

## **Paper 2596-2018**

### **Indication of irregularities in the accumulation of public jobs in the State of Ceará (Brazil).**

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#### **ABSTRACT**

About 8 million dollars a month. This is the volume of financial resources that the State of Ceará (Brazil) is saving monthly, with the implementation of data analysis and analytical intelligence project to identify irregularities (fraud) in the accumulation of public posts of its servers, using the SAS® Fraud Framework for Government solution. This work will present the methodology and procedures used with the implementation of SAS software solution, which will allow a saving of more than one million dollars per month to the public coffers of the State of Ceará, as well as several results from the application of analytics in the TCE-Ceará, state of Brazil.

#### **INTRODUCTION**

The Court of Audit of the State of Ceará (TCE-Ceará) is the public institution responsible for controlling public assets and resources of the State of Ceará, promoting ethics in public management in order to guarantee the full exercise of citizenship of the population of Ceará. It has the constitutional competence to supervise and judge the good and regular application of public resources by administrators and other officials, assisting the State Legislative Assembly in the exercise of external control.

#### **THE BUSINESS PROBLEM**

In general, the public official of the State of Ceará can not work in more than one public office. Exceptions exist, such as the constitutional provision for Teachers and Health Professionals to accumulate up to two (2) public positions, since they prove the compatibility in the workload (maximum of 60 hours a week).

However, it has been found that several public officials are circumventing this rule and working in other institutions, public or private, with a workload higher than allowed by law, which damages the provision of public services to society.

Thus, the purpose of this article is to verify the accumulation of positions, jobs and public functions within the scope of all public entities of Ceará under the jurisdiction of this Court.

In order to achieve the stated objective, the following audit question was formulated:

Are there public agents in the public entities under the jurisdiction of Court of Audit of the State of Ceará (TCE-Ceará) accumulating positions, jobs or public functions in disagreement with the criteria established in the legislation and in the jurisprudence pertinent to the subject?

## HOW TO IDENTIFY THIS TYPE OF FRAUD

For the identification of possible indications of irregularities related to the accumulation of public positions, jobs and public functions, the following bases were used for October 2016: Relation Annual Report on Social Information (RAIS), Executive, Legislative and Judicial Branches of the State of Ceará, Attorney General's Office (PGJ-CE), Public Defender's Office (DPE-CE), Municipal Court of Accounts (TCM-CE) and the Municipal Information System (SIM).

## SAS TECHNOLOGIES USED

The Court of Audit of the State of Ceará made an acquisition of the SAS® Fraud Framework for Government solution and through the guide's SAS® Enterprise Guide® tool developed all the investigations aimed at identifying possible illicit accumulations committed by public agents of the State of Ceará.

The methodology used to reach the results observed the following steps:

### **1ª) Study of the theme (literature review)**

In order to better address the problem of the accumulation of public offices in the State of Ceará, a study was made of: i) the national and state legislation pertinent to the topic; ii) of jurisprudence in the Judiciary and in the other Courts of Account in Brazil; iii) of the understanding within the scope of this Court of Accounts. Finally, in order to align the work with the ECA-EC Audit Unit responsible for continuing the audit with the field work, a number of dialogues took place with the ECA-EC development of the work.

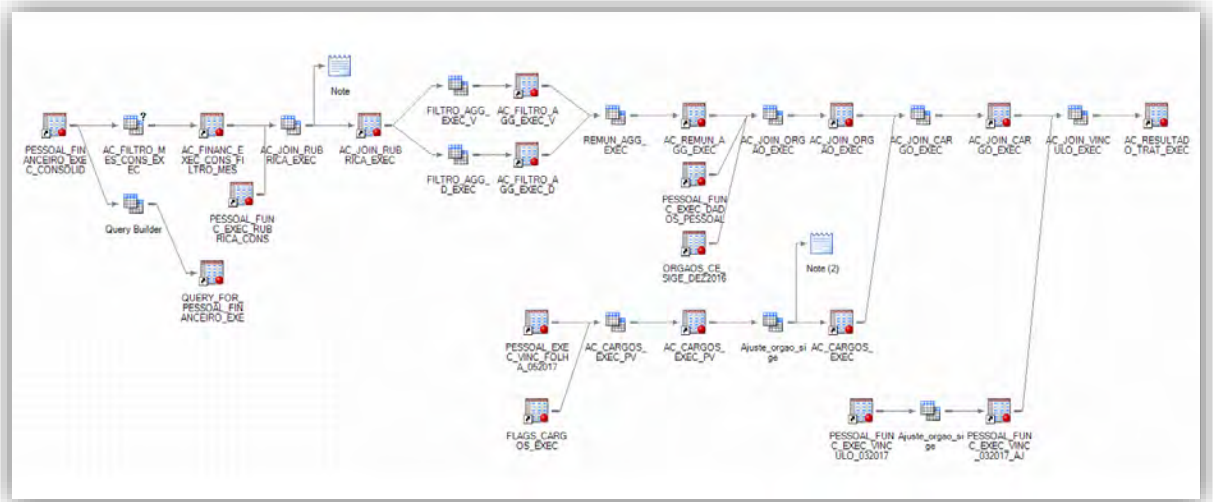
### **2) Definition, collection, reception and organization of databases**

After the study of the subject and the definition of the best approach to the problem, it was defined which data sources were essential to the work, and who were the holders of this information. Once the Jurisdiction was notified to submit the information (an inherent power of the Account Cuts), a computerized environment was prepared to receive and organize the presented data.

### **3ª) ETL (*Extract, Transform, Load*) das bases de dados (Figura 1)**

Given the heterogeneity of the sources of this information, each database underwent an extensive ETL process (70% of effort), which aimed to: improve information quality, standardize formats, standardize fields, exclude duplicities, etc., taking care to minimize the loss of information.

**Figure 1 - Example of ETL in databases**

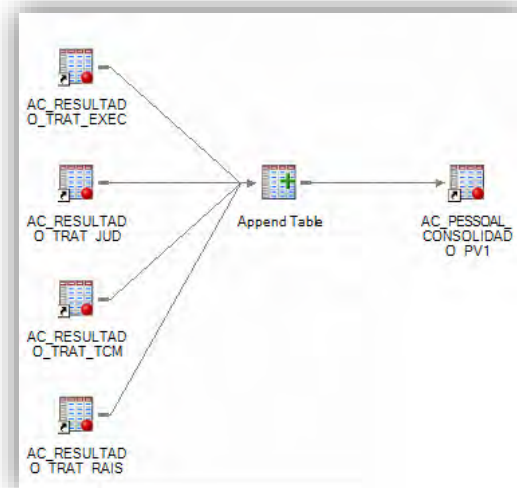


Source: Prepared by the author.

**4) Consolidation of the data processed (Figure 2)**

In this step, the various data obtained, after the ETL process, were compiled in a single database, allowing a better analysis of the employment links by public agent.

**Figure 2 – Consolidation of the data processed**

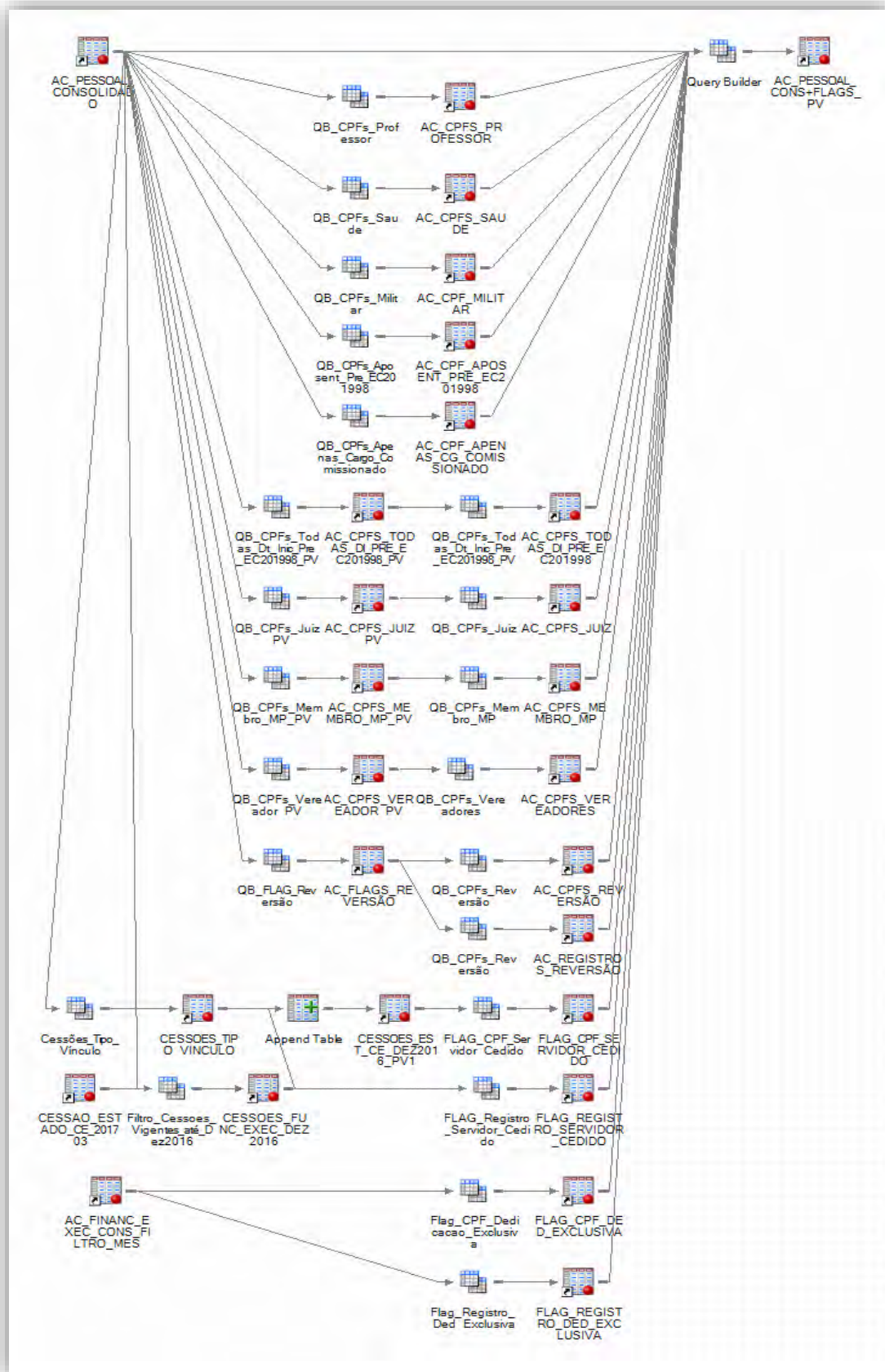


Source: Prepared by the author.

**5ª) Insertion of consolidated flags and filters per server (Figure 3)**

The consolidation of the databases in the previous stage made it possible to increase the information consolidated by Individual Registry (CPF) to the registries, such as flags identifying, the servants teachers, health area, military, retirees, judges, prosecutors, etc. Cases of servants assigned to work in other public agencies were also identified.

**Figure 3 – Example of insertion of consolidated flags and filters by public server**



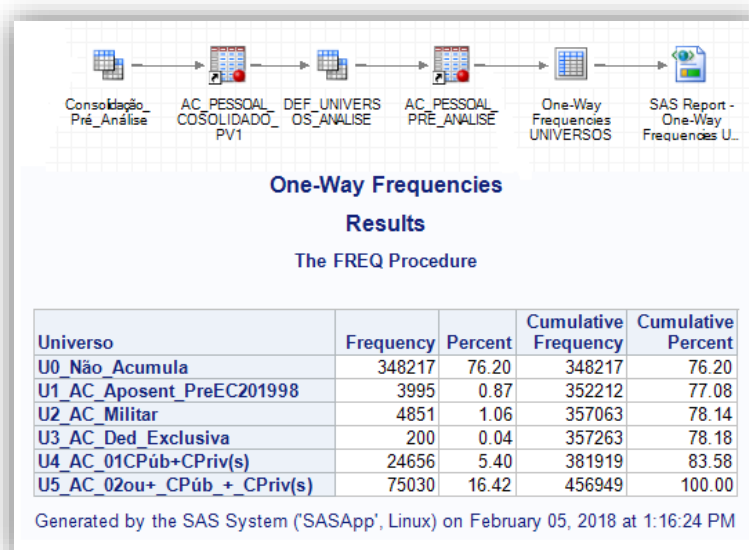
Source: Prepared by the author.

## 6) Categorization in "groups" to optimize the analysis (Figure 4)

Categorization in groups was necessary for a better application of the rules on the accumulation of positions (legislation, jurisprudence and understandings). The process followed a logical sequence in which, as the server fit the profile of a particular group, it would no longer compose the remaining data basket. Below is a description of the groups created:

- a) **Group 00:** Servers that do not hold public office. Such records were taken for the purposes of accumulation analysis;
- b) **Group 01:** Servants who accumulate public positions, however, in at least one of them, retired before Constitutional Amendment no. 20/1998. This group has as its characteristic to have more flexible rules of accumulation of positions according to legislation.
- c) **Group 02:** Servers who accumulate public positions, however, in at least one of them, it is a military position. In this case the rules of accumulation of positions are more rigid, in view of the legislation to provide for the military an exclusive devotion and total availability in the work activity, having more specific rules;
- d) **Group 03:** Servers who accumulate public positions and, in at least one of them, receive an additional remuneration on account of the exclusive dedication to the organ that employs it. In this situation, however much it fits into the allowed accumulation rules foreseen in the CF / 1988, the server can not accumulate charges.
- e) **Group 04:** Servers who accumulate 01 (one) public position with 01 (one) or more positions in the private sector. Although there was no legal impediment to such accumulation, the analysis for these cases was limited to the assessment of the weekly workload, seeking to assess a possible compromise in the quality of the public service rendered. It should be noted that this group was not used for the purpose of estimating savings to the public sector.
- f) **Group 05:** Servers that accumulate 2 (two) or more public positions, with or without private positions, that were not present in the previous groups. These are the remaining cases of accumulation, for this group will be applied all the rules of analysis of accumulation of charge.

**Figure 4 – Segregation in "groups" to optimize the analysis**



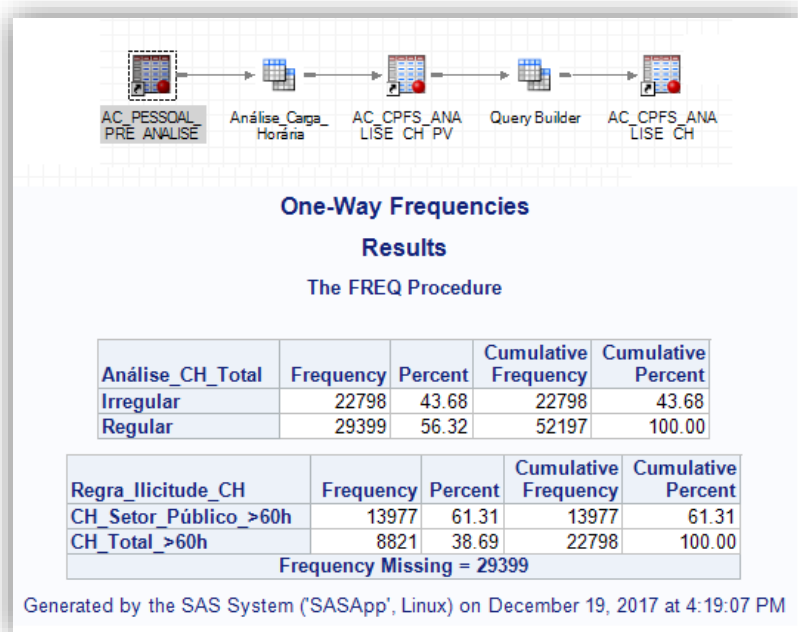
**Source:** Prepared by the author.

### 7ª) Analysis of the Hourly load accumulated by public servant (Figure 5)

In this stage the phase of irregularities analysis was effectively started. As regards the "weekly working hours limit", State Decree No. 29.352 / 2008, which establishes that the public servant "can not exceed the maximum working load of 60 (sixty) hours of work per week in both positions, jobs or functions".

It was decided to segregate the illicitudes observed in: i) Hourly load above 60 hours per week in the public sector; ii) Total Hourly Charge above 60 hours per week (public and private sector). It should be noted that in the first case, the servers violate the law, while in the second case there is a strong indication of a compromise in the quality of the public service provided.

**Figure 5 – Analysis of the Hourly Load accumulated by public servant**



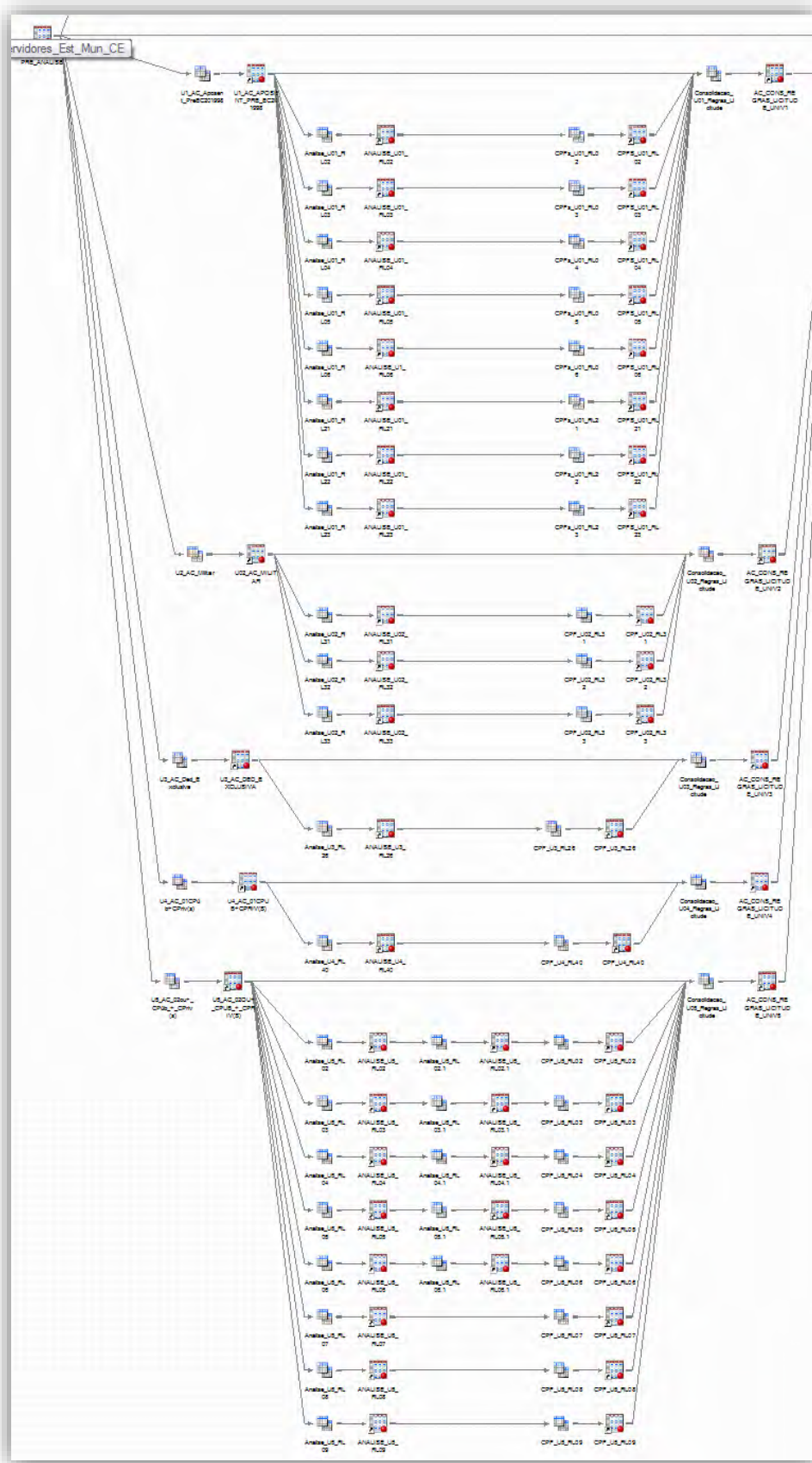
**Source:** Prepared by the author.

### 8ª) Identification of Licit Accumulations (Figure 6 and 7)

Faced with the fact that "accumulation of positions" is the exception, it was chosen to identify in the "accumulation universe" those that meet the prerequisites of the law, and are then considered to be lawful accumulation of public positions. This approach methodology proved to be quite satisfactory considering the complexity and capillarity of rules and exceptions applicable to the theme. With each new rule of lawful accumulation applied to the database, the result obtained was a set of remaining records with a higher percentage of accuracy in the identification of accumulations considered illicit. Another advantage observed is the possibility of continuous advance of the identification of licit accumulations and, consequently, of the progress of the degree of correctness of the irregularities.



Figure 6 – Identification of Licit Accumulations



Source: Prepared by the author.

**Figure 7 – Result of Licit Accumulations**

**One-Way Frequencies**  
**Results**  
The FREQ Procedure

Universe	Frequency	Percent	Cumulative Frequency	Cumulative Percent
U1_AC_Aposent_PreEC201998	3728	4.52	3728	4.52
U2_AC_Militar	2282	2.77	6010	7.29
U3_AC_Ded_Exclusiva	93	0.11	6103	7.41
U4_AC_01CPúb+CPriv(s)	24656	29.92	30759	37.33
U5_AC_02ou+_CPúb+_CPriv(s)	51647	62.67	82406	100.00

Regra_Licitude	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ac_01CPúb+CPriv	24656	29.92	24656	29.92
Ac_2_CPúb_Juiz+Magistério	24	0.03	24680	29.95
Ac_2_CPúb_Juiz+Magistério - Aposent_e_Dt_Inicio_Pré_EC201998	6	0.01	24686	29.96
Ac_2_CPúb_Juiz+Magistério - Servidor_Cedido-Máx_2_Cargos	4	0.00	24690	29.96
Ac_2_CPúb_Membro_MP+Magistério	8	0.01	24698	29.97
Ac_2_CPúb_Membro_MP+Magistério - Aposent_e_Dt_Inicio_Pré_EC201998	2	0.00	24700	29.97
Ac_2_CPúb_Prof+Tecn_Cient	4273	5.19	28973	35.16
Ac_2_CPúb_Prof+Tecn_Cient - Ac_2_CPúb_Saúde - Aposent_e_Dt_Inicio_Pré_EC201998	3	0.00	28976	35.16
Ac_2_CPúb_Prof+Tecn_Cient - Aposent_e_Dt_Inicio_Pré_EC201998	520	0.63	29496	35.79
Ac_2_CPúb_Prof+Tecn_Cient - Servidor_Cedido-Máx_2_Cargos	94	0.11	29590	35.91
Ac_2_CPúb_Professor	34435	41.79	64025	77.69
Ac_2_CPúb_Professor - Ac_2_CPúb_Prof+Tecn_Cient	238	0.29	64263	77.98
Ac_2_CPúb_Professor - Aposent_e_Dt_Inicio_Pré_EC201998	2467	2.99	66730	80.98
Ac_2_CPúb_Professor - Servidor_Cedido-Máx_2_Cargos	460	0.56	67190	81.54
Ac_2_CPúb_Saúde	10238	12.42	77428	93.96
Ac_2_CPúb_Saúde - Aposent_e_Dt_Inicio_Pré_EC201998	40	0.05	77468	94.01
Ac_2_CPúb_Saúde - Servidor_Cedido-Máx_2_Cargos	36	0.04	77504	94.05
Aposent_2º_Cargo_Apenas_Comissionado	8	0.01	77512	94.06
Aposent_Pré_EC201998-01CPúb+CPriv(s)	162	0.20	77674	94.26
Aposent_e_Dt_Inicio_Pré_EC201998	379	0.46	78053	94.72
Aposent_e_Dt_Inicio_Pré_EC201998 - Aposent_Pré_EC201998-01CPúb+CPriv(s)	26	0.03	78079	94.75
DE_Aposent_ou_Ag_Aposent	93	0.11	78172	94.86
Militar_Cedido-Máx_2_Cargos	1384	1.68	79556	96.54
Militar_Cedido-Máx_2_Cargos - Militar_Instrutor-Máx_2_Cargos	22	0.03	79578	96.57
Militar_Instrutor-Máx_2_Cargos	116	0.14	79694	96.71
Militar_Reversão-Máx_2_Cargos	760	0.92	80454	97.63
Servidor_Cedido-Máx_2_Cargos	1922	2.33	82376	99.96
Servidor_Cedido-Máx_2_Cargos - Servidor_Instrutor-Máx_2_Cargos	6	0.01	82382	99.97
Servidor_Instrutor-Máx_2_Cargos	24	0.03	82406	100.00

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**Source:** Prepared by the author.

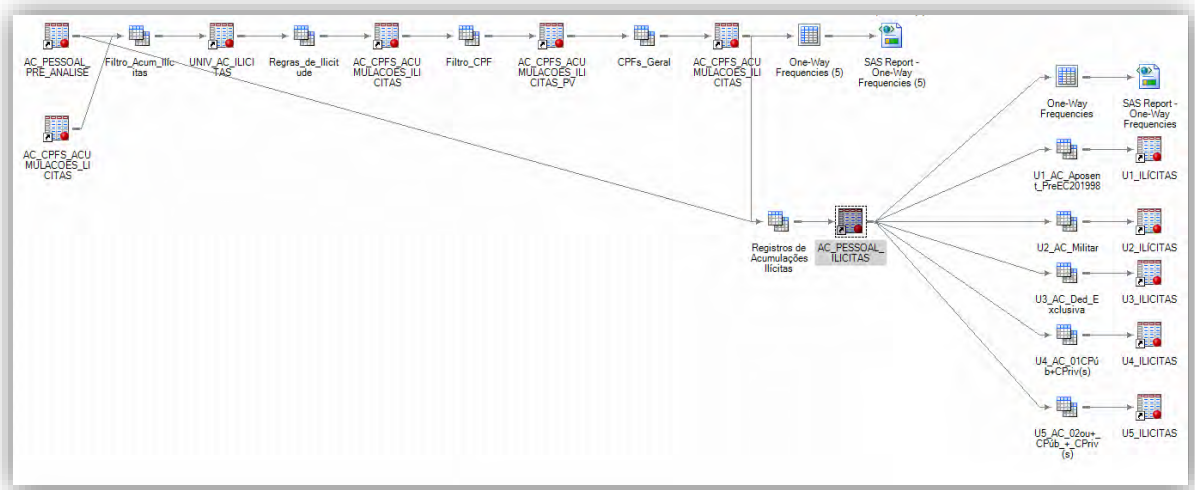
### 9ª) Identification of the Accumulations of Illicit Charges (Figure 8 and 9)

As explained above, the process of identifying unlawful accumulations was by exception, that is, the legal accumulations were identified, it is concluded that the other accumulations are illegal. At this stage, the observed illicit accumulations received the following classifications:

- i) Accumulation of 01 (one) public position with private position (s);
- ii) Accumulation of two (2) unaccountable public positions;
- iii) Accumulation of two (2) unaccountable public positions with private position (s);
- iv) Accumulation of three (3) unaccountable public positions;
- v) Accumulation of three (3) non-cumulative public positions with private position (s);
- vi) Accumulation of four (4) unaccountable public positions;
- vii) Accumulation of four (4) unaccountable public positions with private position (s);
- viii) Accumulation of five (5) unaccountable public positions;
- ix) Accumulation of five (5) unaccountable public positions with private position (s);
- x) Accumulation of six (6) or more unaccountable public offices;
- (xi) Accumulation of six (6) or more unaccountable public offices with private position (s);



**Figure 8 – Identification of Illegal Accumulations**



Source: Prepared by the author.

**Figure 9 - Result of Illegal Accumulations**

**One-Way Frequencies Results**  
The FREQ Procedure

Universo	Frequency	Percent	Cumulative Frequency	Cumulative Percent
U1_AC_Aposent_PreEC201998	176	1.49	176	1.49
U2_AC_Militar	456	3.86	632	5.36
U3_AC_Ded_Exclusiva	53	0.45	685	5.81
U5_AC_02ou+_CPúb+_CPriv(s)	11115	94.19	11800	100.00

Regra_Ilicidade	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ac_1CSPub_Inacumulável+CSPriv	33	0.28	33	0.28
Ac_2CSPub_Inacumuláveis	6878	58.29	6911	58.57
Ac_2CSPub_Inacumuláveis+CSPriv	342	2.90	7253	61.47
Ac_3CSPub_Inacumuláveis	3903	33.08	11156	94.54
Ac_3CSPub_Inacumuláveis+CSPriv	235	1.99	11391	96.53
Ac_4CSPub_Inacumuláveis	307	2.60	11698	99.14
Ac_4CSPub_Inacumuláveis+CSPriv	30	0.25	11728	99.39
Ac_5CSPub_Inacumuláveis	60	0.51	11788	99.90
Ac_5CSPub_Inacumuláveis+CSPriv	6	0.05	11794	99.95
Ac_6CSPub_Inacumuláveis	6	0.05	11800	100.00

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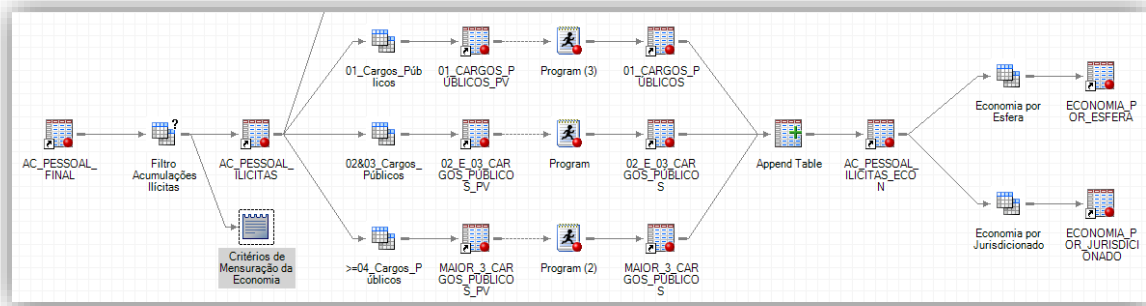
Source: Prepared by the author.

**10) Estimation of the economy (Figure 10)**

The purpose of the economy estimation is to measure the impact of this study on the public budget of the State of Ceará and, consequently, the financial return to society. The estimated value of the economy with the resolution of cases of illegal accumulation reached the amount

of R \$ 494,430,913.65 per year (US \$ 152.13 million per year). It should be noted that the figure is equivalent to 2.01% of the total budget of the State of Ceará (R \$ 24,583,017,972.03) in 2017.

**Figure 10 - Estimating the economy**



**Source:** Prepared by the author.

**Figure 11 – Results of the estimation of monthly savings within the jurisdiction**

Tipo_Ente	Ente_Consolidador	Economia	Qtde_CPFs	
1	Municipal	Município de Fortaleza	9.058.618,99	3.297
2	Estadual	SESA	3.730.609,14	1.558
3	Estadual	SEDUC	3.043.708,19	2.127
4	Externo	Ente Público Externo	1.414.297,99	729
5	Municipal	Município de Caucaia	1.393.527,48	790
6	Municipal	Município de Juazeiro do Norte	1.112.839,46	744
7	Municipal	Município de Maracanaú	1.078.385,48	430
8	Estadual	ASSEMBLEIA	1.030.704,04	484
9	Estadual	P M CE	1.010.614,61	551
10	Municipal	Município de Crato	691.685,06	503
11	Estadual	TJ	583.117,97	230
12	Municipal	Município de Maranguape	534.279,31	509
13	Municipal	Município de Eusébio	465.004,39	264
14	Municipal	Município de Sobral	461.453,08	154
15	Municipal	Município de Brejo santo	390.965,23	298
16	Municipal	Município de Quixadá	333.190,29	256
17	Municipal	Município de São Gonçalo do Amarante	332.723,75	189
18	Municipal	Município de Aratuba	326.677,83	314
19	Municipal	Município de Aquiraz	318.623,94	153
20	Estadual	FUNECE	302.220,09	57
21	Municipal	Município de Quixeramobim	297.775,74	184
22	Estadual	ESP/CE	286.738,31	85
23	Municipal	Município de Horizonte	266.496,53	115
24	Municipal	Município de Aracati	265.846,56	133
25	Municipal	Município de Barbalha	259.611,19	164
26	Municipal	Município de Aurora	237.860,05	298
27	Municipal	Município de Pacatuba	228.340,78	140
28	Estadual	PEFOCE	227.372,16	22
29	Municipal	Município de Tauá	220.400,67	179
30	Municipal	Município de Paracuru	216.965,54	143
31	Municipal	Município de Jaguaruana	214.565,21	150
(...)				
236	Municipal	Município de Antonina do Norte	8.773,23	7
237	Estadual	EMATERCE	8.724,64	4
238	Estadual	CED	7.915,23	2
239	Estadual	SOHIDRA	7.851,58	3
240	Estadual	ADAGRI	6.052,50	1
241	Estadual	ETICE	5.979,48	3
242	Municipal	Município de Deputado Irapuan Pinheiro	3.840,00	3
243	Estadual	SPD	3.415,33	1
244	Estadual	SDE	2.224,56	1
245	Estadual	DAE	1.279,17	1

**Source:** Prepared by the author.

## 11<sup>a</sup>) Referral to the Audit Department of the Court of Auditors (Figure 11)

The results of the present study were sent to the "Personnel Audit Management" of TCE-Ceará, a competent sector with the expertise to continue the audit with the fieldwork.

## CONCLUSION

This work presented the results of the application of the SAS Fraud Framework in the Court of Accounts of the State of Ceará in Brazil. Based on the results found, US \$ 152.13 million a year in frauds, it is clear the importance of using SAS tools in public administration problems. The return on investment, in this project alone, was approximately 190 times the amount invested in the acquisition of SAS Fraud Framework and specialized technical consulting.

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