can be entered manually or obtained through the process discovery technique.

The conformity conference compares the event log with the model to identify discrepancies between the behavior of the model and that actually observed in practice, i.e. in the event log. Thus, it is possible to detect which activities have not been performed or have been performed out of the expected order. Likewise, using the rest of the information available in the event log, it is possible to detect process bottlenecks and perform a segregation of duties test.

The following table compares some of the Fundamental Principles of Professional Pronouncements (IFPP) of the International Organization of Supreme Audit Institutions (INTOSAI) and the respective process mining technique to obtain the result listed in the Pronouncement:

Table No. 1. Integration between IFPP's Core Auditing Principles and Process Mining

IFPP auditing principles	Process mining
Understanding	Visualize the process model executed in practice or from an organizational perspective (in different sectors)
Conducting a risk assessment or problem analysis	Identify the most critical processes and their inefficiencies and bottlenecks, which allows the processes to be classified according to their level of inefficiency.
Identify fraud risks	Identify the functioning of the controls in the process.
	Verify compliance with segregation of duties
Develop an audit plan	Identify higher-risk process variants and focus testing on these variants by performing additional procedures
Perform audit procedures to obtain audit evidence	Conduct a compliance conference to detect which cases do not comply with the applicable standards
	Determine the causes of inefficiencies and identify the responsible parties
Evaluate audit evidence and draw conclusions	Obtain higher quality evidence based on data recorded in information systems, rather than evidence produced by individuals (e.g., interviewee statement or questionnaire).
Prepare a report based on the findings	A visual form of communication (clearer and less technical) that facilitates understanding and attracts the attention of report users.
Follow up on matters reported as relevant	Perform process mining again to verify the implementation of the recommendations
	Build indicators, such as average process duration time to monitor process performance improvement over time

Source: Prepared by the author

Application of Process Mining in Auditing: A Case Study

The example described below deals with the use of process mining on data made available by a public agency audited by the Bahia State Court of Audit. In this case, the technology was applied as a "proof of concept" to demonstrate its

feasibility and usefulness in future audit work.

Two processes of the audited organization were selected: standard e-procurement process (pregão eletrônico) and simplified e-procurement process (dispensa de licitação), as well as the

respective payments of the simplified purchases. The focus on the public procurement process is justified by its importance: in addition to consuming a significant fraction of public spending, public procurement meets the demands of the State for inputs needed to provide goods and services to the population.

In this sense, the analysis was carried out under 100% of the population of the standard electronic procurement process of the logistics department of the audited organization and, with respect to the simplified procurement process, only purchases related to priority budget actions to combat Covid-19 were selected.

The data needed to apply the techniques described in the previous section were extracted from the Electronic Information System (SEI), which is the main system for processing administrative processes and documents in the State of Bahia. The SEI was developed by the Brazilian Judiciary (Federal Regional Court of the 4th Region) and is used by several public entities. Among other advantages, in addition to the obvious digitization, the SEI allows multiple instances to insert or sign documents simultaneously, without the need to process between agencies and departments, promoting greater efficiency.

Data collection and preprocessing consisted of extracting the records from the protocol lists of each instance of the process, i.e. each case, in a specific spreadsheet. Then, the R programming language was used to merge the spreadsheets into a single file

(dataframe) and in .csv format, in order to obtain the event log needed to be used as input in the process mining software (Figure n.º 1).

In addition, it was decided to link the simplified purchase process with the respective payments (assigning the same process identifier), in order to examine the simplified purchase "end-to-end", i.e. from the formulation of the order to the payment to the supplier. Since each purchase generates one or more payments which, in turn, are supported by a different process, in the traditional audit approach the examination of these processes is performed separately and often by different auditors, so that a global view of the process is not obtained.

The software used was Disco, owned by the Dutch company Fluxicon, and the Process Mining Framework (ProM), a free software developed by researchers at the Eindhoven University of Technology, also in the Netherlands. The difference between them is that Disco has fewer functions, but is easier and more intuitive to use, as well as having a nicer visual way of displaying the results. On the other hand, ProM has several functions, made available by more than a thousand plugins, so that it is possible to perform a larger number of analyses.

To guide the analysis, some questions about each of the processes were prepared:

Table 2. Guiding questions

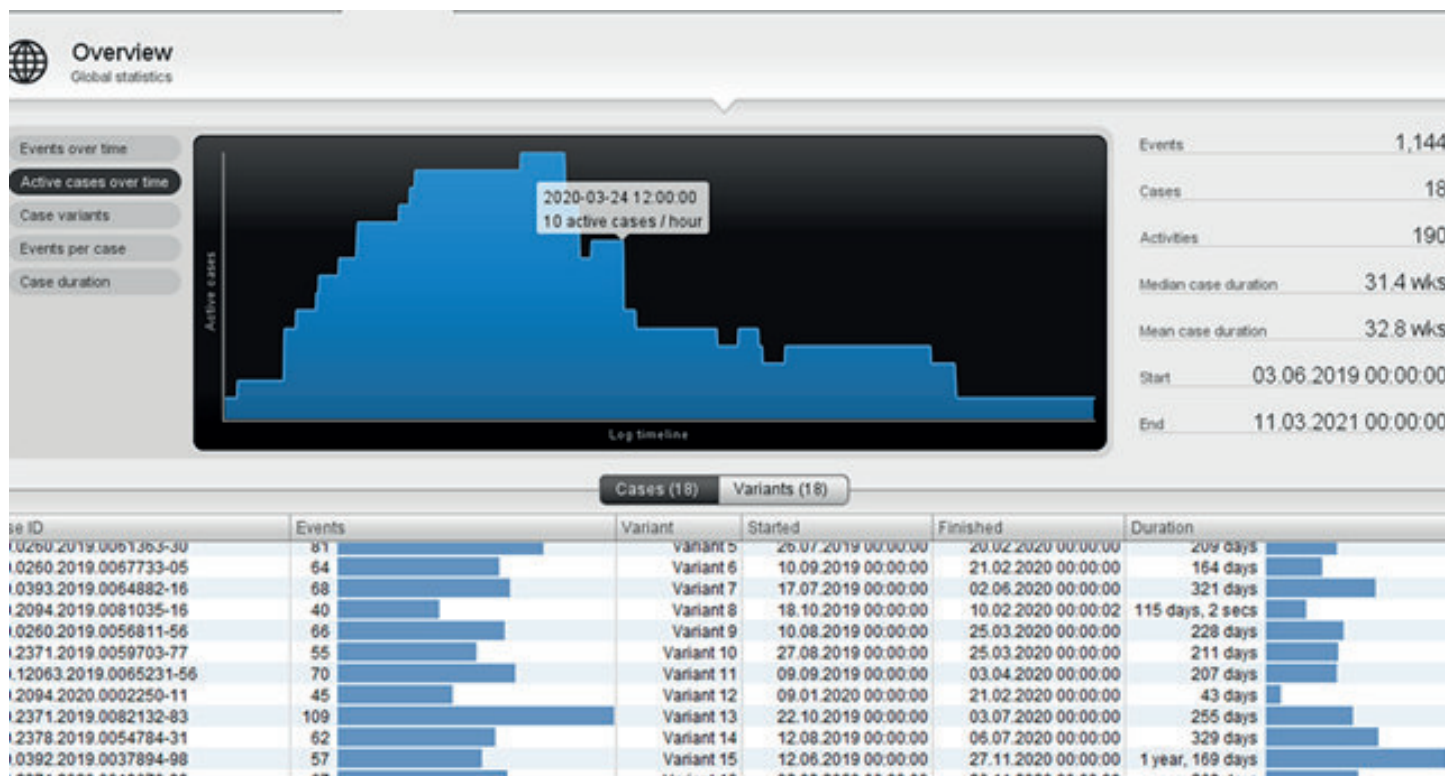
	Standard Process	Simplified procedure
QUESTIONS	1. How has the Covid-19 pandemic affected the public procurement process?	1. Did the process meet the conformity requirements?
	2. What is the average duration of the public procurement process and which cases merit attention due to their long or short duration?	2. Was there an extrapolation of the 8 working days deadline for payment upon receipt of goods/services?
	3. How is the audited entity's e procurement process actually carried out? Does it correspond to the established model?	3. Was there a violation of segregation of duties?
	4. What are the bottlenecks in the process?	

Source: Prepared by the author.

First, it sought to understand the effect of the Covid-19 pandemic on the audited organization's procurement volume. Given that the pandemic

generated an unprecedented situation of abnormality, it was intended to test the impact on public procurement.

Figure 2. Active cases over time



Source: Prepared by the author.

The overview of the process demonstrates that, in fact, the pandemic suddenly affected governmental planning, as there was a considerable drop in the number of active cases as of March 25, 2020. This drop occurred a few days after the State of Bahia decreed the start of remote work for the public service and temporary measures to address the public health emergency, both decreed on March 17 . It is also noted that the volume of purchases did not return to the level of the pre-pandemic period until the end of the recorded period, which was March 2021.

Also in the overview, it is possible to observe the average duration of the process and the duration of each case, as well as the number of activities performed in each of the cases (Figure No. 2). It should be noted that the process has an average duration of 229 days (or 32.8 weeks), with one case exceeding the one-year mark (variant 15) and another case completed in only 43 days (variant 12). It is also possible to get a general idea of the number of activities performed in each case. In variant 13, 109 actions were performed, almost double the average number of activities per process, which was 64.

This analysis of the duration of the cases and the number of activities performed provides the audit with subsidies to deepen the examinations in the cases that deserve more attention, which would hardly be possible to observe through traditional methods of analysis. Variant 12, for example, was exceptionally fast and had a lower than average number of activities. These facts may indicate a higher risk of fraud or a "positive variant", i.e. a faster way

of performing the process that was not perceived by the organization.

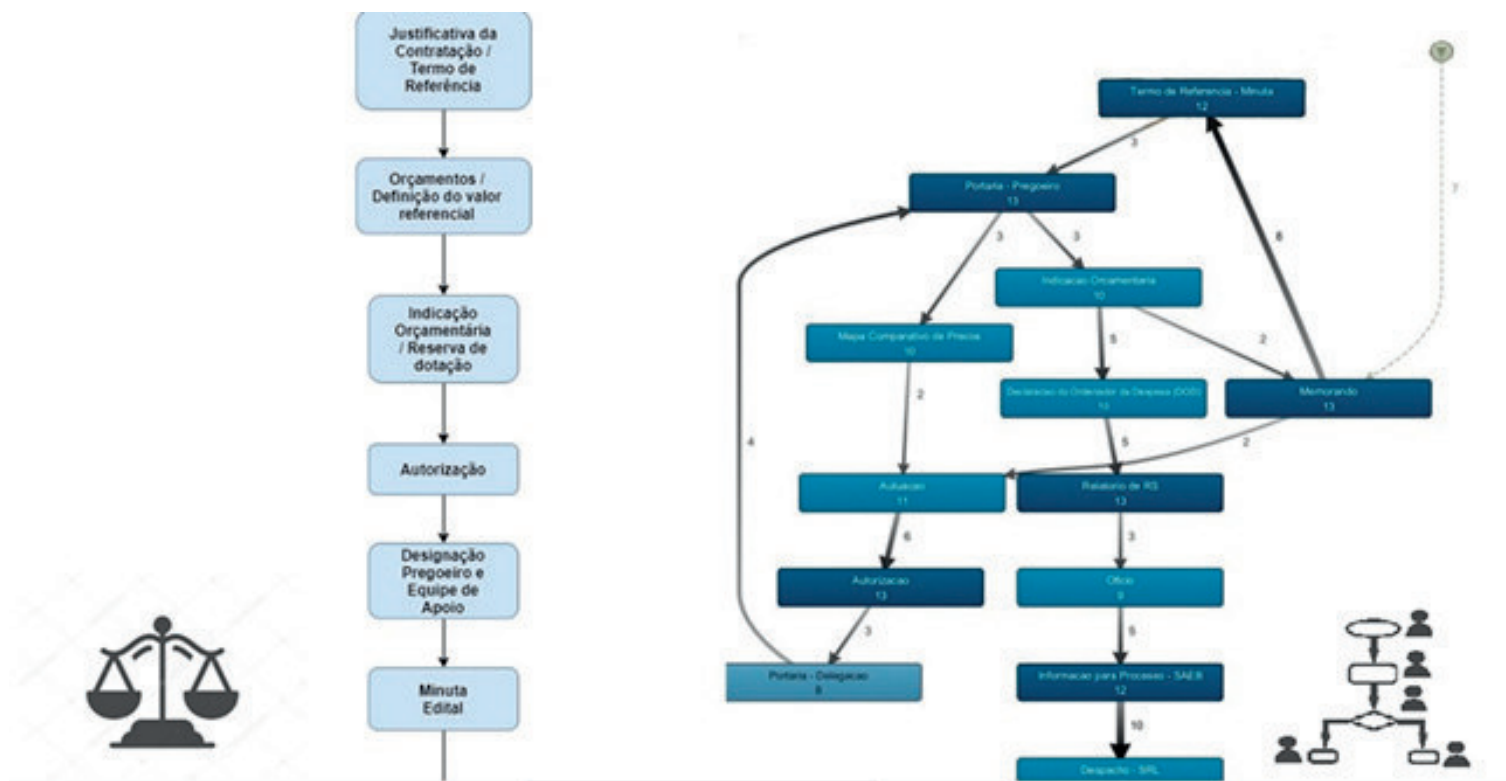
Another desired objective was to know the process as it is actually executed, in contrast to the process defined in the legislation, whose flow chart was prepared by the Secretariat of Administration of the State of Bahia (SAEB) . In other words, the intention of the review was to establish a comparison between the de facto and de jure process. The result can be seen in Figure 3.

What can be observed when comparing both models is that the flowchart described in the Manual (model on the left) is too simplified and does not explain the complexity of an e-procurement process. The model of the actual process (model on the right) has several frequent activities that are not even contemplated in the model designed, in addition to having activities that are not always performed in the same order and alternative paths for the execution of the process. In contrast, the model described in the Manual establishes a single sequence.

In addition, the process bottleneck analysis technique was applied to verify where the inefficiencies are. Thus, it was observed that the external approvals of the SAEB and the Ministry of Finance (SEFAZ) represent the bottlenecks of the process, since the first approval takes, on average, 26 days and the second takes, on average, 13.8 days, as shown in Figure No. 4.

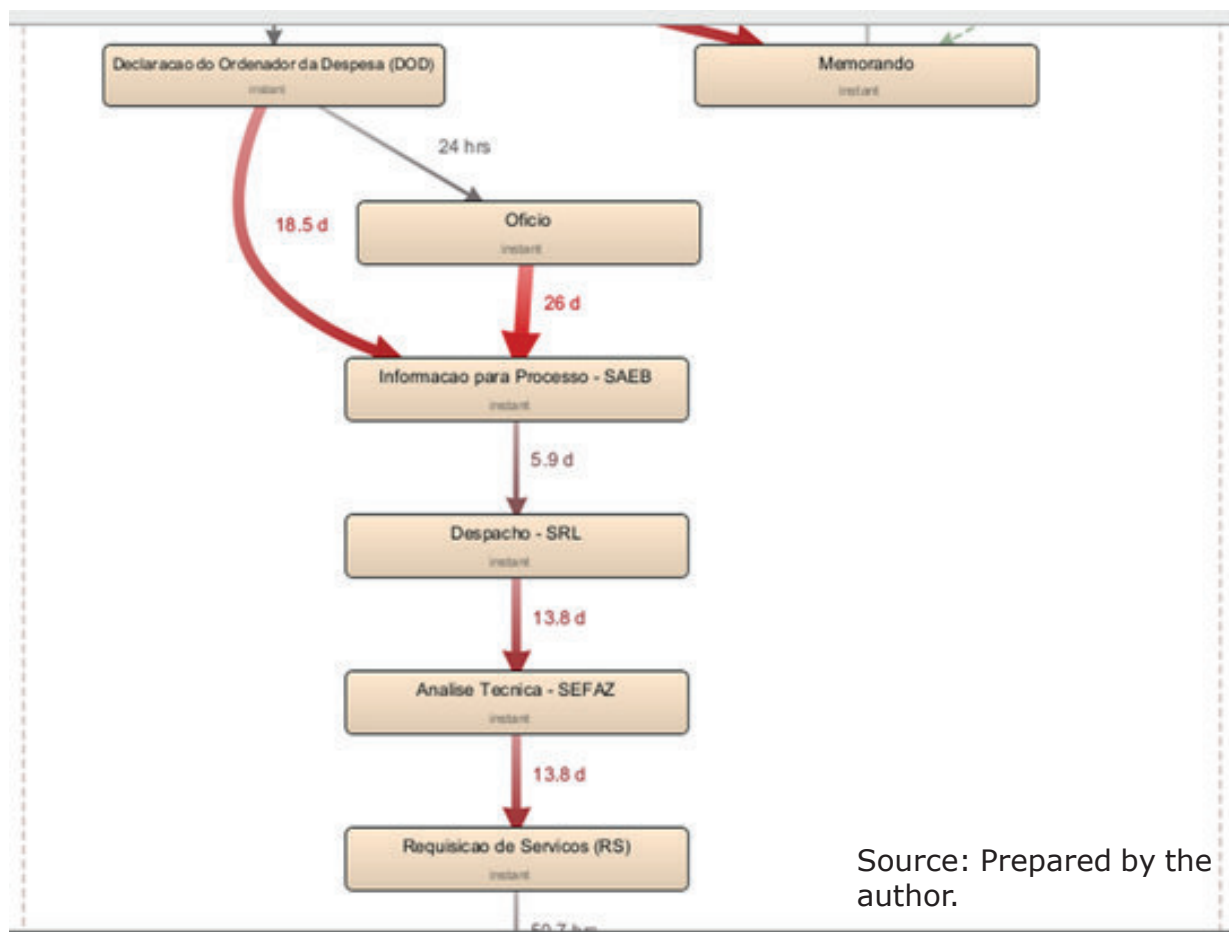
In this sense, the need to establish additional controls in the process, to avoid unnecessary purchases and maintain compliance with the imposed

Figure 3. Comparison between the de jure and de facto processes



Source: Prepared by the author.

Figure 4. Bottlenecks in the process



Source: Prepared by the author.

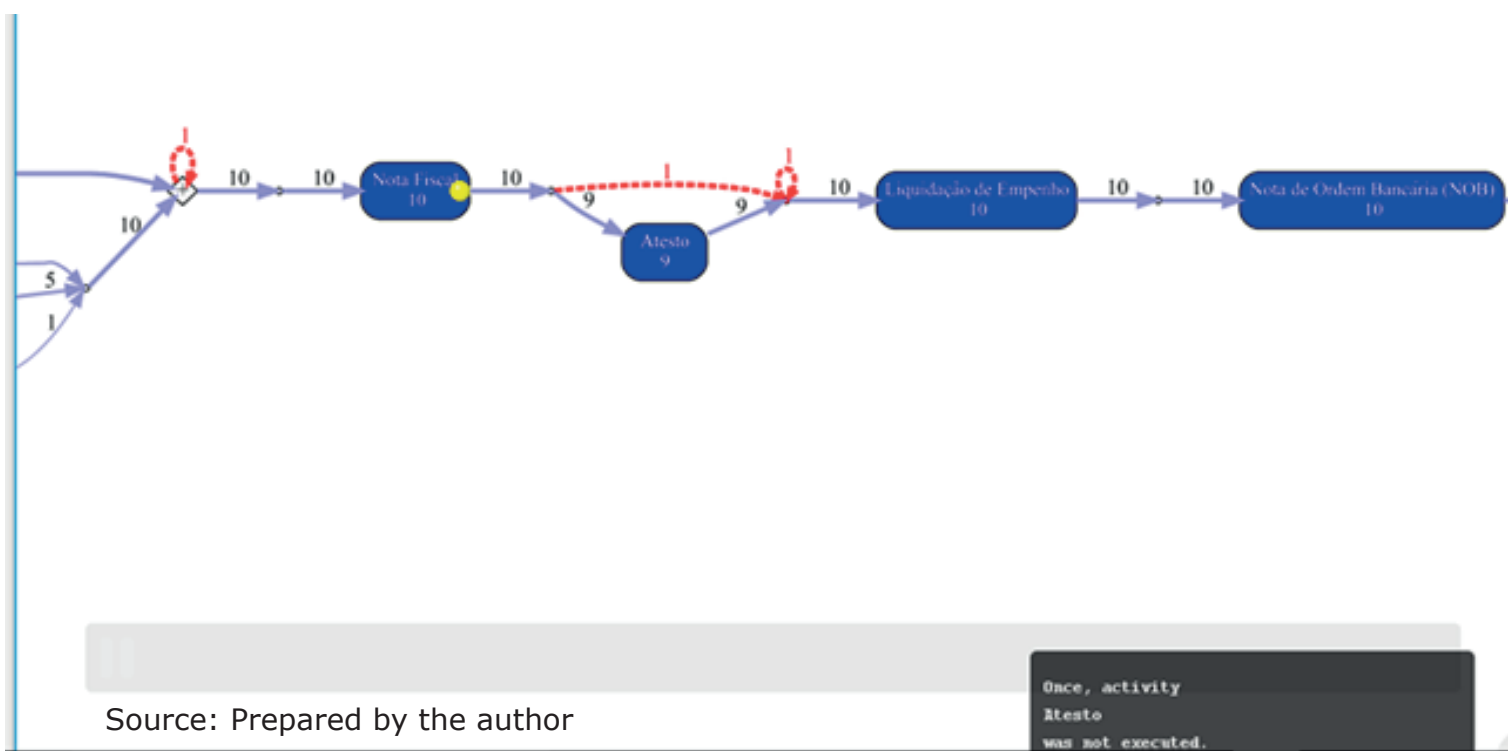
cost containment, generates, as a consequence, an increase in the processing time of the processes.

In turn, mining was applied to the simplified public procurement process and its respective payments, in order to analyze internal controls and compliance, especially because these are expenditures that are made with

greater urgency, as they are related to priority budgetary actions to combat the Covid-19 pandemic.

Regarding compliance, Figure 5 shows that only one payment does not include proof of receipt of the purchased good or service (represented by the Atesto activity).

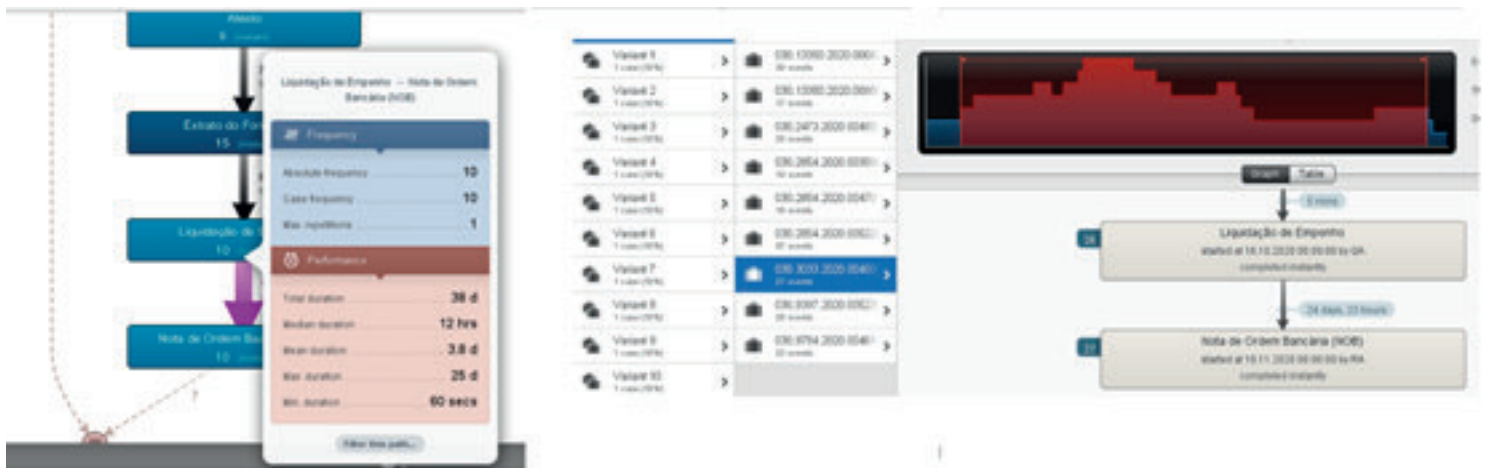
Figure No. 5. Verification of compliance with the simplified procurement procedure



In addition to the conformity of the acts performed, it was sought to verify whether the auditee had respected the 8 working days term established in the contracts to make the payment, from the date of receipt of the contracted goods or services. In this sense, a filter was established between the activities

Liquidação, which is the control act that represents the proof that the good received or the service rendered complies with the contracted conditions, and the *Nota de Ordem Bancária* (NOB), the control act that proves the transfer of financial resources from the State to the creditor's account.

Figure No. 6. Time elapsed between settlement and payment



Source: Prepared by the author

In the lower right part of Figure No. 6, it can be seen that the time elapsed between the two activities described was 24 days in one of the cases, exceeding the time limit of 8 working days.

Finally, compliance with the "four-eyes principle" or separation of functions was analyzed. According to this principle, there must be a separation between the functions of authorization or approval, execution, control and accounting of the expenditure.

This analysis uses a feature of the event log that had not been used in previous

reviews: the recording of the agent or person responsible for each activity. In this case, the activities "Autorização", "Atesto" and "Empenho" were selected, representing, respectively, the act of purchase authorization, the receipt and the act of budgetary control of the expenditure. It was found that, in only one case, the segregation of duties was not correctly observed, because the person responsible for the authorization, represented by the code "IA", was the same person who issued the Commitment Note, which is a budgetary control act of reserving a certain amount for payment.

Figure No. 7. Segregation of duties



Source: Prepared by the author

Conclusion

One of the pioneers in the use of process mining, the Dutchman Will van der Aalst, draws an analogy between the audit activity and Plato's allegory of the cave. According to him, auditors are like prisoners who only see shadows projected on the wall, because they have a distorted knowledge of reality. In trying to understand the functioning of the audited organization through management reports, charts and management statements, auditors see only reflections of the organization produced by third parties.

The differential of process mining is that this technology does not seek to simplify the complexity of the real world into graphs or summaries in a subjective way, but to sort the available data to expose the organizational processes as they are executed on a day-to-day basis.

In this sense, if the value of the audit is obtained when it is possible to bring new points of view to the auditee, which had not been observed until then, a clear advantage can be seen in the use of this technology.

In fact, in the case study conducted with public procurement processes, it was concluded that it was possible to analyze processes from new perspectives, not perceptible by traditional methods of analysis, such as the visualization of performance metrics and the detection of bottlenecks. In addition, it is possible to provide more reliable opinions on process conformity, because the procedures are applied on the entire population, not on a sample.

However, like any technology, process mining has limitations. The use of the techniques cited in this article and their results depend on the availability and quality of the data obtained. There are organizations that still use fully or partially manual processes, which limits access to the data. In addition, the way in which the information system captures data can also affect quality, since if events are not captured automatically when they occur and in a systematic and reliable way, there may be errors in some attributes, such as the date or the name of the activity performed.

Also, the above techniques do not allow to answer all questions about the process, such as the content of a particular event performed. Therefore, it is not possible to evaluate the error or success of a decision. However, the purpose of process mining (and other technologies) is not to replace the auditor's work, but to complement it. When new technologies are used, the real gain occurs when the ability of artificial intelligence to provide new insights from data is combined with the human ability to imagine, anticipate and judge changing situations through professional diligence and judgment.

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EXERCISE OF FISCAL CONTROL, CONTRIBUTING TO THE MITIGATION OF CLIMATE CHANGE IN BOGOTA D.C.

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Abstract: The Office of the Comptroller of Bogota, D.C. is a fiscal control body that "...autonomously and independently from any other form of inspection, monitors the fiscal management of the administration and individuals or entities that manage public funds or assets in order to determine whether the said task and its results are in accordance with the principles, policies, plans, programs, projects, budgets and applicable regulations and achieve positive effects for the achievement of the essential purposes of the State..."¹.

In this context, the entity with its actions contributes to ensure the efficient, effective and equitable use of public resources that are programmed and executed by the entities of the Capital District, as well as the sustainability of the natural heritage of the city.

Aware of its work and the importance of the balance that the interaction between the natural and urban bodies present in the territory of its jurisdiction must keep, this control entity contributes as guarantor of compliance with the rational, efficient and effective use of public resources, in coherence and concordance with the principles of fiscal control (especially those of environmental sustainability and valuation of environmental costs), and the progress and commitments made by the city with the country and the whole world, including the 2030 Agenda.

In this sense, with the participation and experience of the interdisciplinary human resources that the Entity has, within its innovative process, it approached the environmental fiscal control function with a change of vision in the evaluations of the state of conservation of natural heritage, which as an object of study, was transformed from a fragmented and individualistic perspective to one in which it counts all as parts of a single body, which can be affected in cascade, by the alterations of any of its parts.

The fiscal control of the natural heritage is subject to evaluation, follow-up and monitoring, within the framework of the actions programmed and executed with the use of public resources, in the context of the problems and needs of the territory and its citizens.

Currently, the entity plans its environmental fiscal control activities based on the knowledge of the reality of Bogotá D.C., and taking into account the alignment and synergy between the contents of the instruments that guide environmental management and the activities that integrate its mission processes.

Under this context, and the results obtained, procedures are updated and adapted, and institutional tools and

1 DECREE 403 OF 2020. (March 16). By which rules are issued for the proper implementation of Legislative Act 04 of 2019 and the strengthening of fiscal control.

instruments are designed and built to ensure that the exercise of fiscal control contributes to environmental sustainability and compliance with Agenda 2030. Especially since it is precisely the environmental conservation of the natural heritage that sustains and supports the social and economic subsystems of the territory.

Keywords: Natural heritage, synergy, environmental sustainability, integration, processes, Agenda 2030.

Climate change and fiscal control in the city of Bogotá D.C. - Colombia

*"According to the United Nations Framework Convention on Climate Change (UNFCCC), climate change is understood as a change in climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods."*²

Although the effects of climate change are manifested and affect the global level, it is a fact that they are the result of the contribution of emissions to the atmosphere resulting from activities carried out in all corners of the planet.

Aware of this situation, the Office of the Comptroller of Bogotá D.C. in the last decade, undertook an innovative process to comprehensively know the

environmental realities of the city, in order to identify, on the one hand, the priority aspects to address within its environmental fiscal control exercise and, on the other hand, the instruments that allow it to increase the effectiveness and contribution to its performance as an oversight body and contributor in the improvement of the environmental management of the Capital District, especially related to the sources generating emissions of gases and particles into the atmosphere and affecting the air quality of the city.

Thus, the entity has undertaken a knowledge management process to include in its control evaluations the aspects that affect the quality of the city's air and the variation of its condition and quality, mainly those derived from the use of the atmosphere as a dumping ground for gaseous waste and the management of urban trees as a CO₂ capturing element and climate regulator in the city.

In the development of this process, the following activities have been carried out to address the fiscal control of air quality and atmospheric emissions generated in the city:

1. Identification of air as a natural heritage and as an object of evaluation of environmental fiscal control.
2. Identification and application of tools for the evaluation of changes in the state of air quality and its possible relationship with the development of anthropic activities and administrative management in a given period of time.

² <http://www.ideam.gov.co/web/atencion-y-participacion-ciudadana/cambio-climatico>

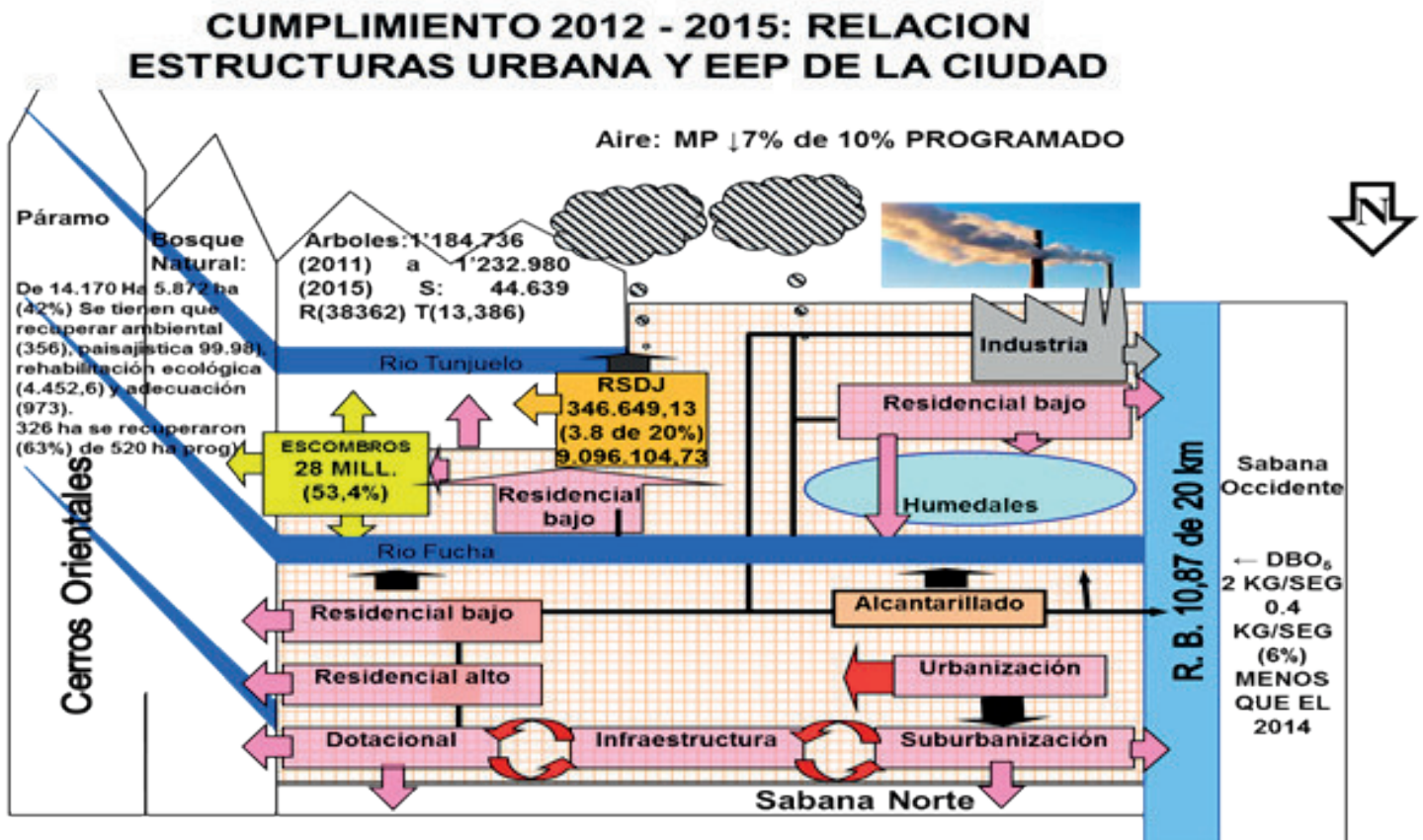
3. Identification and evaluation of databases, obtained from the capture, processing and compilation of the main parameters that define air quality at different points of the city, and which are obtained through the monitoring stations of the air, water and hydrometeorological quality networks of Bogota.
4. Identification of parameters and technical indicators, which account for the emissions produced in the generation of products and/or services of greater consumption in the city.
5. Identification of the effectiveness and efficiency of the use of public resources executed to contribute to the fulfillment of the SDG 13 goals

included in the District Development Plan, the city's main medium-term planning instrument.

6. Study of air as a natural element within the Main Ecological Structure EEP, its dynamics and relationship with each of the parts of the natural body of Bogota, as such natural resource is in intrinsic synergy with all other parts and activities developed within the urban structure.

As a result, the Office of the Comptroller of Bogotá D.C. in the last 10 years identified the relationship that exists between the natural (EEP) and urban structures of the city, and the pressure exerted by the development activities of the latter with respect to the former, as shown below:

Graph No. 1. Relationship of the Main and Urban Ecological Structures of the City of Bogota and results achieved between 2012 and 2015.



Source: Office of the Comptroller of Bogotá, D.C.
Prepared by: Office of the Comptroller of Bogotá, D.C.

In effect, for the period between 2012 and 2015, the expansion of the city, its vertical urban growth, the infrastructure of public services and the disposal of solid, liquid and gaseous waste, exerted great pressure on all the natural elements of the EEP such as: the eastern hills, the surface and subway water system, soil, flora, fauna and air, which were evidenced with the results of the

actions executed versus the goals programmed for that period.

The figures obtained with the calculation of the water footprint for the years 2013 and 2014, for example, indicate that the domestic, industrial, food and construction sectors as a whole left the following water footprint every second in Bogota. See Diagram No. 1.

Diagram No. 1. Relationship of the Water Footprints per second generated by the city of Bogotá D.C - Colombia in 2013 and 2014.



Year 2013: ³	39 m³	86 m³	134 m³
Year 2014: ⁴	26 m³	118 m³	155 m³

Source: Office of the Comptroller of Bogotá, D.C.
Prepared by: Office of the Comptroller of Bogotá, D.C.

The 2014 water footprint in m3/year left by the city of Bogota was 9,490,904,143 m3, which taken to the annual per capita WF estimated at 1217 m3, places it above cities such as La Paz, Quito, Guayaquil and Lima.

The relationship between the three water footprints shows that for every cubic meter of blue water footprint, Bogotá D.C. generated 5 cubic meters of green footprint and 6 cubic meters of gray footprint.⁵

3 PRELIMINARY ESTIMATE OF THE WATER FOOTPRINT OF BOGOTÁ, D.C. REPORT ON THE STATE OF NATURAL RESOURCES AND THE ENVIRONMENT OF BOGOTÁ, D.C. DIRECTORATE OF ECONOMIC AND PUBLIC POLICY STUDIES. Office of the Comptroller of Bogotá D.C. Annual Study Plan - PAE 2014
4 FOLLOW-UP ON THE ESTIMATION OF THE WATER FOOTPRINT OF BOGOTÁ, D.C. ANNUAL REPORT ON THE STATE OF NATURAL RESOURCES AND THE ENVIRONMENT OF BOGOTÁ, D.C. Annual Plan of Studies PAE 2015.
5 Ibidem.

On the other hand, the Carbon Footprint - CF estimated by the Comptroller of Bogota D.C. in 2014, showed that the Colombian capital reached 12'995,729.05 Ton of CO2 Eq, which taken to annual per capita CF estimated at 1.7 Ton of CO2 Equivalent is above cities such as La Paz and Quito, which produce 1 Ton Eq.

Regarding urban trees, this fiscal control body estimated that out of 10 trees planted, 8 have to be replanted and 7 are reported as missing.

The results of the technical evaluations of the environmental status and the calculation of the water and carbon footprint of the city, carried out by the Comptroller's Office of Bogotá D.C.⁶, indicate that:

- The city's EEP is falling victim to pressure from development activities being executed in its territory.
- Actions aimed at mitigating the urban effect with the numbers of urban trees continue to fall short of their

purpose.

Fiscal control in the framework of Sustainable Development Goal 13, Climate Action

The adoption, by the National Council for Economic and Social Policy, of CONPES⁷ 3918 of 2018 "Strategy for the implementation of the Sustainable Development Goals (SDGs) in Colombia", established for Colombia both the objectives of the Sustainable Development Policy and the guidelines for the implementation of the SDGs of the 2030 Agenda, in the document called "Action and Monitoring Plan (PAS)⁸" The main purpose of this Plan was to comply with: the Policy, the guidelines on the basis of which it would be developed, the methodology for its follow-up, the evaluation and the financing mechanisms of the aforementioned Agenda.

In this Plan, the following SDG 13 indicator was identified as a guideline to guide Bogotá's management with a 2018 and 2030 horizon.

Table No 1. Regional indicator for Bogota - according to CONPES 3918 of 2018

ODS	Regional Indicator	Goals
13. Climate Action	Annual reduction of total GEI emissions	The targets for this indicator will be broken down by sector

Source: CONPES 3918 of 2018.

Prepared by: Office of the Comptroller of Bogota, D.C.

6 CARBON FOOTPRINT CALCULATION. ANNUAL STUDY PLAN - PAE 2015. Office of the Comptroller of Bogotá, D.C.

7 CONPES Document NATIONAL ECONOMIC AND SOCIAL POLICY COUNCIL REPUBLIC OF COLOMBIA NATIONAL DEPARTMENT OF PLANNING. Approved Version Bogotá, D.C., March 15, 2018.

8 <https://www.dnp.gov.co/CONPES/documentos-conpes/Paginas/documentos-conpes.aspx#Default={%22k%22:%22ConpesNumero:3918%20OR%20Title:3918%22> Accessed April 29, 2021 at 9:19 am.

With the identification of the 2030 Agenda as the main guiding instrument for the development of the institutional and mission activities of the Office of the Comptroller of Bogotá D.C., the exercise of fiscal control over the last four years was proactively energized, so that the results of its performance can be seen in the institutional sustainability reports.⁹

The institutional exercise of the entity served as inspiration for the district administration to increase by 13.5% the incorporation of the Sustainable

Development Goals - SDGs in the District Development Plan A New Social and Environmental Contract for the Bogota of the 21st Century 2020 - 2024, with respect to the District Development Plan Bogota Better For All 2016 - 2020¹⁰

In relation to SDG 13, the District Comptroller's Office identified that in the District Development Plan Bogota Better for All 2016 - 2020, 3 of the 5 goals contained in the 2030 Agenda were incorporated.

Table 2. Goals of Development Goal 13, incorporated in the last two District Development Plans of the city of Bogotá D.C. – Colombia

SDG 13 Target N°	SDG 13 Target Title
13.1	Strengthen resilience and adaptive capacity to climate-related risks and natural disasters in all countries.
13.2	Incorporate climate change measures into national policies, strategies, and plans.
13.3	Improve education, awareness, and human and institutional capacity for climate change mitigation, adaptation, mitigation and early warning.

Source: SDG Association Matrix and the PDDBMPT. Secretaría Distrital de Planeación SDP.

Elaboration: Own.

⁹ <http://www.contraloriabogota.gov.co/sites/default/files/Contenido/ods/Pacto%20Global/Informes%20de%20Sostenibilidad/2018/INFORME%20DE%20SOSTENIBILIDAD%20%281%29%20%283%29-%20Infograf%C3%ADa.pdf> and, <http://www.contraloriabogota.gov.co/sites/default/files/Contenido/ods/Pacto%20Global/Informes%20de%20Sostenibilidad/2018/Informe%20de%20Sostenibilidad%20-%20Contraloria%20de%20Bogota%20D.C.%202018.pdf>.

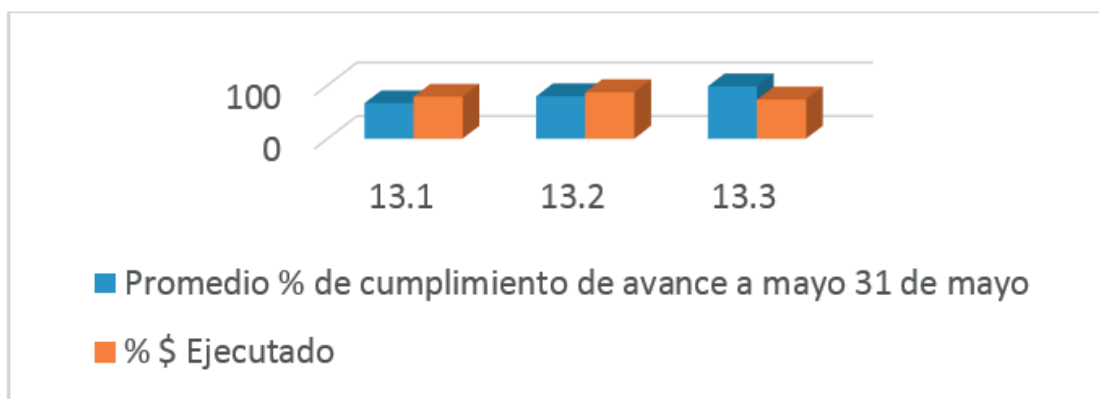
¹⁰ "Evaluation of the progress of the incorporation, implementation, investment and fulfillment of SDG targets in the main planning instruments of Bogota in the period between June 2016 and March 31, 2021". Pronouncement. Office of the Comptroller of Bogotá D.C., August 2021.

The comparison between the programmed goals and budget versus the results of what was executed between June 2016 and May 2020 identifies goal 13.3 as the most efficient, while physical progress was made with a lower budget than

programmed.

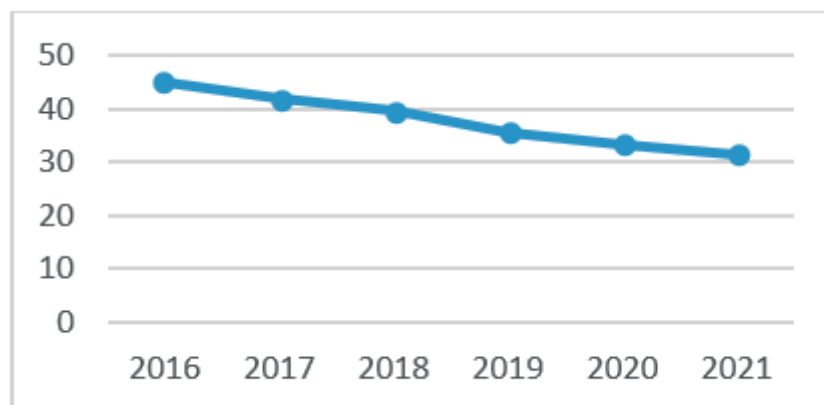
In terms of effectiveness, an average progress equivalent to 82% of what was programmed was achieved, with goal 13.3 (98%) being the one with the highest progress and 13.1 (with 66%) the one with the lowest progress.

Graph No. 1. Percentage comparison of compliance with product targets versus budget executed in SDG 13 targets in Bogota D.C. between June 2016 and May 2020.



Source: SDG Association Matrix and the PDDBMPT. Secretaría Distrital de Planeación SDP. Prepared by: Office of the Comptroller of Bogotá D.C.

Graph No. 2 Annual average of Particulate Matter Concentration below 10 Microns μ {PM10} in Bogotá D.C.



Source: Bogotá Environmental Observatory - OAB.
Elaboration: Own.

Conclusion

In the context of the evaluation of the incorporation and implementation of SDG 13 in the last two District Development Plans, it was evidenced that the percentage of incorporation of the targets of said goal was maintained and the budget programmed for the period 2020 - 2024 was decreased.

The above situation may be associated to the improvement of air quality derived from the reduction of the monthly average concentration of particulate matter, lower than 10 Microns μ {PM10}, present in the air of the city in the last 6 years. This decrease may be associated with the decrease in urban and social activity in the city caused by the C-19 pandemic.

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THE CONTROL OF PUBLIC FUNDS IN EMERGENCY. SPECIAL WORK PROGRAM

Abstract: This paper is the result of research on the exercise of Governmental Control in emergency situations. Due to the pandemic declared by the World Health Organization in March 2020, caused by the SARS-Cov-2 virus that originates the Covid-19 disease, with a very high level of contagion, there is a destabilization in the daily activity of Governments, which must adopt quick and urgent decisions of high economic and social impact in order to save the lives of their inhabitants. In the same way, the Control Organisms, in charge of guarding the management of public funds, see their activities affected. In Argentina, the social and mandatory isolation imposes teleworking, changing the face-to-face mode of control for the virtual one. This paper presents the design of a special work program that allows the remote audit of public funds in emergency using the available technology and proposing alternative solutions, in order to contribute to the transparency of the actions of the Administration through accountability and the fulfillment of the mission given to the Control Bodies as custodians of the management of public funds and developing its advisory role, in a framework of commitment to citizenship.

Keywords: Governmental control
- Emergency - Audit program -
Control consultants - Technologies
- Open Government -
Accountability - Transparency -
Social control - Journalistic
information.

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Introduction

Since the time of Moses, plagues and epidemics have struck mankind at different times throughout history in which man, organized in society, has had to respond through his governments by managing the available resources, thus obtaining better or worse results. The truth is that throughout history we have seen catastrophes in different parts of the world that have harmed the local inhabitants, such as the tsunami in Thailand, the hurricanes in the Caribbean, the earthquakes in Chile, which produced damage, destruction and lamentable human losses in the affected regions; but of which it can be said that they are limited to a geographical region and to a certain group of human beings who in different ways have tirelessly sought to restore the chaos and return to the lost normality.

However, the fact that happens in this year 2020 with the appearance of an unknown virus called SARS-Cov-2 that produces the disease Covid-19, with a very high level of contagion, which spread rapidly worldwide, causing the collapse of any health system both in developed countries and those that are not so developed, This pandemic, which destabilizes the daily and routine activities of all the governments of the world, having to make quick and urgent decisions to face an unknown enemy for

which there is no certain medical treatment and where the lives of its inhabitants are at stake, has very singular characteristics that make this Pandemic a unique and unprecedented event for our times.

These situations have brought about a deep economic and social crisis, in addition to the health crisis. In the face of this world reality, the Control Organisms must be present, supervising the actions of the State; understanding that control is the limit of power, exercising it in a timely and efficient manner and focusing on the contribution that can be made from them to improve public policies.

Research Objectives

The general objective of the present work consists of designing a "Special work program to audit public funds in emergency", highlighting the need for the Control Organisms to become control consultants in real time with an active participation through their recommendations and to be able to pronounce on the legality and the economy, efficiency, efficacy and effectiveness of the actions of the Administrations. Here we could highlight as a source of information the social audit carried out by the citizens, through the channels of citizen participation that most of the Institutions have currently developed within the pillars of Open Government. The specific objectives consist of:

- Relay and unify audit procedures applicable in emergency situations of the different control bodies.

- To review the new applicable technologies.
- To design three lines of action that make up a special work program for auditing public funds in emergencies.

The methodology used in this work is as follows:

1. The survey of auditing procedures that allow to deepen the knowledge to be applied in the current context. For this purpose, the Audit Manual of the Court of Accounts of the Province of Buenos Aires (MACOEX) and the Internal Governmental Auditing Standards of the General Audit Office of the Nation, which define auditing procedures as analytical methods of investigation and testing that auditors should use in their examination, in order to obtain evidence to support their opinions, conclusions and recommendations, have been inspected. In this way, audit procedures and techniques have been studied, taking into account, fundamentally, the objective and scope of the task and the risks involved.
2. The survey of new technologies: ICT of the auditee, remote access on secure platforms (VPN), virtual interviews or video calls (ZOOM, SISCO, WEBEX, MEETING and/or similar), use of drones and e-mails, which enable the development of the task in this situation of isolation where the face-to-face mode cannot be applied.

3. The elaboration of the special work program to audit the use of public funds in emergencies was carried out with the reading and study of audit manuals, such as the Audit Manual of the Court of Accounts of the Province of Buenos Aires, which allowed the technical development of the proposal.

Literature Review - International Emergencies and Governmental Control

It is appropriate to recall which have been the last emergency crises, at least in the last hundred years, which, in the twentieth century, were related to the influenza virus or influenza: 1918-1920: The so-called Spanish flu (H1N1). 1957-1958: Asian influenza (H2N2). 1968-1969: The Hong Kong flu (H3N2). 2009: The influenza pandemic (Virus A subtype H1N1). Another background that was applicable to the present work is to investigate how the Control Organisms developed their work in the face of emergencies caused by catastrophes, which, although they have different characteristics from the one produced today by Covid-19, have some similarities in terms of the interruption of activities in the affected areas, the increase in budgetary expenditure to restore normality and the high risk in the management of public funds allocated to that situation.

For example, one of the most recent and terrible events in the region was the earthquake that occurred in Chile on February 27, 2010, when the country was shaken by an earthquake and subsequent tsunami of great magnitude, which caused the greatest damage to

infrastructure known in the history of that nation. It was analyzed how the Chilean authorities prepared a document that included the government's Reconstruction Plan to face and overcome the consequences of the earthquake and tsunami.

Development of Research Lines ArgentinaCovid-19

In the first days of March 2020, with the return to the country of the tourists who had been in the risk areas, the first contagion appeared and the wave of contagions did not stop until today. In view of this situation and taking into account what was happening in the most developed countries in Europe and the conditions of our health system, the National Government, advised by the Crisis Committee, took the decision on March 19, 2020 through Decree No. 297/2020 to establish the "social, preventive and mandatory isolation" throughout the country as a preventive measure against the spread of the virus and in order to strengthen the health system. This restrictive measure was accepted with good predisposition on the part of the society, which understood the seriousness of the issue, due to what was happening in European countries. In such situation, the activity was totally stopped in the whole country and only health workers, Security Forces and a few so-called essential activities, detailed in the decree, such as supermarkets, pharmacies, waste collection and others, continued with their tasks, with the due protocols to avoid contagion.

In this context, the National, Provincial and Municipal Governments set a single

objective, which was to strengthen the Health System at all levels and to think of social assistance policies to alleviate the social, economic and labor effects that this restrictive measure would bring as a consequence to the population. In the legal order, prior to National Decree 297/2020, a health emergency had been declared by National Decree 260/2020 of March 12, 2020 (The state of emergency is provided for by our National Constitution in articles 76 and 99inciso3).

It is important for the purposes of this paper to know this legal situation, which is the one that currently governs the actions of the Administration in relation to the emergency expenditures and the Control Agencies to supervise their execution. In this situation, both the Public Administration and the Control Organisms that audit it, suffer the same limitations: interrupted activities, workers teleworking with improvised resources and technological limitations. For this reason it is necessary to rethink a special work program from the Control Organisms that can be applied in the current context.

Special Work Program - Development of the Program

The objective of this special work program is to monitor the use of public funds by the Administration, in the context of a Pandemic of singular characteristics. Taking into account the organization of our control scheme, we will develop a special work program based on three Lines of Action:

Line of Action N°1: Situation Analysis.

For this purpose, we consider the following lines of work to be noteworthy:

- Adjust the Audit Planning:
- Obtain remote access to the audited entity's accounting system with the proper password reservations and for consultation purposes.

Considering the adjusted planning and the possibility of remote and/or digital access to the information, and taking into account that the Budget approved in the public entities is the first control tool, we propose:

1. Digitally obtain a new budget execution of income and expenses to analyze in a global way which are the major sources of income and where most of the expenses are channeled.
2. Digitally obtain a detail of budget modifications that will allow us to verify where the management directs its new projects.
3. Make the current administration aware of the dissemination of its decisions (administrative acts, decrees, resolutions) in its official web portal. In the event that this does not happen, request the remission in virtual format to the control organism.

4. Having as material the budget modifications made (extracted from the remote access) and the administrative acts that endorse them, control not only the legality of the registrations but also verify where the new projects are oriented.
5. Determine the practices and activities that the entity is not developing: Given the health, social and labor emergency, officials discarded projects contemplated in their agendas and reflected in the budget, changing them for those that arose from the new needs. The Recommendations should warn, without obstructing management, that each change of project has a budgetary reflection, and in case it is necessary, adjust the Planning again.
6. Analyze the correct recording of the funds that are transferred in cascade effect from the National State to the Municipal Government as financial aid to cover the expenses originated by the sanitary crisis. In this case, carry out a transversal analysis: Nation/Province/Municipality, checking that the amounts remitted by each agency are duly recorded.
7. Communicate to the audited party all the deviations detected, acting in a collaborative manner so that the administration is strengthened by the control body.

Line of Action No. 2: Study of Increased Revenues/ Increased Expenditures

We consider the following issues to be of vital importance:

A) Revenues. In this line of work we propose:

1. Control through remote access/back-up of information, that the remittances received are duly recorded contrasting them with the information provided by the rest of the public bodies, raising awareness on transparency through Open Data and the exchange of information between the different internal and external control bodies.
2. Controlling the accrual of fees/taxes: As mentioned at the beginning of this point, the inoperability affected taxpayers/companies whose activities were affected, with which the State could establish exemption regimes. It would therefore be important to control through remote access that the exemptions granted are duly recorded in the Taxpayers' Registry in order to reflect the correct fiscal cost.
3. Verify the agreements entered into between the Public Administration and Debtors for the purpose of recovering assets: The economic and financial crisis generates a decrease in the collectability of rates and taxes, the duties to be collected increase and the State could find it impossible to carry out recovery actions (e.g. not to notify debts). We consider that it would be

important to verify the compensation mechanisms that could arise.

B) Outflows. For the purposes of this study, we focus on the items of greatest economic significance that are currently related to the health or social development area, taking into account that the declaration of the "state of emergency" made by National Decree 260/2020 broadens the powers of the Authorities, allowing direct hiring and making the rules regarding the hiring of personnel more flexible.

Acquisition of Medicines: We suggest the following procedures:

1. Obtain a list of detailed purchase orders through the entity's remote access/back up and contrast it with the list of Maximum Prices (prices set by our National Government for the items in greatest demand during the health pandemic). Recommend to the areas in charge of purchases to introduce the lists of Maximum Prices in their computer systems, in order to function as an alert when making acquisitions of such products, and avoid and/or justify the payment of overprices.
2. To make the Administration aware of the publicity of its acts of government, for which purpose they must comply with the publication of the acquisitions made, as indicated in Article 3 of National Decree 287/2020 when it states... "In all cases it shall be subsequently

published on the website of the National Procurement Office and in the Official Gazette"....

3. Analyze the Purchases verifying that there is no conflict of interest with the Suppliers and that the rotation of the same is carried out.

Acquisition of Equipment: We suggest:

1. Accessing through remote access to the audited entity's procurement system, or otherwise consulting the Open Data platforms where the same should be published, verify the purchases according to the rules established in each jurisdiction.
2. Through remote access to the Heritage system of the audited entity and using journalistic information, geolocation systems of other agencies, drone filming, etc., verify that the acquired equipment and facilities are registered in the heritage and in operation.

Social Plans and Subsidies: The pandemic caused a widespread labor crisis which originated the development of several social plans of containment on the part of the State. In relation to this point we propose:

1. To make the Administration aware of the dissemination of the projects designed to address the emergency, in its web portal (or public access bulletin).
2. Control the projects designed

(Emergency Family Income, Emergency Assistance to work and production, low interest rate loans for single payers, among others) to attend the population: For this purpose, we propose the crosschecking of data between different public agencies.

3. Control Food Assistance Plans: By obtaining documentation through remote access/back-up of the entity's information, verify compliance with the different food assistance plans. Likewise, using the Federal Control Network, it is possible to analyze the projects from their origin at the National and/or Provincial level until their effective delivery to the citizen through the Municipal government.

Personnel: Hiring and settlements:

We consider that personnel hiring constitutes another audit candidate and we propose the following activities for this purpose:

1. Analysis of the appointment decrees and/or contracts issued by the Executive previously requested by mail or obtained from the official website or Official Gazette.
2. Control of concepts liquidated to the personnel by obtaining it from the remote access to the accounting system.

Line of action N°3: journalistic information. Direct social control.

The "Inter-American Model Law on Access to Information", elaborated by

the Organization of American States (OAS), of which Argentina is part, approved by the General Assembly, held in June 2010, offers some ideal parameters about the information that a public authority should offer through its web page, reaffirming the social contract between authorities and citizens. In this legal context and the adaptations that each member country has made for its application, it is possible to find today an information channel in the web portals of Public Institutions where, within the framework of the Declaration on Open Government, Administrations seek to make their acts transparent, such situation is of vital importance in this time of isolation.

In order for the three lines of action developed in this work to be fulfilled more effectively, it would be necessary to strengthen and restructure the institutional design of the Control Organisms in the following areas:

- Institutional Relations: fostering communication and exchange of information with the rest of the control bodies.
- Information Technologies: Speeding up the design of computer platforms that enable and safeguard the work in reliable digital sites.
- Human Resources: Raising awareness among personnel regarding work responsibility and encouraging encouragement.

Conclusions

This paper has proposed the design of a special work program for the control of public funds in emergency situations, applicable in the current context of this pandemic, where the social and mandatory isolation has changed the face-to-face modality for the virtual one, both for Public Administration and Control Organizations, and where Governments have had to take numerous actions to protect the lives of the inhabitants from an unknown virus.

As a result of the analysis of the background, the legal framework and the complex current situation, the three essential areas to be taken into account in a control process carried out at present emerged, which can be summarized as follows: knowledge of the state of affairs of the audited entity, the study of income and expenditure, which in this time of pandemic experience an inverse movement to that normally programmed: decreasing the income and increasing considerably the public debt and the expenses especially in Health and Social Assistance and the location of the information channels: Open Data Platforms, Web Portals among others, and the journalistic one where the society more than once finds echo to its claims. From this study emerged the three Lines of Action designed in the special work program. Considering that every Auditor is a specialist in risk measurement, and that a catastrophe, as in this specific case, a pandemic, specifically modifies the risks, it was decided, in this presentation, to elaborate three Lines of Action designed in a special work program that meets the following objectives:

- The current situation has affected the different government agencies in different ways, depending mainly on the degree of computerization they possess. Taking into account this situation, the design of the special work program should include all the possibilities in its first line of action, without obstructing the actions of the administration and strengthening the audited entity - Control Organism relationship, developing its consultative function.
- This work plan should serve as a guide and support for the Reports where observations and recommendations are made so that the authorities may correct the irregularities detected, and should constitute the basis for the annual audit Report to be communicated to society, making transparent the actions of the administration with the rendering of accounts.
- The unexpected situation brought about by the Covid-19 pandemic worldwide has produced a rethinking in the development of all activities, so that these times of change are conducive to the emergence of new ideas and procedures to perform the task of governmental control. From the practical point of view, the deepening of this work will consist of studying the application of other audit procedures with the limitations imposed by the Pandemic, delving into new techniques such as the FSD Analysis (Fragmentation, overlapping and duplication in public policies) based on the development elaborated by the Government

Accountability Office (GAO), SAI of the United States of America. The application of this technique involves the examination of various programs for fragmentation, overlap, duplication and gaps between their objectives, beneficiaries, outputs, responsible institutions and budget. The identification by the audit of the existence of such misalignments can avoid conflicts in their execution. Especially applicable in the large number of social assistance projects that are underway. It is also interesting to investigate how other Control Organisms in the region work in this process. This information can serve as a guide at the time of the deepening. The comparative study of the different processes and controls will make it possible to expand this work. At this moment of a deep health, economic and social crisis, the Control Organisms should develop strategies and special work programs that strengthen their institutional quality to fulfill their mission as guardians of public funds, despite the prevailing adverse conditions, understanding that all audit measures and procedures that improve the Institutional environment favor the Society-State relationship in democratic systems of government.

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OVERPRICING IN PUBLIC PROCUREMENT OF PPE AND DIAGNOSTIC TESTS DURING THE COVID-19 HEALTH EMERGENCY

Abstract: The review of the public policies implemented in Peru and the analysis of the design and resources available for governmental control by the Peruvian Public Prosecutor's Office in the context of the Covid-19 health emergency, have established the justification for proposing a methodology to detect possible cases of overvaluation in public procurement in Peru in the context of the pandemic. Therefore, from the use of statistical tools and data intelligence, the Theil-Sen regression, of moving median, is taken into account to estimate in a given period of time the most probable value of public bidding in the market for personal protective equipment (PPEs) and Rapid Diagnostic Tests (RDTs). It is then explained that the deviation of bid values from the value estimated by the regression would indicate signs of overvaluation. It is understood that this possible overvaluation may be due to corruption or functional misconduct, public management problems or market failures. Finally, the damage derived from this overvaluation is estimated.

Key words: Hiring, Public Procurement, EPS, Rapid Testing, Overvaluation, Accountability, Health Response.

The Peruvian government and the COVID-19 health crisis

The spread of COVID-19 has challenged public and private health services

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worldwide. The response to the problems encountered in the context of the pandemic has been varied in the countries that make up OLACEFS and, in general, includes measures for detection, containment and treatment of the disease. All this has meant an unprecedented development of public management and governmental work, with high economic, social, and perhaps, corruption and functional misconduct costs, which have yet to be determined.

Peru is not an isolated case. Covid-19 has shown that Peru's health services system is not prepared to face a pandemic: the spread of the disease has highlighted the instability of the health system and has caused a collapse in health care and containment. This, added to the complex social dynamics of a country as diverse as this one and the risks of corruption faced by its fragile state apparatus in the management of public funds in a context of emergency.

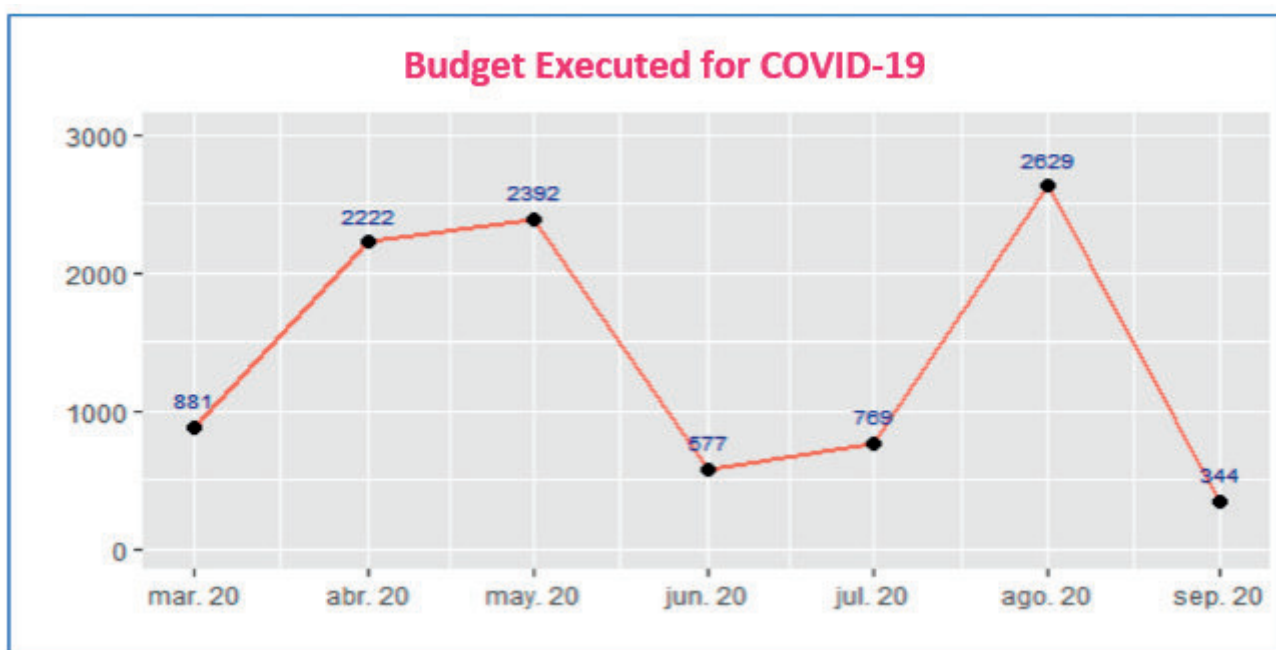
Since the confirmation of the first case in Peruvian territory, the Peruvian Executive adopted public health measures and restrictive and suppressive strategies to control the pandemic. Thus, on March 15, through Supreme Decree N° 044-2020-PCM, a State of National Emergency was declared. Border closures, curfew, suspension of economic activities,

mandatory use of personal protective equipment, among others, were measures implemented as a result of the decree. This meant that the State and citizens had to face onerous challenges with social and economic costs. According to Gonzales-Castillo et al. (2020), Covid-19 and the implementation of the suppression strategy have generated aggregate supply and demand shocks, with the consequent economic and social costs: insolvency of companies, increased unemployment, bank default, lower labor income, reduced consumption and savings, in addition to the postponement of investment decisions, which would imply a future recession.

In this context, with the aim of strengthening the supply of public health services at the national level and implementing measures to mitigate the social and economic impact, the

Peruvian government has disbursed colossal amounts of money to meet goals in the prevention, control,⁶ diagnosis and treatment of the disease caused by the new SARS-CoV-2 coronavirus. These amounts include, most notably, the monetary subsidies -called bonds- granted to mitigate the economic impact on families in the face of the mandatory social isolation measure imposed by the Peruvian government to contain the spread of Covid-19. In total, more than 8.6 million households received a voucher of S/ 760.00 (US\$ 215) in its various forms. However, as recognized by the Ombudsman's Office, problems have been identified with respect to the list of beneficiaries. These problems are linked to a deficient management in the updating of the information of the General Household Register, which is managed by the Household Targeting System (SISFOH) and under the

Figure 1



Budget Executed between March and September 2020

Source: Open Data Platform of the Ministry of Economy.

Prepared by the authors

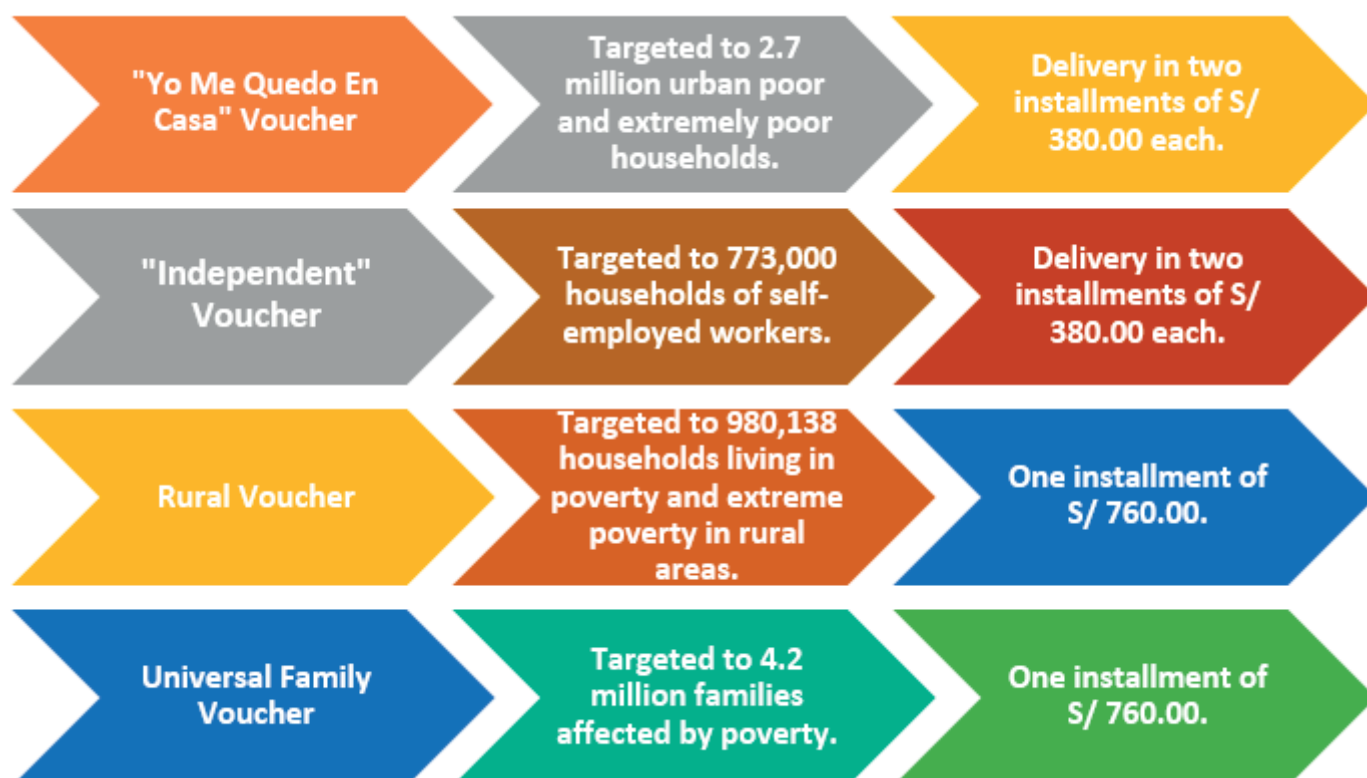
responsibility of the Ministry of Development and Social Inclusion in coordination with local governments. In this scenario, it is noted that there are corruption risks linked to the registration and updating of SISFOH information: this would have an impact on the verification of the correct targeting for the distribution of vouchers or other goods delivered, such as basic family baskets. This is, therefore, a relevant field of action for Peru's supreme audit institution, since it compromises the control of public funds in the emergency.

Another important group of executed budget is found in programs such as

"Reactiva Perú", aimed at mitigating the economic impact on micro, small, medium and large companies in the country. It consisted in the granting of loans with a government guarantee at low interest rates, in order to avoid breaking the chain of payments to workers and suppliers. The amount authorized for the granting of the Government guarantee is sixty billion soles.

Likewise, serious questions have arisen regarding the targeting of the beneficiaries of these credits, since companies related to corruption cases can be found on the list of beneficiaries.

Figure 2: Vouchers Granted to Peruvian Families in the Context of the Pandemic

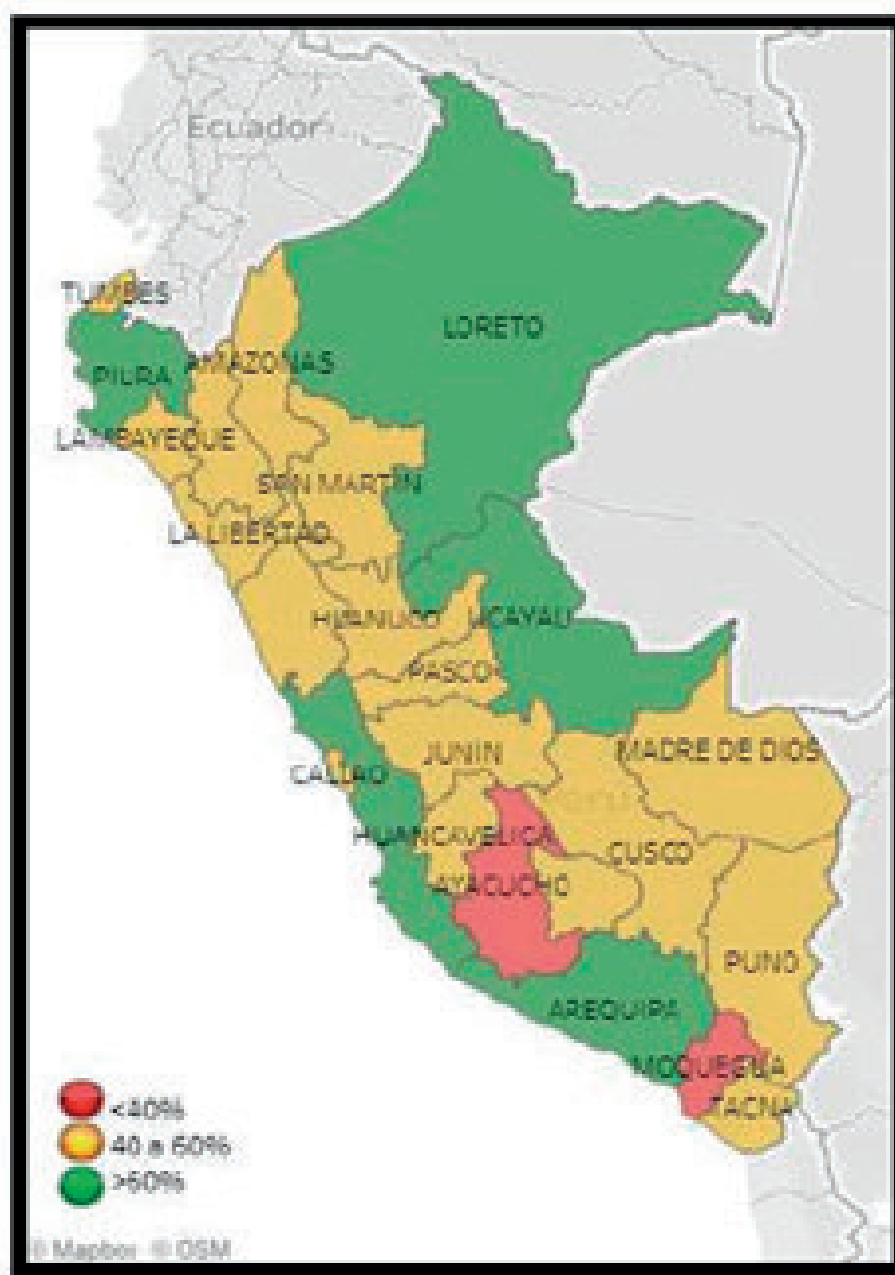


Source: Prepared by the authors based on the emergency decrees published in the Official Gazette El Peruano.

Now, with respect to the empowerment and performance of the management of regional and local governments, there are several criteria to focus on the role of supreme audit institutions with respect to the control of the use of public funds

or resources. Undoubtedly, a posteriori it will be possible to judge the performance in terms of effectiveness, efficiency, economy and quality in the delivery of health services by regional governments.

Figure 3: COVID-19 budget execution by region, Peru



Source: Friendly Consultation, Ministry of Economy and Finance

Prepared by: Budget Execution Portal of the Ministry of Education.

Role of the Peruvian Audit Institution in the process of auditing and control of public funds disbursed by COVID-19

The Office of the Comptroller General of Peru, through simultaneous controls on the quality of health services delivery, which it has been carrying out for some years now, points out that the problem exposed by COVID-19 is not a recent one. There are several deficiencies and gaps to be closed, which have not been addressed for decades. Insufficient human resources such as doctors, nurses and technicians and other more specialized ones; old infrastructure and obsolete equipment. This explains why, despite the rapid application of restrictive measures by the Peruvian government to contain the expansion of Covid-19, the expected results were liquidated by a health system that was insufficient in all its extremes.

As Vivar-Mendoza (2020: 209-214) points out, the Peruvian health system has not been immune to corruption, which has an impact on the backwardness and shortcomings of the sector. Corruption strategies have been disseminated transversally in the public system, which in this case is divided between the Ministry of Health (Minsa), the Social Security (EsSalud), the Armed Forces (FF.AA.) and the National Police of Peru. In turn, each one of them, in the context of the emergency, has acted individually and with their backs turned to the necessary coordination throughout the country, exacerbating various shortcomings.

Thus, the health emergency due to Covid-19 has required the disbursement of hundreds of millions of soles and transfers to regional and local

governments for the acquisition of goods and services; which, as already mentioned, taking into consideration the fragility of the state apparatus, generates high risks of corruption and functional misconduct.

In view of this scenario, by means of Law No. 31016 "Law that establishes measures for the deployment of simultaneous control during the sanitary emergency due to Covid-19" (sic), the Peruvian State entrusts the Office of the Comptroller General of the Republic with the supervision of investment projects, procurement of goods and services, works and all activities and processes where public resources are being transferred without any limitation whatsoever.

Thus, with the development of concurrent control, the Office of the Peruvian Comptroller General has been able to identify adverse situations with prospective purposes, regarding an inadequate targeting in the delivery of bonds, basic family baskets, placement of credits to companies, among others.

Proposed strategy for the Peruvian SAI: Methodology for identifying potential cases of overvaluation

- **Analysis of the Peruvian health supply**

Since the beginning of the Covid-19 pandemic, the need to install a differentiated health services offer of clinical care for patients became evident. Thus, in the institutions providing health services (hereinafter IPRESS) at the national level, the acquisition of goods has revolved around the strengthening of services for detection, care and treatment of this

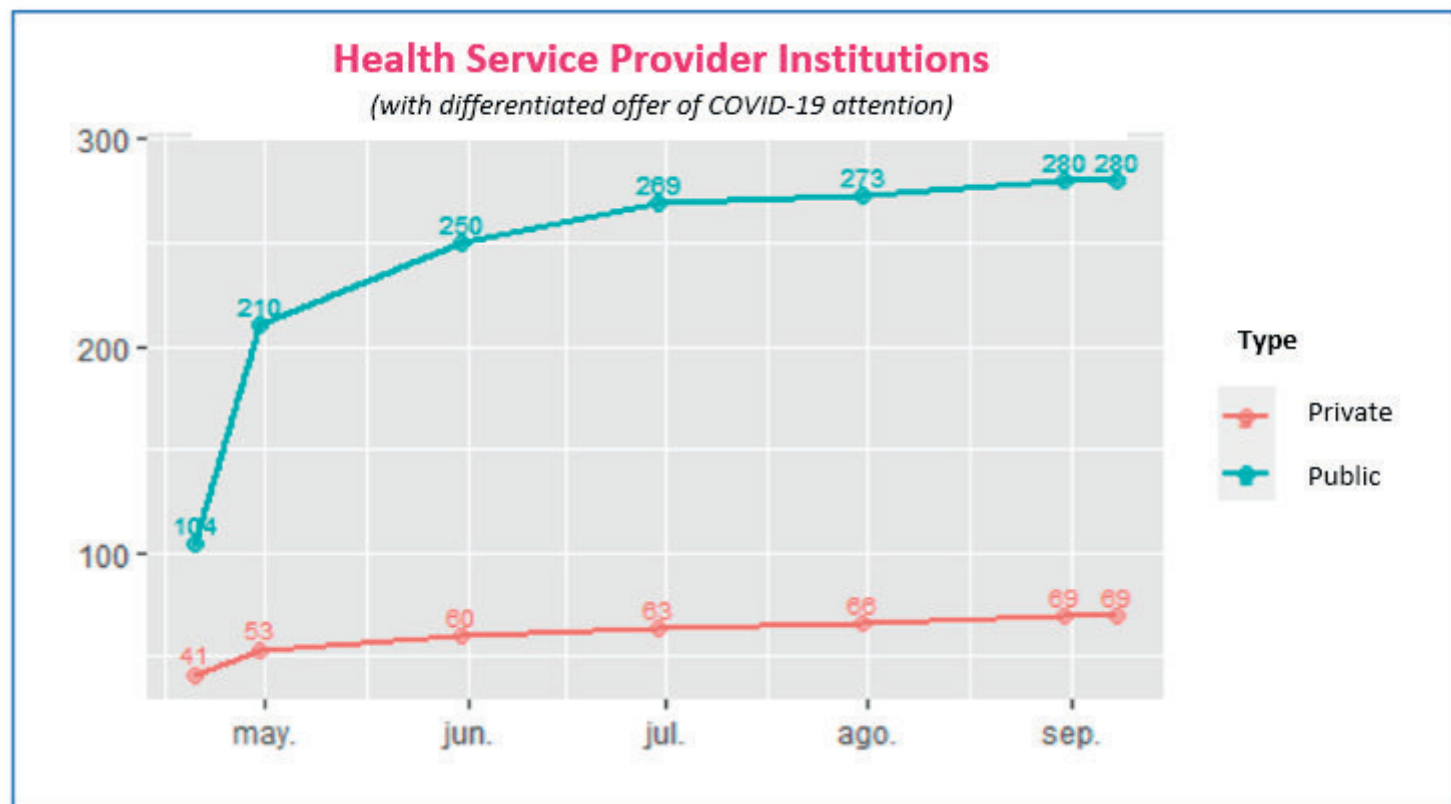
virus. As shown in Figure 4, during the state of health emergency there has been, above all, an increase in the number of public health facilities that have implemented a differentiated offer for the care of patients with Covid-19.

This shows the importance of the public health system in the prevention, diagnosis and treatment of affected persons. From April to September 2020, there was an increase of 176 IPRESS that have implemented a differentiated offer for Covid-19 care and have made acquisitions of goods and services (equipment, supplies, personal protective equipment and human resource hiring) to strengthen the provision of health services.

Among the acquisitions made during the National State of Emergency we have the purchase of personal protective equipment (hereinafter PPE), which includes any equipment or device designed to protect the person using it from one or more risks and thus increase their safety when carrying out their activities.

One of the acquisitions made in the country, both by hospitals and other state entities for the care of their workers, was respirators. These are personal protective equipment that generally work by filtering gases, chemicals and particles in the air, thus protecting the respiratory tract of the person using it. Since the emergence of

Figure 4: Health Service Provider Institutions



Source: National Superintendence of Health
Prepared by the authors

the new COVID-19, respirators have been a good alternative to the lack of face masks. The mask is a body that covers the person's nose and mouth and can protect the wearer from infection and prevent those with symptoms from spreading the disease. However, this measure alone is not sufficient for an adequate level of protection against the virus, so it is recommended to complement it with frequent hand washing, social distancing and avoiding touching the face. In Peru, its use is mandatory for all inhabitants.

As part of the supplies acquired to comply with the COVID-19 prevention and containment plan in the country, the purchase of rapid tests for the timely detection of the disease, control and immediate treatment; as well as to be able to count those infected and make decisions within the state of emergency that the Nation is going through.

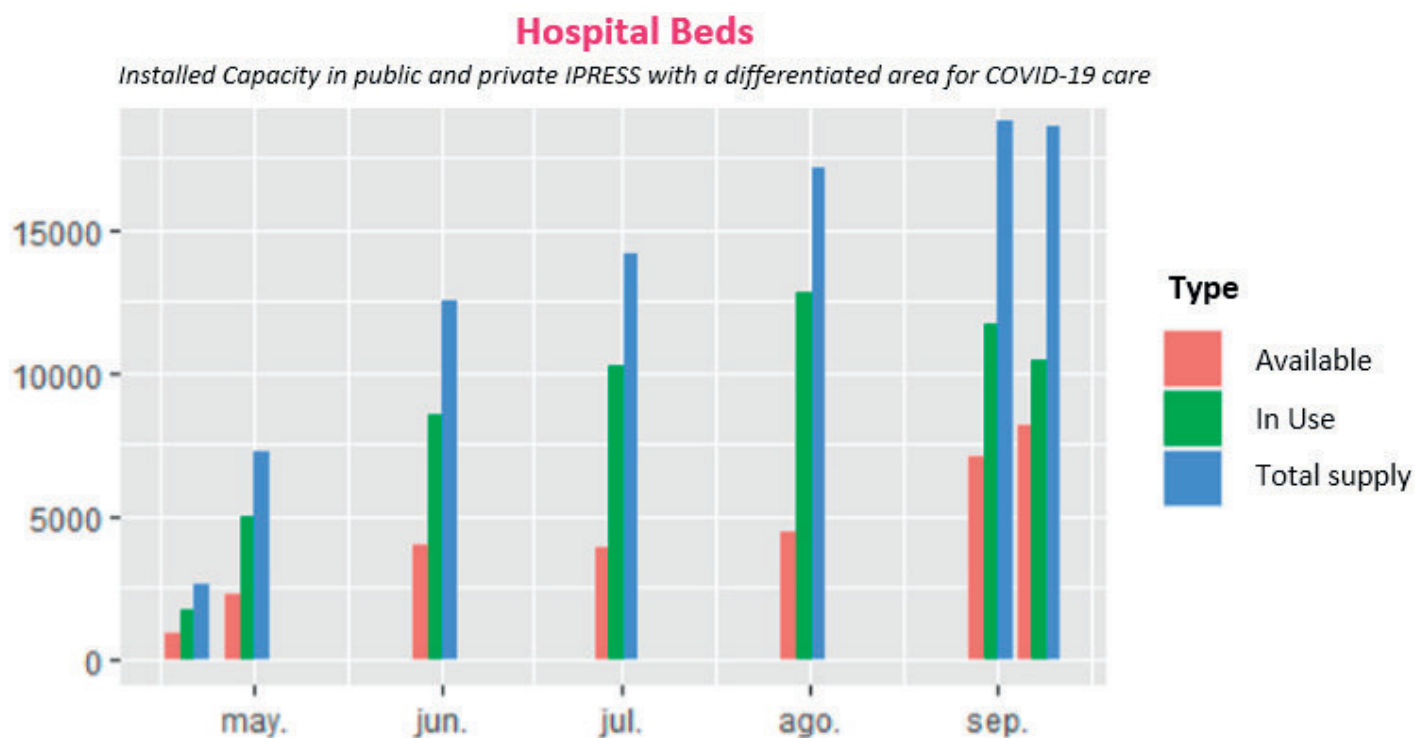
The COVID-19 coronavirus rapid tests are laboratory tests capable of identifying the virus that causes COVID-19 through the detection of antibodies in blood samples, specifically IgG and IgM. The accuracy of the results of this test depends on the time elapsed since infection. This means that if the disease was contracted recently, the accuracy will be low, while the more time elapsed between the time of infection and the time of the test, the more the accuracy will increase. On the other hand, to speak of health supply in the framework of COVID-19 is to speak of intensive care units (ICU), which have always been important for the resolution capacity of hospitals of

greater complexity. Today, due to the pandemic, they have become more relevant. And to speak of the availability of an intensive care bed in these circumstances is to speak of a set of specialized equipment, such as a vital functions monitor, a special bed, a mechanical ventilator and a secretion aspirator, among the most important.

According to the information handled by the National Health Superintendence (SUSALUD), the existence of an ICU bed does not necessarily imply or involve the availability of a mechanical ventilator, as critical equipment for the care of a serious patient with Covid-19. Certainly, in the public sector, the processes for acquiring ventilators have been slow and cumbersome. An in-depth analysis of the information available on government portals and websites is required. In this regard, the Peruvian government has sought articulation with the private sector through Legislative Decree No. 146610, with the aim that private clinics provide Covid-19 care services, as needed, to patients referred by the Integral Health System (SIS) and EsSalud, as a service exchange to be paid by the State.

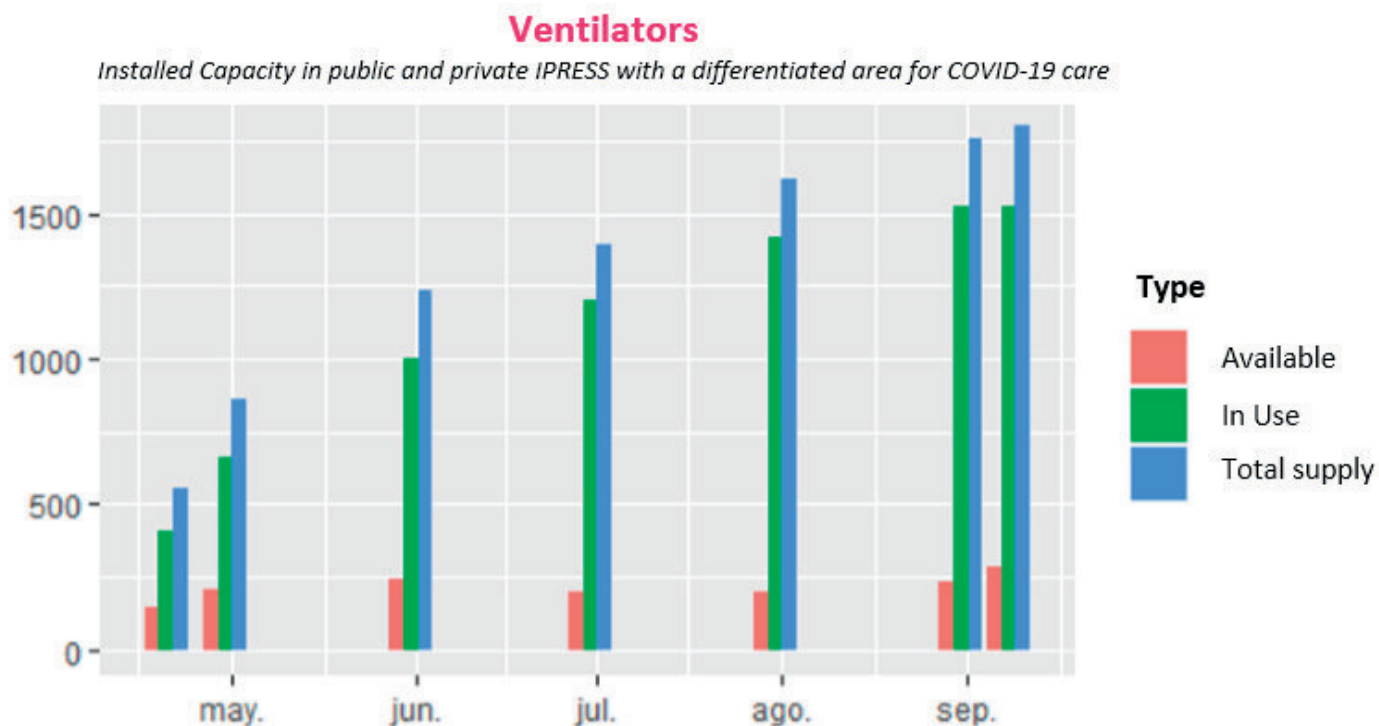
Unfortunately, the contracts signed between the public and private sectors within the framework of this legislative decree have not achieved the expected objectives and expectations. In the full scenario, from April to September 2020, the percentage of available ICU beds and ventilators has fallen from 26% to 13% of the total available supply in both public hospitals and private clinics.

Figure 5: Hospital Beds



Source: National Superintendence of Health
Prepared by the authors

Figure 6: Ventilators



Source: National Superintendence of Health
Prepared by the authors

• Legal Framework

The purpose of the Peruvian procurement regulations is to establish rules aimed, on the one hand, at maximizing the value of the public resources invested and, on the other hand, at promoting performance under the results-based management approach in the procurement of goods, services and works, so that these are carried out in a timely manner and under the best price and quality conditions, allow the fulfillment of public purposes and have a positive impact on the living conditions of citizens.

But, what does it mean to contract goods, services and works under the best price conditions? A price determined according to the procurement rules following the dynamics of the market value or contracting at the lowest price. In the present case, we will focus on the procurement of goods. In order to determine the estimated value of the goods, the regulations prescribe that the body in charge of procurement of public entities must make inquiries in the market. However, the regulations do not establish a methodology to be followed for this purpose. In fact, the Supervisory Body of State Contracting in its opinion No. 054-2017/DTN states:

The State contracting regulations have not determined which sources must be used -and, consequently, neither has it determined the minimum number of these-, to carry out the market inquiries, therefore, the body in charge of contracting must decide the sources to be used to determine the estimated value, always taking into account that

the information to be used for such purpose, must be regarding goods or services that are similar to the requirement.

However, what the market inquiry must contain is the analysis of the plurality of brands and bidders, as well as the possibility of distributing the bid and, in the event that there is only one brand in the market, such analysis includes a plurality of bidders. In other words, the body in charge of contracting decides at its discretion which sources (quotations, budgets, portals or web pages, catalogs, historical prices, cost structure, among others) it will use to determine the estimated value of the goods, even though only one source, for example, quotations, may be the most used in the market research.

Discretionary acts must be understood as established by the Constitutional Court in its judgment of file N° 009-2004-AC/TC of July 5, 2004, §5.8 - Callegari case. Indeed, the Constitutional Court states that in these cases "[...] the administrative entities are free to decide on a specific matter since the law, in a broad sense, does not determine what they must do or, failing that, how they must do it" (emphasis in the original). In other words, the Constitutional Court refers to a freedom and a certain normative indeterminacy as elements of discretion.

Now, according to Guillén and Matute (2014), who rely on the study by Misas, Parra & López (2010), the discretionary decision adopted by public operators is closely linked to price heterogeneity [which] may occur as a consequence of several factors: i) deficient regulation to

determine the referential value and/or lack of criteria of the operator to choose the appropriate method to arrive at the true market value; ii) goods with different technical characteristics; iii) conditions inherent to the contracting; and iv) lack of competition. (Guillén & Matute, 2014, p. 139-140).

Although it is a discretionary act to conduct market inquiries, this act must comply with the parameters of reasonableness, proportionality and motivation aimed at a public interest; on the contrary, if it does not contain such criteria we would be under arbitrary action on the part of the operators of public entities.

For example, reasonableness and proportionality would not be complied with in market inquiries if they are based only on the study of quotations from intermediary companies to determine the estimated value, but never requested a quotation from an importing or specialized company that offers the same or similar goods.

The reasonableness and proportionality in the market inquiry would not be complied with either if the quotations used are from natural or legal persons related to each other, since this may generate that the price does not obey a true market value. Nor is this duty complied with when quotations are requested from companies that have no experience with the matter to be contracted.

The new question, then, would be the following: is it sufficient or efficient to conduct a market research based on a single source? Or are we at the mercy of the actions of logistics operators? It

should be pointed out that Peruvian government procurement should improve in terms of transparency of information regarding its preparatory acts. For example: they should publish in detail their sources, i.e., be transparent with regard to the information on who they quoted with (natural or legal persons), etc. This would be a good start for improvements in this regard, since the executive summary format published in the Electronic Government Procurement System (SEACE) is a mere formality.

Therefore, this research work proposes a methodology that, taking advantage of the data of the Electronic System of State Contracting (SEACE) and the costs of the goods that are imported, facilitates the establishment of reference price ranges, and that, in addition, alerts on risks in State contracting and informs if there has been a detriment to the State's assets.

• Application of the methodology

Personal Protective Equipment (PPE)

Since the emergence of Covid-19, the use of face masks is common in many countries around the world. It is one of the basic protective measures against the new coronavirus provided by the World Health Organization and the way in which the population tries to protect itself efficiently against the virus. At the same time, it is also indispensable for front-line personnel to have these implements. However, according to Gozzer (2020), the high demand for masks has generated shortages at national and international level. This leads to the search for other elements

that fulfill the same function in the face of a highly contagious disease. One alternative is the elastomeric respirator. The Center for Disease Control and Prevention defines it as follows in response to the question " What is a respirator?

A respirator is a personal protective device worn on the face or head and covering at least the nose and mouth, used to reduce the wearer's risk of inhaling hazardous airborne particles (including infectious agents), gases, or vapors.

The elastomeric respirator has certain advantages over its predecessor, such as being able to be reused without losing its shape after several uses. Its cost is higher than that of a disposable mask, but its useful life is also longer. For our analysis we will take the case of the award prices of elastomeric respirators. Figure 7 shows the prices of the different contracts awarded by the Peruvian State for elastomeric respirators, between May 21 and August 19, 2020."

The prices range between S/ 54.10 and S/ 890.00 per unit. It should be noted that the purchases made include different models and brands, which can generate a wide range of price fluctuations. This price diversity makes it difficult to establish a "reasonable" value for the purchase of this good.

Figure 8 shows the distribution of the data obtained from the SEACE platform for the bidding of elastomeric respirators. Applying the proposed methodology, we proceed to draw a regression line (blue line) that does not consider the 'outlier' value (circled in red in Figure 9). In this way, this data, above S/ 750.00, will not affect the estimation of the moving median. Finally, the calculation of the standard deviations will allow us to identify those prices in an overvaluation condition, which will be located outside the gray zone. It is important to mention some limitations of the analyzed case, such as the lack of updated information and the errors in the recording of information.

Figure 7: Awarded Prices for Respirators

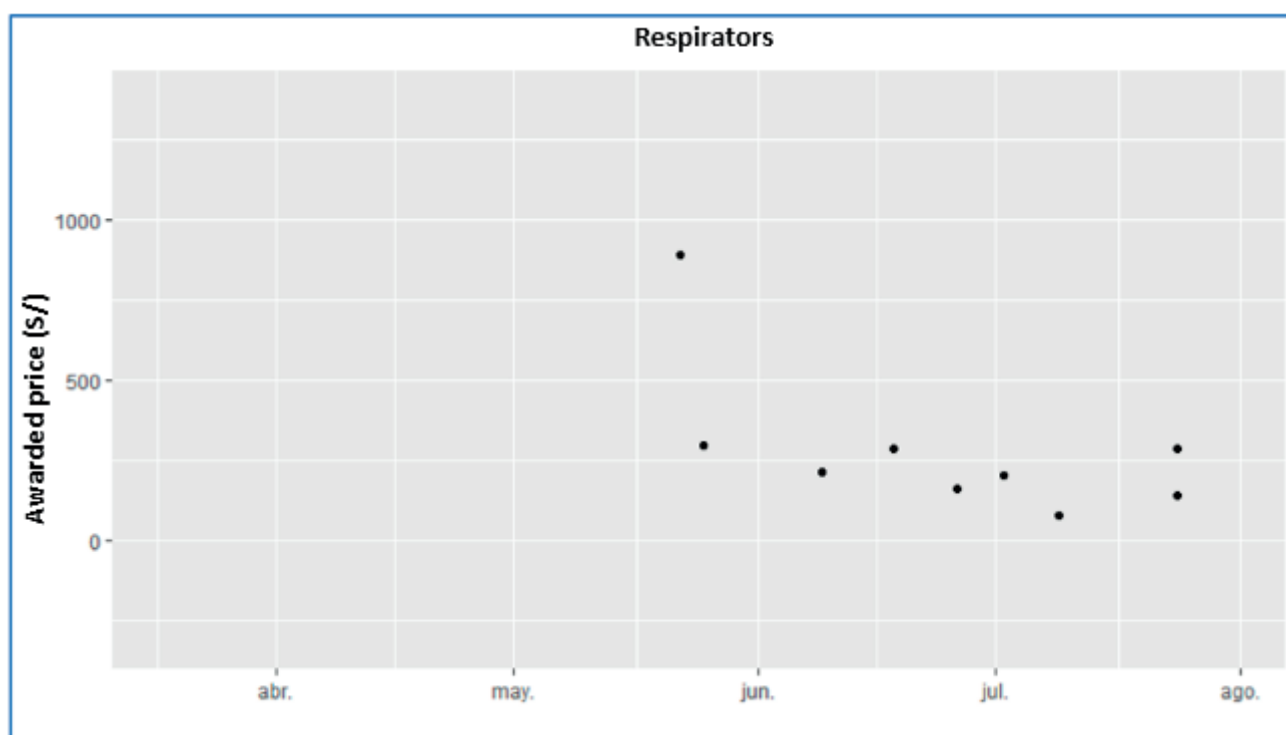


Figure 8: Awarded Prices for Respirators - Trend

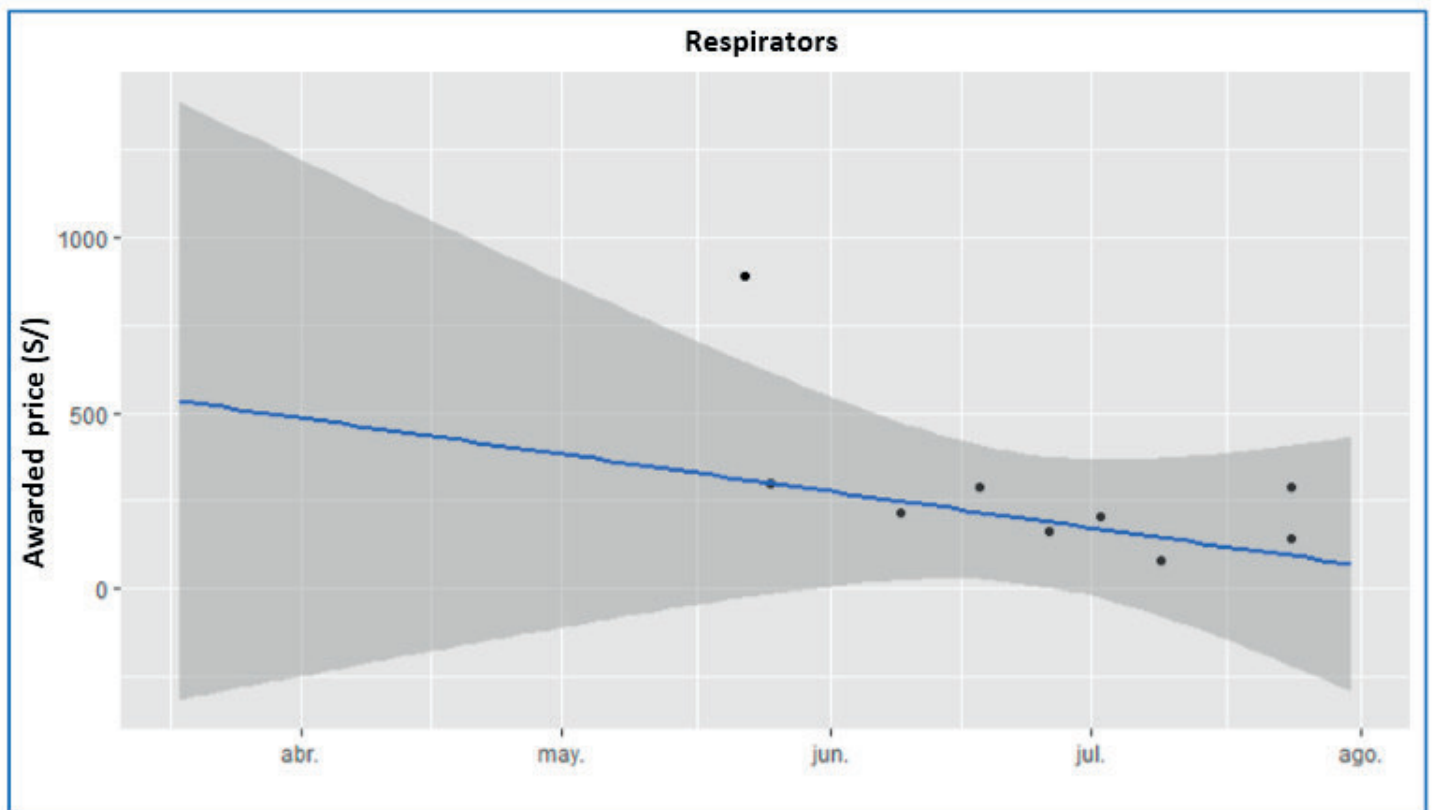
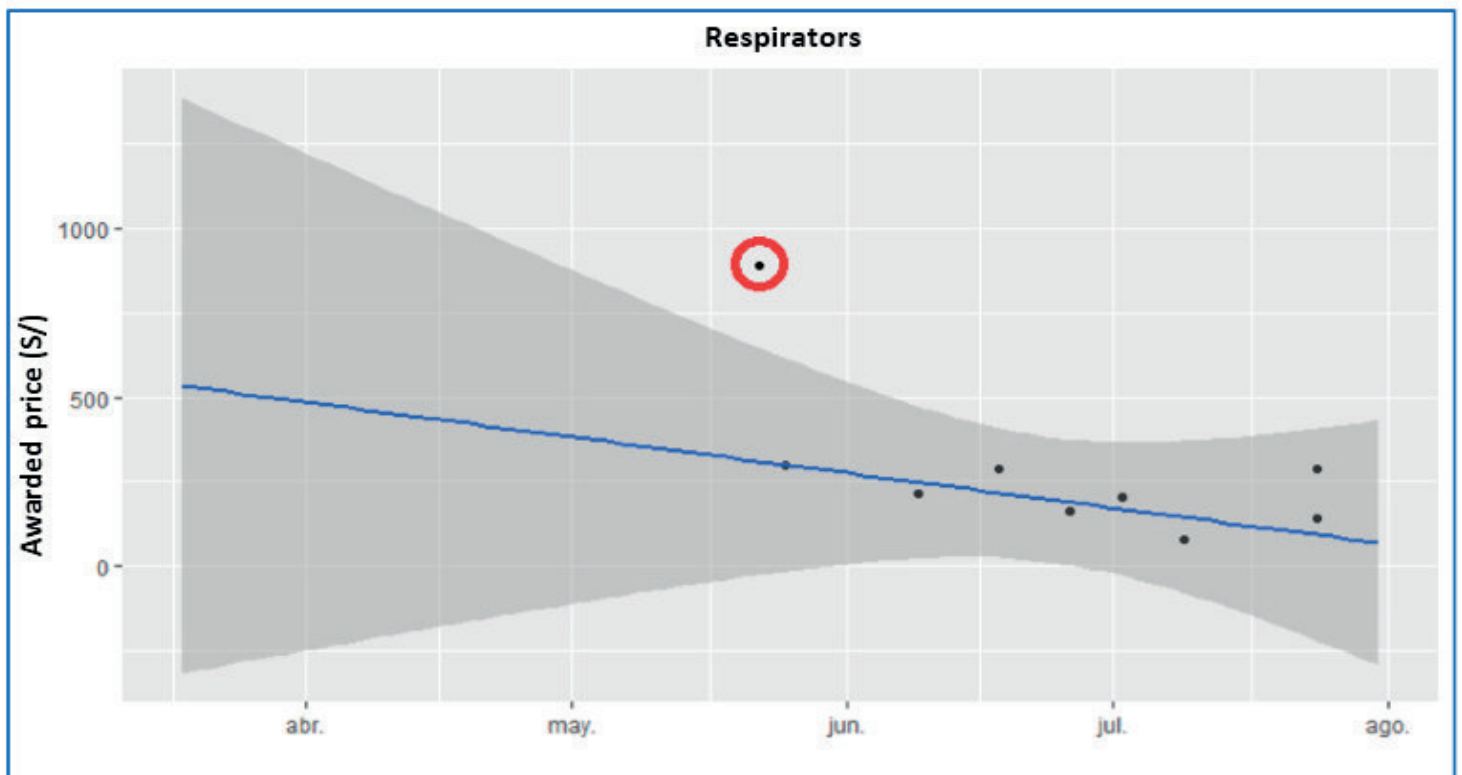


Figure 9: Awarded Prices for Respirators – Trend and Outliers



N95 Masks

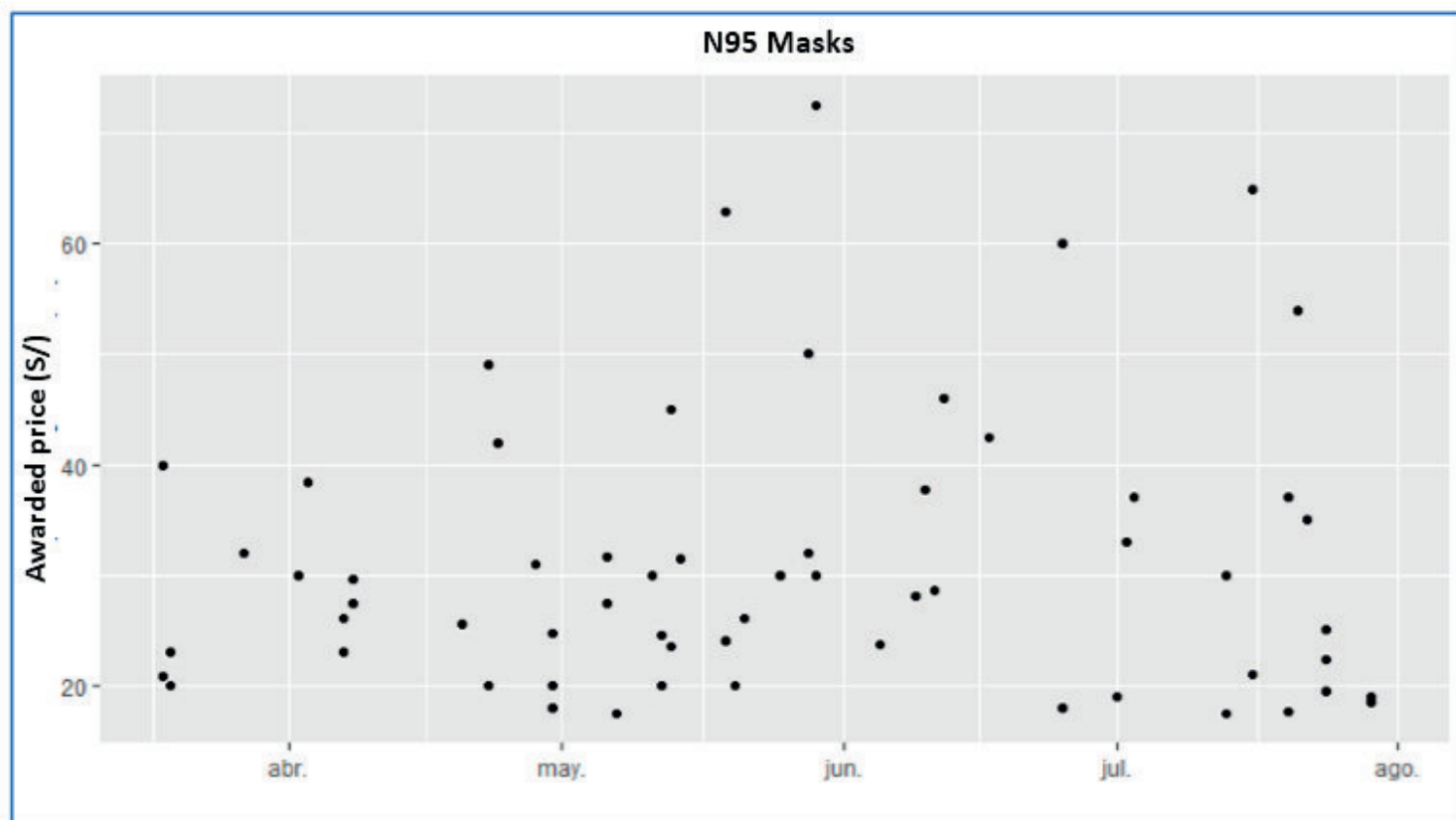
Let us analyze the case of award prices for N95 type masks. Figure 10 shows the prices of the different contracts awarded by the Peruvian State for N95 type face masks between March 18 and July 31, 2020. The prices range from S/ 17.50 to S/ 72.50 per unit. It is complicated, therefore, to establish what is the 'reasonable value' in a public bidding process in the face of such price disparity. Therefore, following the methodology proposed by the Secretaria da Controladoria-Geral do Estado de Pernambuco, Brazil (2020, p. 9), a statistical parameter is established to account for the concentration of prices in a given value.

For our analysis, the median value is considered to be the most appropriate

value to separate the values that are far from the area where the highest amount of prices is concentrated. Literature coming from economic theory analyzing values that are formed from different 'priors' takes into account the median value as the closest indicator to understand the phenomenon of price formation (D'Acunto et al., 2019, p. 18).

The Theil-Sen approximation (Theil, 1950 & Sen, 1968) is used to estimate a regression line that is not sensitive to outliers in a time series. In our case, the outliers are the prices set in the bids that are well above the prices at which an N95 mask is commonly offered. This can be seen above, in Figure 3, where the red circles indicate the outliers for the data in question. These values are above S/ 50.00, and if compared to the moving average estimate, it could be said that

Figure 10: Awarded Prices for N95 Masks



this is well above a reasonable value. The moving median is represented by the blue line.

At the same time, the graph shows standard deviations that are calculated

from this Theil-Sen approximation. Thus, all values above the gray area would be bids in an overvalued condition.

Figure 11

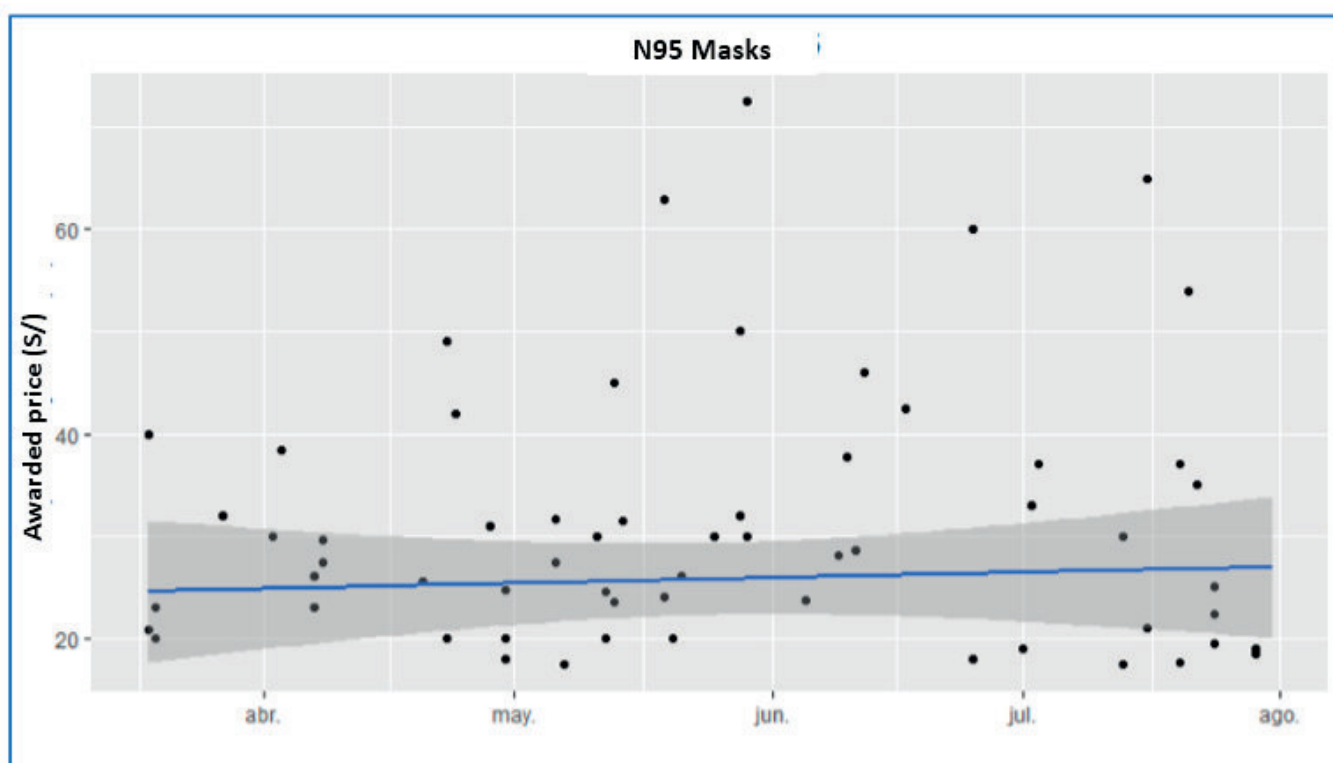
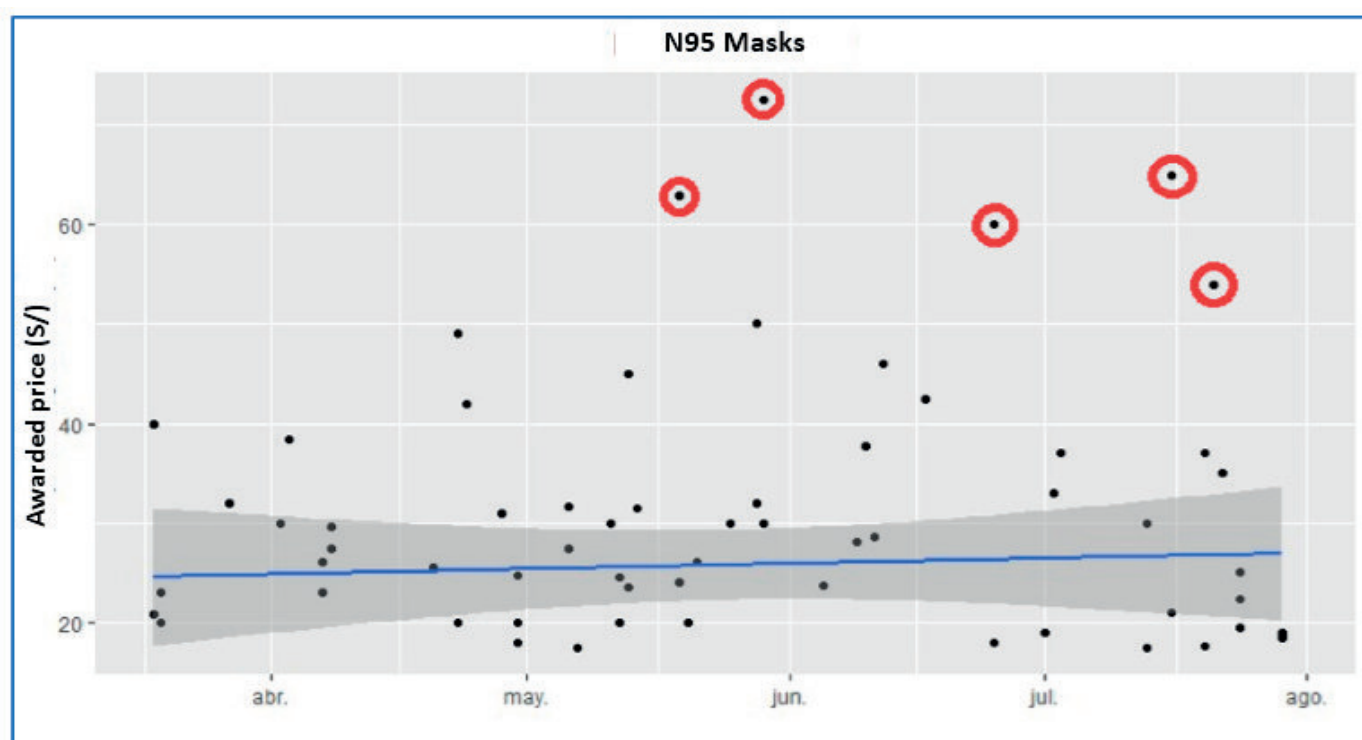


Figure 12

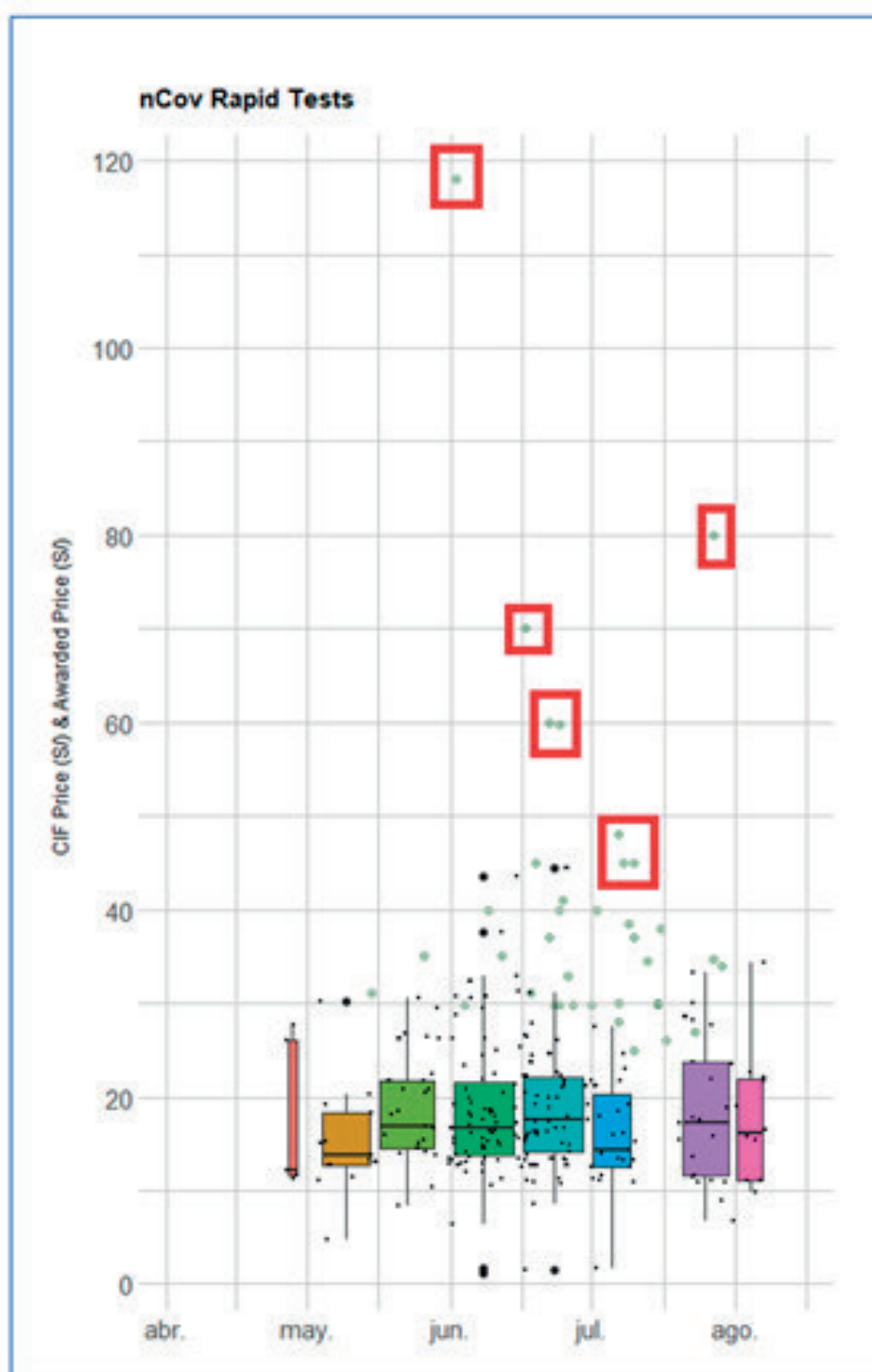


Rapid tests and import prices

Figure 13 shows both the relationship between adjudicated prices and import prices, as well as the price disparity

between the two institutional scopes. On the one hand, the CIF import prices are taken from the data page of the Peruvian customs authority, Aduanet, and show the values per unit of the rapid tests

Figure 13: Awarded prices vs. import prices



between the beginning of April and the first half of August. They are the small black dots.

On the other hand, the awarded prices are taken from the data page of the Peruvian procurement authority, SEACE, and show the values per unit in the State procurements that involved the purchase of Covid-19 rapid tests. They are the mustard green dots in the figure.

The prices formed in the market have a lower value than those formed in public tenders. Risks inherent to Peruvian public management such as payment delays, bureaucratization of procedures and risk of default by the state agency generate this strong disparity.

In any case, there are award prices substantially different from those observed in the market. These prices are indicated in the graph in the bright red boxes.

According to the proposed methodology, these institutions would have a cost overrun problem, since their award prices would be well above the market value. At the same time, these values are above the award values of other institutions in the same period.

The resulting cost overrun calculation amounts to S/ 276,598.00 (USD 79,785 at the exchange rate in the analysis period).

Estimated economic damage

The economic loss has been calculated taking into account the distance between the awarded price and the price that the good would be expected to have in relation to the expected moving average. As indicated, this moving average is obtained by estimating a regression using the Theil-Sen method.

Table 1: nCov Rapid Test, Economic Loss

	Public entity	Loss	Percentage
e1	Provincial Municipality of Atalaya	56,990	20,6%
e2	Provincial Municipality of Huaraz	19,210	6,9%
e3	Municipal Health Facility	30,490	11,0%
e4	District Municipality of Cerro Colorado	9,230	3,3%
e5	Provincial Municipality of Huarmey	6,470	2,3%
e6	Regional Government of Amazonas	26,840	9,7%
e7	Provincial Municipality of Chepen	52,908	19,1%
TT		276,598	100,0

Consequently, the estimate of the overvaluation is determined by taking into account the price that was actually bid (and which generated a

disbursement by the State) and the shadow price estimated by the method presented in this article.

Table 2: N95 Masks, Economic Loss

	Public entity	Loss	Percentage
g1	Provincial Municipality of Callao	24,672	1,7%
g2	National Police of Peru	29,230	2,0%
g3	Regional Hospital of Moquegua	40,605	2,8%
g4	N II Registration Zone, Chiclayo Headquarters	21,873	1,5%
g5	Health Network N 1 Coronel Portillo	20,422	1,4%
g6	Regional Government of Ancash	44,840	3,1%
g7	Municipality of Jesus Maria	18,942	1,3%
g8	Armed Forces Command	14,878	1,0%
g9	Regional Hospital of Cajamarca	46,243	3,2%
g10	Regional Government of Junín	5,323	0,4%
g11	Regional Health Directorate of Ucayali	193,298	13,2%
g12	Regional Government of Ayacucho	30,421	2,1%
g13	Santa Rosa de Piura Hospital	82,119	5,6%
g14	Regional Health Directorate of Lima North	361,902	42,9%
g15	Casimiro Ulloa Emergency Hospital	95,932	6,6%
g16	San Juan de Lurigancho Hospital	26,944	1,8%
g17	San Martin Government	70,711	4,8%
g18	Regional Government of Cusco	63,906	4,6%
TT		1,462,266	100,0%

Table 3: Simple Masks, Economic Loss

	Public entity	Loss	Percentage
m1	National Police of Peru	517,236	15,5%
m2	Metropolitan Municipality of Lima	234,853	7,0%
m3	Office of the Comptroller General of the Republic	54,930	1,6%
m4	Regional Government of Puno	10,702	0,3%
m5	Air Force of Peru	23,387	0,7%
m6	Regional Government of Madre de Dios	68,704	2,1%
m7	Regional Government of Ancash	74,277	2,2%
m8	National Customs Superintendence	42,424	1,3%
m9	Regional Government of Moquegua	29,785	0,9%
m10	Provincial Municipality of Huamanga	57,880	1,7%
m11	Regional Government of Lima	103,902	3,1%
m12	Lima-Callao Urban Transportation Authority	845,665	25,3%
m13	National Water Authority	23,294	0,7%
m14	Directorate of Health Networks Lima North	316,544	9,5%
m15	Regional Government of Pasco	26,788	0,8%
m16	Superior Court of Justice of Cusco	27,902	0,8%
m17	Provincial Municipality of Islay	38,009	1,1%
m18	Water and Sewerage of La Libertad	10,043	0,3%
m19	Ministry of the Environment	105,526	3,1%
m20	Regional Government of La Libertad	24,561	0,9%
m21	Regional Government of Tumbes	15,062	0,5%
m22	Santa Rosa de Piura Hospital	55,826	1,7%
m23	Regional Government of Huancavelica	406,819	12,2%
m24	Program against Sexual and Family Violence	187,028	5,6%
TT		3,345,683	100,0%

Conclusions

- a. The health emergency caused by the Covid-19 disease has put the region's health systems to the test, creating the need for governments to respond with creative proposals to reduce the economic, social, and expansionary impact of the health crisis.
- b. At the same time, by making resources available in the face of the pandemic, the risk of acts of corruption and functional misconduct is increased, given the enormous resources that were mobilized to confront the pandemic.

- c.** In the case of the Peruvian supreme audit institution, concurrent controls have been developed to monitor the processes and procedures of public entities within the framework of the sanitary emergency.
- d.** Complementarily, in order to optimize the human and financial resources at its disposal, it is necessary to use statistical and data intelligence tools to produce control reports in a quick and timely manner.
- e.** Consequently, this paper proposes a methodology to identify indications of overpricing in government procurement of products that were in high demand during the pandemic, especially personal protective equipment and Covid-19 diagnostic tests.
- f.** Although the findings of the method applied are encouraging, since it is possible to calculate the economic loss due to the alleged overvaluation, the methodology is limited in analyzing the reasons why such overvaluation occurs.
- g.** It is therefore necessary to cross-check information with other databases to determine whether this potential overvaluation is the result of functional misconduct, market problems of the goods to be acquired through contraction or poor public management in the handling of resources.
- h.** The methodology is more precise with respect to the amount of data available for the reliability of its results and conclusions: the number of procurements necessary to achieve a reliable statistical analysis. Herein lies the need for data traceability among state institutions to share systematized, user-friendly, and timely information: it is necessary to start from the principle that the greater the number of known data, the greater the precision in the results of the proposed methodology.
- i.** This work could be the beginning of a fruitful line of research to be able to calculate the economic loss on the matter and to investigate the reasons that cause it.

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COLOMBIA, THE ROLE OF THE CGR IN THE FIGHT AGAINST COVID-19 AND PANDEMIC-RELATED CORRUPTION

Abstract: The coronavirus pandemic is a global problem that is being addressed through the implementation of various packages of phytosanitary and socioeconomic measures at the local level. The preservation of public health as a fundamental premise, brought with it the temporary paralysis of the economy, and as a result, a deepening of the main problems of the countries that make up the Latin American and Caribbean Organization of Supreme Audit Institutions (OLACEFS). The Colombian State, invested with extraordinary powers granted to it to face the crisis, adopted a series of provisions to mitigate its effects, among them the centralization of spending through a transitory entity. This document briefly describes the use of resources spent by the Government to face the pandemic, and the challenges this entails for the Office of the Comptroller General of the Republic -CGR- as the highest fiscal control body in the country. The recent update of the fiscal control model in the Colombian case provided the CGR with additional competencies that allowed it to exercise a more efficient follow-up, reducing the risk of irregularities in the management of public resources. Despite the above, there are still limitations in the actions of this agency, particularly in relation to the promotion of citizen control.

Keywords: COVID-19, public resources, corruption, Office of the Comptroller General of the Republic, FOME

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The Coronavirus pandemic

Six days after the confirmation of the first case of COVID-19 in Colombian territory, the Ministry of Health and Social Protection declared a state of health emergency in the country, ordering a series of measures and provisions to control the spread of the virus and mitigate its effects (Resolution 385 of 2020, March 12, 2020).

Previously, the World Health Organization -WHO- had urged States to take urgent and decisive action in the face of this public health emergency, declaring it of international importance, urging the adoption of mechanisms for action through an approach based on the participation of society and all government institutions, in order to contain its spread and mitigate its effects (Opening address by the WHO Director General at the press conference on COVID-19 held on March 9, 2020).

By September 2020, five (5) of the ten (10) countries with the highest number of confirmed coronavirus cases in the world belonged to OLACEFS (Ugarte, 2020). The 22 member countries together had nearly nine million infected people, 85% of which are concentrated in Brazil, Colombia, Peru, Mexico and Argentina (Worldometer, 2020).

In addition to the health and containment challenges brought about by the COVID-19 pandemic, it arrived in Latin America and the Caribbean at a time when the region was already facing major social upheavals due to vulnerable macroeconomic scenarios, characterized by low growth rates, high levels of informality and unemployment, and growing volumes of public debt that threatened to restrict the governments' capacity for maneuver and response (OECD, 2020).

As Elgin et al. (2020) point out, the reduced fiscal space and limited public revenues available to Latin American countries represent a challenge in dealing with the socioeconomic consequences of the coronavirus crisis. At the current juncture this challenge could be magnified by the phenomenon of corruption, a major concern for Latin American Nations (Pring, 2017).

In this scenario, oversight and accountability mechanisms are necessary to ensure that governments take stock of actions taken during the crisis (OECD, 2020). Public administrations must put safeguards in place to ensure that emergency measures are implemented within the legal framework and the rule of law, and supreme audit institutions must, more than ever, amplify efforts to identify potential risks arising from the policies adopted, as well as increase their capacity to respond to possible deviations and streamline channels of communication with civil society in favor of transparency in the use of public funds (UN, 2020).

Measures taken by the Colombian government to address the crisis

The imminent escalation of the coronavirus worldwide and the insufficient ordinary powers of the Colombian state authorities to mitigate its effects, required the implementation of extraordinary measures by the executive to address the crisis. Thus, by virtue of the powers granted by the application of Article 215 of the Political Constitution of Colombia, a State of Economic, Social and Ecological Emergency was declared in the national territory (Decree 417 of 2020, March 17, 2020).

Said declaration endowed the executive with the necessary powers to issue an emergency regulatory body aimed at guaranteeing the effective enjoyment of the fundamental right to health and ensuring the volume of resources necessary to attend to the sectors most affected by the pandemic. One of the first and most relevant measures was the centralization of public order management decisions at the head of the President of the Republic, immediately and preferentially, on the provisions of governors and mayors (Decree 418 of 2020, March 17, 2020).

Given the nature of the crisis, under the premise that countries with more robust health systems had been unable to respond to the rapid transmission of the virus and based on epidemiological estimates by the Ministry of Health, the Government opted to order mandatory preventive isolation or quarantine for an

initial period of 19 days, which was extended until August 31, 2020, in order to flatten the infection curve, thus relieving pressure on the health sector and allowing time for the expansion of the country's hospital capacity.

The total limitation to the free circulation of people and vehicles in the national territory during the quarantine and the abrupt collapse of the international price of oil did not take long to generate distortions in all sectors of the economic activity, which forced the issuance of 71 Decrees with economic implications to mitigate such impacts, which included measures to guarantee access to public services of electric energy and fuel gas for the vulnerable population, as well as economic incentives for workers and producers in the countryside to guarantee the supply of agricultural products and food security.

However, the most relevant decision to overcome the economic contraction was the creation of the Emergency Mitigation Fund (FOME), with the purpose of guaranteeing the necessary resources for health care and the mitigation of the negative impacts of the pandemic on productive activity and employment; this entity would be funded, among other sources, with municipal resources (Decree 444 of 2020, March 21, 2020).

This measure generated tensions between the National Government and the local administrations, which resented the use of these resources destined to the fulfillment of pension

obligations and the General Royalties System of the territorial entities, arguing that they reduced their capacity to maneuver in the face of the crisis.

Between April 5 and August 10, 2020, seven (7) Decrees¹ were issued appropriating a total of \$25.53 trillion pesos² for the FOME. As of September 21, 2020, of this \$25.53 trillion, the FOME had disbursed \$14.6 trillion, corresponding to 57%, while the remaining 43% remained unused, 5 months after the beginning of the pandemic. (Fiscal Observatory Pontificia Universidad Javeriana. [2020, September 21]. What has the pandemic money been spent on?).

Beyond the concerns derived from the mechanisms adopted by the executive to face the emergency, the use of the exceptional powers granted and the destination that the resources appropriated by the FOME could have by virtue of the regulations in force, the characteristics of the unique situation entail a varied inventory of risks that the Office of the Comptroller General of the Republic -as the highest fiscal control body in Colombia- cannot lose sight of.

Estimates of citizen groups indicate that about 85% of government procurement in times of pandemic was carried out under the modality of direct contracting, mostly justified on the grounds of manifest urgency (Ciudadanía activa, 2020). Although this mechanism makes the requirements for public procurement more flexible and agile, at a time when

1 Decrees 519, 571, 572, 774, 885, 1105 and 1106 of 2020

2 Approximately US\$6,615 million. Reference exchange rate of September 28, 2020.

speed is required, it also represents a greater vulnerability to corruption practices by eliminating the plurality of bidders, publicity and objective selection (D'Angelo & Maestre, 2017).

On the other hand, during the first four months of the crisis, the opaqueness in the management of public resources allocated for its attention was strongly questioned, as well as the existing disparities between the speeches of government representatives in relation to the amounts allocated to solve the crisis, and between these and the resources that could actually be traced. To date, although some strategies have been deployed to expand the amount of data accessible to the public, it is difficult to know the concrete magnitude of the resources actually allocated to fight the pandemic from the various fronts and budgetary mechanisms, since the information is fragmented in different places, with dissimilar cut-off dates that restrict the ability of the public to exercise an effective citizen oversight; The analysis of public data requires much more time and work than the average Colombian has at his disposal to contribute to the efficient management of the treasury (Fiscal Observatory of the Pontificia Universidad Javeriana, 2020a,b,c).

One of the main sources of information for monitoring state actions is the Electronic Public Procurement System (SECOP), however, the quality of the information compiled there is poor, open text fields that give rise to typing errors, incomplete documentation, and the absence of markers that allow quick searches of contractual processes in the

framework of the pandemic, making it difficult for citizens to follow up and control the management of these resources (Ciudadanía activa, 2020).

However, given that the needs arising from the crisis required an immediate expenditure (arguments that justified, among other things, the declaration of emergency), it was expected that most of the resources would be executed during the first months of the pandemic, however, as previously noted, five months after the beginning of the pandemic, only a quarter of the resources allocated to the FOME had been obligated and paid, which calls into question the timeliness and effectiveness of the disbursements that occur with greater delay.

The strategy of the Office of the Comptroller General in response to the crisis

During 2019, the CGR received with delight -but above all with great expectation- new powers and competencies, within a new fiscal control regime, on the occasion of the issuance of Legislative Act 04 of 2019.

This regulation emanating from Congress -and which amended Article 267 of the Political Constitution- added, among other things, the concomitant and preventive control to the already existing modality of ex-post and selective control, thus expanding the field of operation of this auditing institution, in the exercise of its constitutional mission (Legislative Act 04 of 2019, September 18, 2019).

It also introduced substantive considerations in relation to the fiscal punitive powers of the CGR and constitutionally authorized it to exercise judicial police functions, while empowering it in a prevalent and preferential manner over other fiscal control bodies to follow up on the management of any territorial entity (Legislative Act 04 of 2019, September 18, 2019).

With a view to consolidate a functional scenario relevant to the new fiscal control model, Article 20 of the Legislative Act in question granted extraordinary powers to the President of the Republic to issue decrees with the force of law that resulted in a new organizational structure, with new offices and the expansion of the CGR's staff that enable greater specialization in the oversight of the State's fiscal management (Decree 403 of 2020, March 16, 2020).

Even though these legal changes took place before the pandemic started, the increase in the functions granted to the CGR a few months prior increased its response capacity, by granting it a set of tools that assume special relevance in a scenario in which immediacy is a key factor for the success of government policies, and therefore for the monitoring of the resources associated with them. The creation of the Directorate for Information, Analysis and Immediate Reaction (DIARI) was one of the most well-known ones.

Once the permanent monitoring mechanisms for public resources were

activated, provided for in Decree Law 403,³ with a view to monitoring fiscal management related to risk mitigation and virus containment, DIARI became the central axis of the strategy for monitoring the resources provided by the National Government for the COVID-19 emergency, within the framework of the special monitoring exercise provided for in Decree Law 267 of 2000.

As a complement, the Office of the Comptroller General required the authorizing offices of the national and territorial entities to report the administrative acts decreeing the manifest urgency and the information of the emergency plans to be executed, identifying the resources, the sources used and the actions to be carried out. (CGR Circular 06 of 2020, March 19, 2020).

Likewise, an alliance was created between the Office of the Comptroller General of the Republic, the Attorney General's Office and the Procurator General's Office, by virtue of which it was agreed to articulate the capacities of the three entities for the creation of a program of oversight and control which was called "Transparency in the Emergency". Within the framework of its competencies, each entity must verify the strict compliance of the measures decreed by the National Government, to carry out preventive actions for the adequate use of public resources, verify the compliance with the special conditions for overcoming the crisis, and act promptly to investigate and punish possible acts of corruption they

3 They were activated through Organizational Resolution 753 of 2020 of the Office of the Comptroller General, of March 19, 2020.

may find. This program was kick-started nationwide and prioritized procurements related to health, security and coexistence, education and social services and emergency response. (Office of the Comptroller General of the Republic 2020. [April 03, 2020.]. Boletín de Prensa 46 de 2020).

Together, these strategies resulted in the issuance within the first two months of 396 early warnings about alleged cost overruns of around \$506 billion pesos in 26 out of the 32 Governorships, and in 67 municipal and district mayor's offices, as well as 2 fiscal responsibility processes and the opening of several preliminary inquiries on alleged cost overruns in procurements for the delivery of food kits for vulnerable population. Also the functional intervention on 132 contracts for an amount near \$300.000 million pesos (Office of the Comptroller General of the Republic 2020. [s.f.]. Boletines de Prensa 2020).

The notable interest of the citizens about the use of the resources to deal with the COVID-19 crisis exposed the limited access to information that they have as a matter of course. The haste with which the resources must be used in the midst of this emergency situation means that there is no proper publicity of these actions on the part of their executors, and therefore, that part of the transparency that must rule all activities of the State to be lost. The ICTs are a fundamental vehicle for this and the CGR has already moved in this direction, as can be inferred from the comments above.

However, one of the great weaknesses of the control and oversight of the resources to face the coronavirus

in Colombia lies in the access to information by citizens. Even though people are encouraged through institutional social media accounts and through the media to report instances of corruption, embezzlement, or situations that put the national patrimony at risk; using the online channels implemented in the entity's website, no information is made available to the public that may facilitate citizen oversight. It seems that the Office of the Comptroller General acknowledges the importance of direct communication with the community, but it favors a single channel, as a source and not as a destination.

In addition to the information that citizens receive on the actions and results of this SAI, it is imperative that they have the tools to accompany and strengthen the exercise of fiscal control. The Office of the Comptroller General is a key agent to cover this link, which today is fragmented, and for this purpose it must implement strategies that allow it to share information with the citizens -to which it has access by competence- through participatory fiscal control mechanisms, thus multiplying human resources in the execution of monitoring and control at all levels of government agencies that use emergency resources, minimizing the risks of corruption and the inefficient use of public funds.

As noted by the UN (2020), in the context of the pandemic, governments should "proactively publish information on the coronavirus outbreak and on their responses, in accessible formats and through multiple channels, taking advantage of the potential of the ICTs, considering the needs of specific groups and vulnerable and at-risk populations"(p.24).

Conclusions

The Colombian central government took a series of measures in the area of health in order to prevent the spread of the COVID-19 virus contagion in the national territory. These decisions, necessary to protect the fundamental right to life, generated economic contractions that forced the implementation of policy strategies in order to mitigate the socioeconomic impacts derived from the crisis; one of the most relevant was the creation of the FOME as a centralizing instrument for spending in times of pandemic. In addition to the initial criticisms regarding the origin and destination of the resources of this fund, social grievances have been added regarding the lack of transparency in its operations and its poor execution six months after the onset of the crisis.

In this environment, the model adopted by the CGR in the framework of Legislative Act 04 of 2019, facilitated real-time control of the resources allocated to the most affected sectors, permanently monitoring the measures and policies adopted by the Government when decreeing the state of economic and social emergency.

Despite the expansion of the CGR's constitutional powers and the timeliness of some inter-institutional measures implemented, weaknesses and limitations have been identified in relation to citizen access to information that reduce the effectiveness of fiscal control. Although the role of the Office of the Comptroller General of the Republic has been fundamental in the oversight and control of the resources spent for the crisis, the expansion of

information transparency through official channels using ICTs will enable the optimization of its results, at a time when corruption will want to take advantage of the fact that state actors are focused on providing emergency assistance.

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