

PhD DISSERTATION THESES

SÁNDOR NAGY

**KAPOSVÁR UNIVERSITY
FACULTY OF ECONOMIC SCIENCES**

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KAPOSVÁR UNIVERSITY

FACULTY OF ECONOMIC SCIENCES

Doctoral (PhD) School for Management and Organizational Science

Head of (PhD) School

Prof. Dr. SÁNDOR KEREKES

Professor, Doctor of Hungarian Academy of Sciences

Supervisor

Prof. Dr. ÁRPÁD KOVÁCS

Professor

**THE RELEVANCE OF SUPREME AUDIT INSTITUTIONS'
INDEPENDENCE, THE CONTENT PATTERNS OF THE
TERM AND POSSIBILITIES FOR ITS EXTENDED
INTERPRETATIONS**

Prepared by:

SÁNDOR NAGY

Kaposvár

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1. BACKGROUND AND OBJECTIVES OF THE RESEARCH

During my studies at the doctoral school I gained a detailed, exploratory, revealing – and for just that reason – inspirational insight into the secrets, mysteries of public finance management and its external audit techniques which were very close to my own research attitudes and personal belief. My supervisor's (Prof. Dr. Árpád Kovács) personality and professional competence were decisive for the fulfillment of my interest, of my bonding and of my commitment to this specific subject. The mapping and the research of Supreme Audit Institutions' activities and promoting their public value creation have become my labor of love.

In general the Supreme Audit Institutions – (SAIs) are one of the most important institutions of the public accountability system, they are one of the highest-level actors in the *checks and balance* mechanisms – their reports, remarks, proposals are submitted firstly to their most important stakeholder, to the legislature, and at the same time accountability relations are established towards the Parliament. There is no existing external audit body with a higher authority than a SAI in a specific country's public finance system. The term “*supreme*” refers to this circumstance.

Their independence and mandates – based on constitutional and legal guarantees – are granted to them in order to contribute to the general public good by performing their functions. SAIs are the independent external auditors of the national budgets and their implementations, they also form opinions on the operation and the quality of the public finance management. Within the public accountability system, due to their mandates, they assist to

the processes of the parliamentary control rights by taking over these tasks or obligations with the help of their accumulated professional knowledge and the available audit techniques.

As a long-term benefit of their work the following outcomes can be identified: the contribution to success of the *good governance* or the *good government* paradigm; increasing the public trust and the efficiency, the effectiveness of public finance management; completing the transparency, reducing corruption and the rent-seeking behavior. Furthermore they promote the functioning and development of the accountability system by delivering relevant, timely, objective, impartial, evidence-based information which are rest on knowledge, best practices and produced according to pre-fixed aspects and considerations.

The relevance of independent regulatory, control and other institutions, which play vital role in maintaining transparency and accountability, is incontestable in the representative democracies since independence can be identified as one of the most important prerequisites for their high-quality activities.

The establishment of independent institutions has not occurred randomly. There was always some underlying intent, expectation, interest which has motivated and justified their presence. Of course, an interesting question is how could we (or should we) evaluate these entities subordinated to different kinds of interest groups (stakeholders) and aspects. Personally, I approach this question from their public value creation including the logical chain of “output→impact→public good→long-term sustainability”.

1.1 The general difficulties and circumstances of the research of Supreme Audit Institutions

The analysis of the activities of SAIs – due to the special nature of the subject – induces several difficulties and challenges to be solved. In many cases, these institutions keep aloof from supplying data or refuse any request and in addition there is no an up-to-date, unified database for academic use including a set of information based on a unified logic and describing essential characteristics, activities, determinations and social impacts of INTOSAI members. Although initiatives have already been made coordinated by the SAI of Mexico and under the auspices of SAI of India but they are not entirely open to the public. The lack of available credible and usable data available even further strengthens the limits and barriers of research.

In my opinion, due to the above described circumstances, the number of academic researchers dealing with SAIs is relatively small compared to other areas. Approximately 200-300 academic researchers around the World have scrutinized the scientific aspects of external, independent auditing focusing on constitutional and organizational aspects, due to the availability of constitutions and other legal regulations.

In many cases it can be observed that, they only marginally, while negotiating other topics, turned to SAIs and marginally studied them, but the intensity of interest often did not last long and they returned back to “easier” researchable areas of the public finance system.

The testing under real-world conditions, utilization, follow-up and the practical implementation of the proposals described in the scientific publications are also difficult, since, referring to organizational independence

and professional reasons – perhaps in an understandably way – they often fail, so the researchers' “creative desires” can decrease due to the little positive feedback or confirmation. All this can lead to the slowdown in the expansion of academic careers.

Overall, I can state that this research area is not popular globally, and with traditional research tools (primary research, multivariate statistical methods, experimentation, etc.) can not be analyzed or very difficult to understand and interpret the reality so the verification of findings therefore is very limited.

These are exacerbated by the fact, that in some cases the examination of “sensitive” areas can come into view, which is not necessarily part of the mainstream. Many of the researchers involved in the subject are also members of the SAIs: officials or senior officials (even Presidents), so they do not necessarily look at the organization as an external observer. At the same time, INTOSAI urges and encourages extensive cooperation and exchange of views with researchers in order to promote the utilization of the member institutions' activities and to incorporate the latest pieces of knowledge into the everyday operation (*e.g.* organizational theory, audit techniques, system theory, etc.). I have already so far devoted my own research work to this special field and I intend to deal with this subject in the future too. I want to become such a scientific expert who contributes significantly to the professional development of external auditing. In my dissertation, I would like to introduce and refer to my thoughts and results of my activities up to now. Of course, I am aware of the above mentioned difficulties, but I have taken this “burden” on myself.

My inner motivations, my commitment, my particular worldview and ideology over the years have somehow swept me to this area and I finally found the hidden nook of the creative work where I feel me at “home”.

I firmly believe that the analysis of SAIs, the continuous appraisal and fine-tuning of their activities, the furtherance of their intelligent reactions to changes in the public finance and accountability systems are very important and unavoidable mission not only today but also in the future.

And this is the spirit, to which my dissertation is subordinated using my previous research and my professionally founded opinions and suggestions.

1.2 Objectives and the formulation of my hypotheses

The wording and setting of my objectives determine the further course of the dissertation and also refer to my own subjective view, and at the same time, it can be an important move towards the exact delineation of the subject. By preparing the dissertation, my aim is to gain a deeper, more comprehensive insight into the notion of independence of external audit institutions both in terms of *de jure* and *de facto* interpretations.

After an extensive review of the literature, I make an attempt to redefine the most important notions concerning the research topic. In connection with my investigations, I would like to point out a number of measurable and interpretable contexts concerning the *de jure* independence, as well as the content aspects of the SAI's independence as a term and concept.

Based on these, I propose to set up a framework built on the components of the value creation chain, which can provide a starting point for checking and evaluating the independence of the institutions in question.

My further aim is to put forward proposals – with practical utilization – for the “management” of independence, which may be subject to consideration for everyone who is affected. The results achieved so far have made a

significant contribution to formulating my hypotheses and to support, corroborate their relevance. I have tried to delineate my hypotheses so to cover the research area and to support my suggestions with the tools assigned to them.

The dissertation's hypotheses are as follows:

H1: The frequency of occurrence of the term “independence” increased during the period under review, and in parallel (**H2:**), spread out the growing number of components of the value creation chain.

H3: A statistical relationship can be found between the value of the SAI strength indicator and the frequency of use of the term “independence”.

H4a: A statistical relationship can be observed between the SAI strength indicator and the type of institution, and (**H4b:**) between the SAI strength indicator and the period of appointment of the Head/Heads of the SAI for their first cycle.

2. MATERIALS AND METHODS USED IN THE RESEARCH

For the purposes of my research, I relied on the sources and materials described below. In connection with the preparation of the dissertation I sought to make the current and relevant literatures fit for the analysis of the chosen area both professionally and scientifically.

2.1 Sources and materials used

Firstly, the sources of the literature (more than 170) of the dissertation can be listed here as they were traced and collected along the dimensions of the SAI's independence and activities. Hereby, I would like to point out that this thesis booklet contains no references, merely the name of the authors. The detailed and correct bibliography is included in the dissertation! From my point of view, the directed and systematic gathering of the literature – especially in the case of a relatively rarely processed topic – can in itself be useful and value-creating.

The documents and the literature included in the specific examination were divided into two groups: The first-round document base covers the following sources, which are basically a baseline for professional analysis (the first-round base focuses on professional documents in the narrower sense):

- 2003/1-4 → 2015/1-4 **International Journal of Government Auditing**, INTOSAI – IJGA (official journal of the global community of SAIs)
- Summary Reports of symposia of the UN and INTOSAI held in every two years (**UN/INTOSAI Symposium Reports** 2004 (17.), 2005 (18.), 2007 (19.), 2009 (20.), 2011 (21.), 2013 (22.), 2015 (23.))
- Final documents of the three yearly INTOSAI Congress (INCOSAI)

(INCOSAI Accords 2004, 2007, 2010, 2013)

- Texts of the INTOSAI ISSAI standards (ISSAI 1, ISSAI 10, ISSAI 11, ISSAI 20, ISSAI 30).

These documents have been converted from PDF format to TXT format for better handling, standardization and better documentability and in order to facilitate the processing of content analysis. (The uniform format: Times New Roman, font size 12, line spacing 1, and default margins 2.5 to 2.5 cm).

Second-round documents cover the English-language literatures and other relevant documents on SAIs' independence. The standardization has been done here as well. The publications written by Hungarian authors were available in English, and the language of the articles was basically English.

After conversion, the document bases are characterized by the following figures, which are shown in Table 1:

Table 1: The characteristics of the documents serving as a basis for content analysis

| Facts↓ | First-round base | Second-round base | Total: |
|----------------------------------------------------------------------------------|------------------|-------------------|------------|
| Number of pages: | 926 | 516 | 1442 |
| Number of files: | 274 | 51 | 325 |
| Number of affected countries: | 88 | 30 | 96 |
| Other involvements (pcs) – <i>international organizations, cooperations etc.</i> | 5 | 5 | 6 |
| All involvements: | 93 | 35 | 102 |

Source: the author's own construction

For the statistical analysis it was indispensable to create a database – covering several countries – and the checking its correctness in several aspects. The values of the SAI strength indicator were set out in the Open Budget Survey tables. This is an international survey that has been conducted since 2006 and contains myriad of indicators and features that can be linked to the planning, implementation and auditing of the budget. For more details:

Open Budget Survey Data Explorer,
<http://survey.internationalbudget.org/#download>).

2.2 Methodology

In order to accomplish my objectives and to support my hypotheses, I developed an analytical framework that I called the *generalized value creation chain* of Supreme Audit Institutions. It was a great help both in the studying and criticisms of the literatures, in the mapping of their shortcomings relating the content (relating the independence of SAIs) and in formulating my own suggestions.

The types, the different structures, the mandates and other determinations of the State Audit Institutions operating in all parts of the World show great heterogeneity, but they can be uniformly, consistently typified and identified by some common features along certain aspects. Their public value creation and their contribution to the public good can be interpreted in all of them, and the fundamental logic framework behind these processes – in other words – their value chain can be drawn up, outlined according to my conviction.

This approach provides an opportunity to map out the diversity of SAIs and their far-reaching activities, and thinking in a generalized logic system, to explore further contexts and new areas of analysis. The next, Figure 1 shows the most important components and direction of the value creation as well as the feedback process that can assist the adaptation, learning abilities and intelligent responses of the auditor.

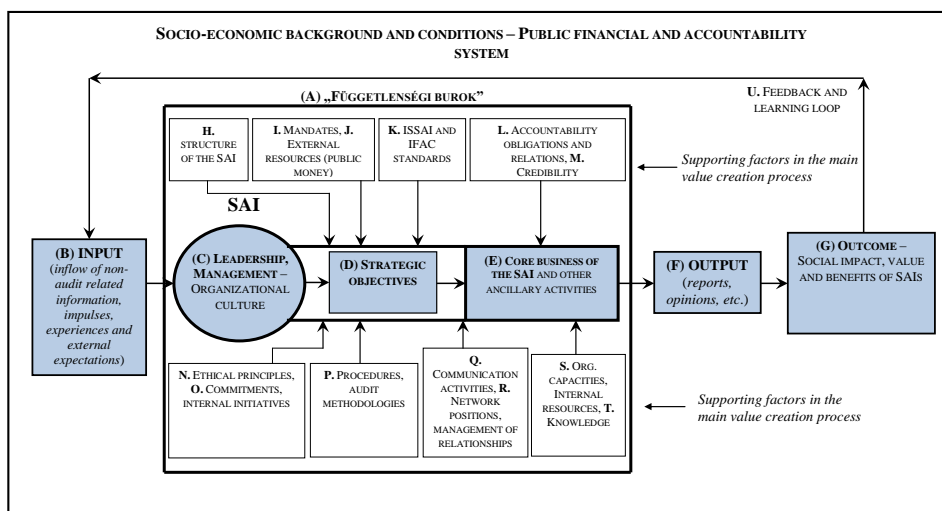


Figure 1: The generalized value creation chain of Supreme Audit Institutions. Source: the author's own construction, based on Azuma (2004), INTOSAI IDI (2012c), Moore (2007), Porter (1985), Talbot – Wiggan (2010)

My dissertation contains the details and content of the components. The methodological approaches of the dissertation are based on the above idea.

2.2.1 Content Analysis

I used the quantitative content analysis to explore the content patterns of the independence of SAIs.

I wanted the expressions and the manifestations of the professional terminology concerning the SAIs' independence to be extended to the widest possible geographical coverage, therefore the global perspective can be considered as justified and permissible. The quantitative content analysis fits perfectly for testing the Hypotheses H1 and H2, and contributes to H3 hypothesis as well. In order to carry out the content analysis, I had been collecting documents, publications and scientific articles relating to the independence of the institutions in question, in which the term *independence* was included. As I mentioned above, I divided these into two different groups. The content analysis embraced English texts. In doing so, I was

curious about the frequency of occurrence of the expression “independence” and about the concomitance with other words. The basic unit of the analysis was the sentence. Only those articles, opinions, and publications were included in the analysis, where the expression of independence appeared in the text. Of course, the words that were not related to the SAIs' independence were filtered out. (For example, referring to the independence of the given country)

Within the sentences I examined the frequency of occurrences of the word “independence” and “independent” as well as other synonyms, with other words whose constellation could refer to a specific element of the value creation chain (A-U). These constellations depict the thoughts, attitudes, creeds and opinions of the external auditors involved in the manifestation in relation to independence. Since the materials derive from the most credible and authoritative platforms have been included in the analysis, it seems clear to me that these are the official, declared standpoints.

However, I am aware of the fact that there may be differences, even robust differences, between the surface, the “forced makeup” and the reality. I am also aware that certain statements and phenomena are the results of different interests. It is almost practically impossible to examine them. The interpretation of *de facto* independence, such an approach, and forcing the setting up a system of viewpoints which reflects the reality are merely for this reason can be expected. The correct classification of the term “independence” (A-U) was built on my professional and research experience, but I also created a special synonym dictionary that contains the possible English-language equivalents of the value chain components. Because it is not enough to see the words in one sentence, so I had to visually check the real meaning content. The dictionary is contained in Appendix 1.

2.2.2 Statistical methods

To test hypotheses H3 and H4, I used the bivariate statistics function of SPSS software package and as a complementary analysis for the hypotheses H1 and H2, I applied descriptive statistics and trend analysis applications and functions of Microsoft Excel software. There was also a need for a dedicated database.

The SAI strength indicator was available, although it is true that not for all countries that were involved in the use of the word *independence*. The second-round base can not be connected to SAIs directly and exclusively, so their analysis is limited to the descriptive statistical method and their inclusion merely complements and enhances the interpretation of the concept of independence. The above mentioned Open Budget Survey also included references to the type of SAIs (Westminster, Board or Napoleonic), but these were not always correct and up-to-date.

As a consequence, I had to review and check the data for all countries and thereafter I collected the appointment periods in force for the head/heads of the SAIs as well. I did not take into account the possibility of re-election since in case of such a large number it was impossible to collect the heads re-elected due to the lack of correct information and references.

This approach, however, fits in to the *de jure* independence approach because the head of the SAI has the constitutional and legislative mandates to manage and coordinate the resources of the institution and to represent the body he governs. This information set was obtained by reviewing the constitutions and laws of the respective countries (n=129).

3. CONCLUSIONS

Below I summarize the results in brief and in essence by hypotheses.

3.1 Description of the results related to H1 and H2 hypotheses

In connection with this I have chosen the following additional analytical techniques:

Ranking the five most often manifesting countries or international cooperation partners which can be related to the use of expression of *independence*. The detection of frequency patterns, graphical representation and trend analysis of the most significant results. Identifying the most commonly referred elements of the value creation chain, thereby capturing the essence the most popular dimensions of the independence.

The following Tables (2/a, 2/b and 2/c) include the names of the countries, cooperative alliances or platforms and components of the value chain to which references can be observed. As a cooperative alliance (platform), I identify the following: (1) UN/INTOSAI Symposium documents, (2) INCOSAI Accords – Final concluding documents of INTOSAI Conferences, (3) INTOSAI ISSAI – INTOSAI Standards, (4) UN (United Nations) Under the aegis of the United Nations published documents, (5) materials from other international organizations (OECD, World Bank, PASAI, Commonwealth, etc.)

Their common feature is that the thoughts and ideas published have been created with the contribution and cooperation of several nations, actors and usually form some common position.

Table 2/a: Frequency of the expression “independence” concerning the (A)→(I) components of the SAI value creation chain

| The components of the SAI value creation chain (A-I) | Number of mentions 2003-2015 (pcs) | Countries or cooperative alliances and the frequency of occurrence of the given element in terms of independence (pcs) | Percent value of the „relative height” (maximum value/total value) (%) |
|------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| A | 234 | 1. UN/INTOSAI (47) 2. AUT, INCOSAI (20) 4. UN (17) 5. INTOSAI ISSAI (13) 6. DEN, RSA (11) | 20,085 |
| B | 93 | 1. UN/INTOSAI (21) 2. INCOSAI (14) 3. INTOSAI ISSAI (10) 4. DEN, FRA, RSA, USA (4) | 22,580 |
| C | 110 | 1. UN/INTOSAI (30) 2. RSA (12) 3. USA (11), 4. INCOSAI (10) 5. MLT (8) | 27,2727 |
| D | 11 | 1. UN/INTOSAI (3) 2. FRA (2) 3. AUT, DEN, RSA, CZE, RUS, UKR (1) | 27,2727 |
| E | 209 | 1. UN/INTOSAI (56) 2. RSA, INCOSAI (16) 4. INTOSAI (11) 5. USA (10) 6. DEN (8) | 26,794 |
| F | 55 | 1. UN/INTOSAI (14) 2. RSA, CAN (6) 4. USA (4) 5. UN (3) | 25, 454 |
| G | 117 | 1. INCOSAI (26) 2. UN/INTOSAI (23) 3. RSA (10) 4. UN (7) 5. KOR, USA (5) | 22,222 |
| H | 44 | 1. UN/INTOSAI (11) 2. INTOSAI ISSAI (7) 3. INCOSAI (5) 4. UN, FRA, MAR, USA (2) | 25,000 |
| HW | 10 | 1. ETH (2) | 20,000 |
| HB | 3 | 1. EU-ECA, GHA, LAT (1) | 33,333 |
| HN | 1 | 1. FRA (1) | 100,000 |
| I | 161 | 1. UN/INTOSAI (39) 2. INTOSAI ISSAI (17) 3. INCOSAI (8) 4. FRA, RSA, UN (5) | 23,926 |

Source: the author's own construction

Table 2/b: Frequency of the expression “independence” concerning the (J)→(U) components of the SAI value creation chain

| The components of the SAI value creation chain (J-U) | Number of mentions 2003-2015 (pcs) | Countries or cooperative alliances and the frequency of occurrence of the given element in terms of independence (pcs) | Percent value of the „relative height” (maximum value/total value) (%) |
|------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| J | 55 | 1. UN/INTOSAI (12) 2. NOR, INCOSAI (4) 3. INTOSAI ISSAI, MLT, MAR (3) | 21,818 |
| K | 52 | 1. DEN (18) 2. CAN (5) 3. AUT (4) 4. RSA, UN/INTOSAI (3) | 34,615 |
| L | 68 | 1. UN/INTOSAI (13) 2. INTOSAI ISSAI (10) 3. CAN (7) 4. INCOSAI (6) 5. DEN, RSA (4) | 19,117 |
| M | 59 | 1. UN/INTOSAI (19) 2. INCOSAI (12) 3. RSA, USA (4) 5. CAN (3) | 32,203 |
| N | 64 | 1. UN/INTOSAI (12) 2. INTOSAI ISSAI (10) 3. CAN (5) 4. AUT, DEN, UN, FRA (3) | 18,750 |
| O | 18 | 1. AUT, RSA, FRA, NED, CAN, NOR, SVK, USA, UN/INTOSAI, INCOSAI, EU-ECA, IND, INTOSAI ISSAI, IRL, MLT, GER, TGA, NZL (1) | 5,555 |
| P | 3 | 1. NOR, UN/INTOSAI, KAZ (1) | 3,333 |
| Q | 13 | 1. RSA, INTOSAI ISSAI, POL (2) 2. AUT, FRA, CAN, HUN, MLI, MLT, NZL (1) | 15,384 |
| R | 79 | 1. UN/INTOSAI (16) 2. INTOSAI ISSAI, USA (7) 4. UN, INCOSAI (5) 6. AUT, BOT (3) | 20,253 |
| S | 72 | 1. UN/INTOSAI (11) 2. INCOSAI (9) 3. AUT, UN (6) 5. MAR, USA (4) | 15,277 |
| T | 25 | 1. RSA (6) | 24,000 |

| | | | |
|----------|---|-----------------------------------------------------------|--------|
| | | 2. INCOSAI (4) 3. MAR, UN/INTOSAI, INTOSAI ISSA (2) | |
| U | 3 | 1. FRA, USA, INTOSAI ISSAI (1) | 33,333 |

Source: the author's own construction

Table 2/c: Frequency data of special dimensions of the SAI independence and the cumulative values of the occurrence (A-U)

| The components of the SAI value creation chain (additional factors) | Number of mentions 2003-2015 (pcs) | Countries or cooperative alliances and the frequency of occurrence of the given element in terms of independence (pcs) | Percent value of the „relative height” (maximum value/total value) (%) |
|---------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| OBJECTIVELY | 16 | 1. UN (4) 2. FRA (3) 3. INCOSAI, MLT (2) 5. AUT, RSA, MAS, USA, INTOSAI ISSAI (1) | 25,000 |
| OBJECTIVITY | 43 | 1. CAN (11) 2. AUT, RSA (5) 4. USA, INTOSAI ISSAI (4) | 25,581 |
| DJ | 7 | 1. DEN, INTOSAI ISSAI, UN/INTOSAI (2) 2. NOR (1) | 28,571 |
| DF | 25 | 1. UN/INTOSAI (5) 2. INTOSAI ISSAI (4) 3. USA (3), 4. FRA, MLT (2) | 20,000 |
| GS | 84 | 1. RSA (11) 2. UN/INTOSAI, INCOSAI (10) 4. UN (8), 5. AUT, DEN (7) | 13,095 |
| Total A→U: | 1547 | 1. UN/INTOSAI (334) 2. INCOSAI (148) 3. INTOSAI ISSAI (104) 4. RSA (92) 5. USA (72) 6. UN (65) 7. DEN (60) 8. AUT (59) 9. CAN (44) 10. FRA (41) 11. MLT (35), 12. HUN, KSA (22) | 21,590 |

Source: the author's own construction

Based on the underlying database and the information provided in the systematic form, I make the following statements:

In the majority of cases, the issue of independence emerged on supranational level through co-operations and clear consensuses closing the exchange of views. This is indicated by the fact that most of the utterances in many components can be linked to collaborative platforms. The truth is that the page number of these documents is much larger than the average size of the documents being analyzed and therefore they are containing more matches.

However, keeping in mind the INTOSAI's knowledge creation procedures (such as the process of creating standards or the operating logic of Working Groups and Task Force) and hierarchical relationships, the top ranking positions are not surprising. It is more interesting, in turn, to ignore certain components and to exclude them from discourse.

These are the (D), (O), (P), (Q), (U), (DJ) and (DF), where the latter is the main focal area of my dissertation.

The term *independence* is less commonly associated with the processes and strategic objectives of the SAIs' strategy-making (D), and appears only marginally in relation to internal organizational commitments and individual attitudes (O). It is also not often possible to read them together in one sentence the independence with the organizational procedures and audit methodologies (P). So, or it's all right in this area according all the actors, or the involvement of this component is not yet a priority or not in the mainstream, such as the (A) (independence in general), (C) (the management and leadership of the SAI), (E) (audit and other ancillary, accessory activities) or even (G) (social impact) components.

Communication of the SAI independence to the wider public and the question of the free use of communication tools and channels are also not popular in the period under review (Q), and the direct or indirect categorization of, the designation and the pointing to the *de jure* and *de facto* independence (DJ, DF) did not emerge considerably from the database. The involvement of the feedback and follow-up mechanisms is also negligible (U).

I called “*relative protrusion* or *relative height*” the ratio that expresses the proportion of the country-specific maximum value for that value creation component to the total number of manifestations of that component. The higher this value, the more significant/momentous had been the contribution of the given actor to the “rising” and “keeping alive” of the subject.

The essence and the underlying content of this indicator will be really meaningful, where the number of mention frequency is high. For example, I would mention the categories (K) (standards) and (M) (credibility). On the basis of my database, the contributions of Denmark (K) and UN/INTOSAI (M) were outstanding in the rise of the topic referring to these components.

It also came to light that the year of 2009 was decisive, most of the mentions in the categories culminated here.

As for the “relative height”, 2009 (H), 2011 (K) and 2014 (Q) are worth mentioning, these were the years where mentions of the indicated categories were significantly larger compared to all others.

As an illustration and in order to test and verify my hypotheses (H1 and H2), I also conducted a trend analysis, and I also added a linear trend function to

the most dominant categories. The linear trend functions were based on the method of least squares. Based on the trend analysis I can state that, except for (P), (Q) and (HN), there was an increase everywhere in the trend (in all categories). The mentioned categories (P, Q, HN) include 3, 11, 1, but these are negligible considering the cardinality of other elements.

The linear trend function for all components (A-U) was also constructed. This tells us that the discourse on the independence of SAIs has been strengthened and developed in its quality and depth.

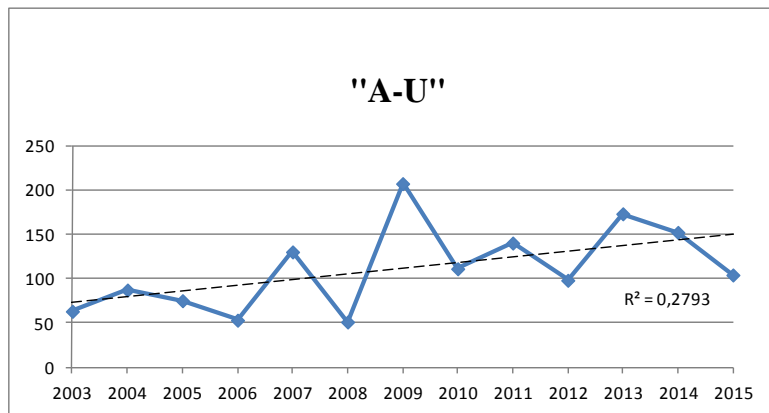


Figure 2: The cumulative frequency of occurrence of the term *independence* covering the full value chain (A) → (U).Source: the author's own construction

In order to create a more objective picture – in addition to the absolute values and the relative height – I also examined other relative indicators. I tested my first-round document base according to the frequency of total mentions (*independence*) per page and the relative distribution of mentions (*independence*) to the total number of words.

After making the calculations, I gained some useful results in yearly, country-by-country and component-specific dimensions. From these it is also proved that the trend-like strengthening of the discourse about independence was

present. Related to frequency of total mentions per page only in one case emerged a negative slope trend function (H). The aggregation focusing on the entire chain (A-U) and on the special, additional factors (DJ, DF, GS) also shows an upward trend. This is illustrated in Figure 3.

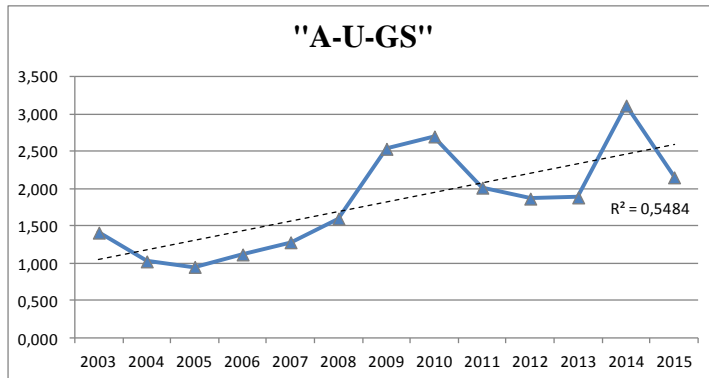


Figure 3: The relative frequency of the term *independence* per page concerning the full set of elements (A-U-GS) and the related linear trend function. Source: the author's own construction

Compared to the cumulative number of words in the documents, by calculating the relative distributions, very similar results were obtained, which also support my earlier conjecture. The component (H) was an exception in this case as well. The aggregation also reveals a remarkable increase during the period under review (Figure 4).

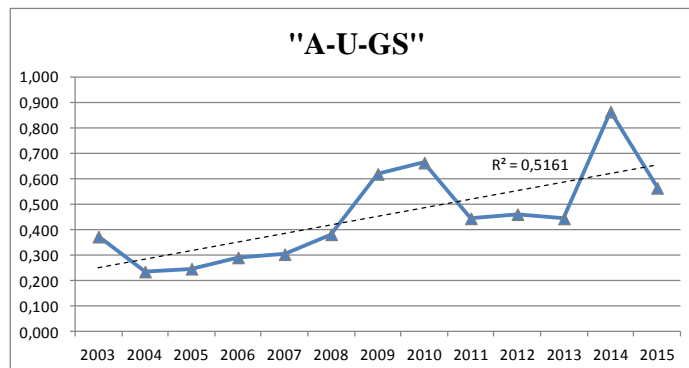


Figure 4: The relative frequency of the term *independence* to the total number of words concerning the full set of elements (A-U-GS) and the related linear trend function. Source: the author's own construction

In case of countries and cooperative alliances the “relative” picture – which depicts the relative frequency per page – was substantially redrawn compared to the absolute analysis. (The page numbers have been cumulated for the given entity). At the same time, it should be noted that the very low (1-2 pages) or very high page numbers, due to the methodology of calculation, even a small number of mention could be construed as relevant, or the guiding, decisive thoughts and meaningful statements could be diluted by large number of pages. It follows that the combined and complementary consideration of both approaches (absolute and relative) is necessary.

The following Tables (3 and 4) include the (partial) ranking of the countries designated by the relative aspects, complemented by the figures of the dominant and relevant actors of the absolute results.

Table 3: Partial ranking of the frequency of total mentions (*independence*) per page

| Ranking of countries and cooperative alliances: | Frequency of total mentions (<i>independence</i>) per page: | Total page number: |
|-------------------------------------------------|---------------------------------------------------------------|--------------------|
| 1. France | 6 | 8 |
| 2. Malta | 4,333 | 9 |
| 3. Israel | 4,25 | 4 |
| 4. Commonwealth of Nations | 4 | 1 |
| 5. Ethiopia | 4 | 3 |
| 6. Germany | 4 | 1 |
| 7. Armenia | 4 | 1 |
| 8. United Nations (UN) | 3,818 | 22 |
| 10. Denmark | 3,227 | 22 |
| ↓ | ↓ | ↓ |
| 11. INTOSAI | 3,055 | 36 |
| 19. South Africa | 2,667 | 39 |
| 22. INCOSAI | 2,446 | 65 |
| 36. UN/INTOSAI | 1,593 | 258 |
| 54. Hungary | 1,2 | 20 |

Source: the author’s own calculation

Table 4: Partial ranking of the relative distribution of mentions (*independence*) to the total number of words

| Ranking of countries and cooperative alliances: | The relative distribution of mentions (<i>independence</i>) to the total number of words (%) | Total number of words: |
|-------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------|
| 1. Dominican Republic | 2,564 | 39 |
| 2. Commonwealth of Nations | 2 | 200 |
| 3. Mali | 1,538 | 195 |
| 4. Mauritania | 1,538 | 455 |
| 5. Bhutan | 1,471 | 136 |
| 6. France | 1,453 | 3.303 |
| ↓ | ↓ | ↓ |
| 13. United Nations (UN) | 1,017 | 8.255 |
| 19. Denmark | 0,828 | 8.577 |
| 20. INTOSAI | 0,814 | 13.512 |
| 26. South Africa | 0,658 | 15.799 |
| 28. INCOSAI | 0,549 | 28.963 |
| 51. UN/INTOSAI | 0,342 | 120.061 |
| 59. Hungary | 0,316 | 7.604 |

Source: the author's own calculation

Focusing on individual publications, in the light of the frequency of total mentions per page, such documents should be highlighted, which on the basis of this indicator, contain particularly concentrated references to independence in relation to all other publications. Denmark 2009 (value 12,667); UN 2009 / France 2014 / Malta 2014 (value 11) and the UN 2009, 2012 articles (values 10 and 9).

While the United Nations (UN) and France basically reflected on the independence of the SAIs and the strengthening of the institutions in question, Malta focused on ensuring the independence of the Member States SAIs belonging to the Commonwealth and on the importance of free communication possibilities of audit reports. The Danish article, on the other hand, presents the history of independence within the community of INTOSAI.

3.1.1 The results of content analysis of the second-round document base

The second-round document base consists essentially of academic research papers and publications. These were processed on the basis of the content analysis criteria described in the previous subchapter, but the values of the relative height were not examined. The purpose of the content analysis here is to complement and contrast the first round test. The most commonly concerned/referred categories were the following: **(I)** (277), **(A)** (274), **(E)** (211), **(R)** (166), **(C)** (141), **(B)** (126), **(G)** (97), **(J)** (92).

The rarest content links were: **(D)** (4), **(P)** (6), **(T)** (10), **(U)** (10), **(DJ)** (15), **(K)** (28), and **(DF)** category (41).

The trend analysis here basically also refers to the “popularity” of the topic, and to the rise of discourse about independence. The following, Figure 5 illustrates the trend.

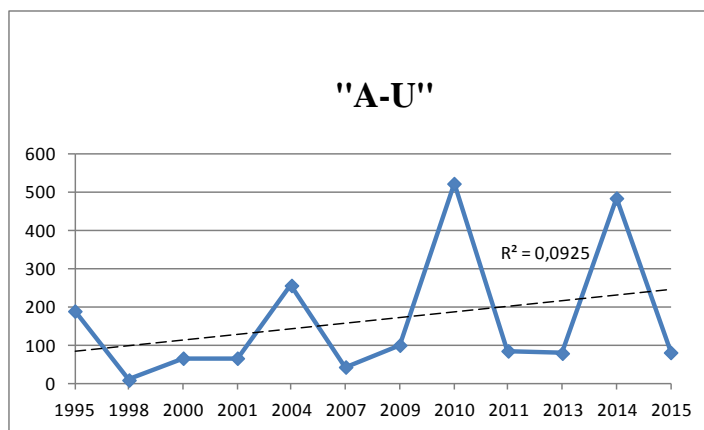


Figure 5: The cumulative frequency of occurrence of the term *independence* covering the full value chain (A) → (U). Source: the author's own construction

3.1.2 The results of the SPSS analysis associated with H1 and H2 hypotheses

The analysis covered the following two factors: cumulative frequency of the expression *independence* (2003 – 2015) and the type of the SAI (Westminster, Board, Napoleonic).

Based on the *Post Hoc* test, it can be stated that the null hypothesis (H0) is accepted because there is a significant relationship between all three categories. The difference in metric variables can only be explained by 0.9% of the scale variable (W, B, N), and the remaining 99.1% can be explained by other factors (randomness) that are not taken into account or the chance. There is a weak (0,095), non-significant relationship between the two variables.

From this I concluded that the different types of SAIs have mentioned the term independence with almost the same cumulative frequency for the period 2003-2015. H1 and H2 hypotheses were accepted in the light of the above calculations.

3.2 Description of the results of the H3 hypothesis

Two factors were included in the analysis: value of the SAI strength indicator and frequency of the written manifestations (i.e. cumulative number of publications/articles (2003 – 2015) (taking into account the SAIs who manifested and who did not).

Looking at the correlation, we can say that there is a moderately weak significant relationship between the two variables (R=0,385).

All this suggests that, in general, those SAIs publish more publications, articles and other documents (containing the term independence) which are, by the way, stronger according to the Open Budget Survey.

The analysis of the related, additional dimension has affected the value of the SAI strength indicator and the cumulative use of expression of *independence* (2003 – 2015).

According to the analysis, there is no significant relationship between the two criteria. Based on the above, there is no significant relationship between the total frequency of the use of the term *independence* and the strength indicator. Therefore, such a SAI can be strong on the basis of the international survey indicator, whose frequency of manifestation is rather lower than the average.

Particular attention was paid to the relationship between the SAI strength indicator and the frequency of the term *independence* for each separate component of the SAI's value creation chain (A–U). Here, for each element of the value creation chain the *Spearman's* correlation test was conducted. Here, only two components had significant relationship: (G) and (HW).

So, the SAIs which dealing with the contexts of social impact and independence are significantly stronger. And the *independence* mentioned in connection with the Westminster type institutions can be linked to the significantly stronger SAIs. In summary, it can be stated that the H3 hypothesis is not proved entirely. In the light of this, such SAIs use the term independence and declare their view with high probability, which are less powerful. Thus the weaker SAIs also had been writing about independence or were affected in this subject. This may indicate that at least they tried to

reveal, to understand and they were motivated to respond to challenges in connection with deficiencies in their independence.

3.3 Results of H4a and H4b hypotheses

A test was performed focusing on the connection between the following variables: Value of the SAI strength indicator and the type of the institution. (Westminster [type code in analysis: 3], Board [type code in analysis: 1], Napoleonic [type code in analysis: 2])

Based on ANOVA, there is no significant relationship between the two variables, so in general it is true that any SAI can be strong or weak regardless of the type. The difference in metric variables can be explained by 2.9% of the scale variable and the remaining 98.1% can be explained by other factors (and by the randomness) that are not taken into account. There is a non-significant weak link (0,17) between the two variables.

An additional, bivariate analysis was performed between the SAI strength indicator and the duration of the appointment of the Head of the SAI (including only the first term of appointment). After running the test, it was apparent that there was no significant relationship between the two variables.

The issue deserves more, deeper insights, as it is often unclear in the literature that shorter or longer tenure of office would be more useful. In a tabular form, I compared the appointment periods with the average values and standard deviations of the SAI strength indicators. I did it in the same way separated for four categories.

I was wondering where (for what appointment periods) the high average values were coupled with high standard deviations. If such a coincidence

exists, the SAI strength is relatively stable (with low standard deviation) at the given duration of the tenure of office. The following two Tables (5 and 6) provide detailed information about this:

Table 5: The primary appointment period (years) of the heads of SAIs included in the research and certain aspects of the SAI strength indicator

| Appointment periods of the Heads of SAIs (years): | Number of involved SAIs (pcs) | Mean values of the SAI strength indicator (0-100) | Standard deviations of the SAI strength indicator |
|---------------------------------------------------|-------------------------------|---------------------------------------------------|---------------------------------------------------|
| 3 | 4 | 58,250 | 22,890 |
| 4 | 10 | 65,825 | 20,578 |
| 5 | 22 | 54,193 | 20,991 |
| 6 | 11 | 71,204 | 19,930 |
| 7 | 13 | 74,980 | 16,711 |
| 8 | 6 | 88,916 | 10,467 |
| 9 | 5 | 90,000 | 8,165 |
| 10 | 1 | 100,000 | 0 |
| 12 | 2 | 79,125 | 4,125 |
| 15 | 1 | 100,000 | 0 |
| 20 | 19 | 53,938 | 23,444 |
| Total: | 94 | 66,043 | 23,428 |

Source: the author's own construction and calculation

The Table 6, below, may even more highlight and designate the “playing room” for the appointment period of the Head of the SAI as the previous one – where the SAI strength indicators' average values meet the lowest values of the standard deviations.

Table 6: The primary appointment period (years) of the heads of SAIs included in the research and certain aspects of the SAI strength indicator

| Appointment periods of the Heads of SAIs (categories and years): | Number of involved SAIs (pcs) | Mean values of the SAI strength indicator (0-100) | Standard deviations of the SAI strength indicator |
|------------------------------------------------------------------|-------------------------------|---------------------------------------------------|---------------------------------------------------|
| 3-4-5 (short) | 36 | 57,875 | 21,702 |
| 6-7 (medium) | 24 | 73,250 | 18,354 |
| 8-9-10 (medium-long) | 12 | 90,291 _{MAX} | 9,560 _{MIN} |
| 12-15-20 (long) | 22 | 58,321 | 24,720 |
| Total: | 94 | 66,043 | 23,428 |

Source: the author's own construction and calculation

Based on the above described calculation, a mid-term (8-9 to 10 year) appointment period seems to be a good compromise.

Of course, this type of test does not fully verify and do not give completely satisfying (scientific) answer how to optimize the time of appointment but after all it provides a greater insight into this interesting topic area based on an extended sampling which is one of the most mentioned aspects of the *de jure* independence approach.

3.4 Summary conclusions

By the evaluation of the analyzes I could gain a deeper insight into the interpretation dimensions of SAIs' independence and into the frequency of use of the term *independence* for each component of the value creation chain.

It has become apparent to me that the increase in the need for independence can be detected, and it is also turned up in professional and academic discourse. However, the uniform interpretation for the entire spectrum of the value creation chain is missing, as well as the deeper discussion of the real, *de facto* dimension which also serves the above mentioned needs.

In previous chapters I have been already drawn such conclusions which had been focusing on the narrower scope of the investigation range. For my dissertation's recommendations, which will hopefully have practical applicability aspects, I globally conclude from my own research that (1) the SAIs' independence can only be interpreted in a holistic way; taking of a single factor does not necessarily lead to a significant results, and (2) there is a strong and justifiable need for the *de facto* interpretation and for the SAIs' proper behavior underlying the real independence aspects (management of independence) and the accountability mechanisms as well.

My suggestions however can also assist to meet the real or latent needs, in order to create a more objective picture. My advices – based on my own

approach and on the goals of the dissertation – are formulated fundamentally in connection with the actual, and the substantiated and accountable independence.

4. NEW AND NOVEL SCIENTIFIC RESULTS

(1) The generalized value creation chain of Supreme Audit Institutions which is tailored on the functioning of the organizations in question and also served as an analytical framework in my dissertation.

Of course, the concept of value creation chain (value chain) can be linked to Porter, but while he basically has been focusing on the competitive sphere, I was concentrated on Supreme Audit Institutions and the public accountability system. The authors – listed above by the Figure 1 – also affected the subject and referred to these processes, but in such details the elaboration did not realized yet (Azuma, INTOSA IDI, Moore, Talbot and Wiggan).

(2) I treat the mapping out the patterns of the terminology used and the underlying content aspects in connection with the independence of SAIs as new or novel scientific results, especially focusing on their changes over time and their dynamics. All this was complemented by an international outlook which is based on a very wide-ranging, stakeholder-oriented approach and on a special academic and professional literature review. This extensive sampling can be considered too exaggerated, but in parallel, an in-depth analysis of a highly accurate and delineated research field was performed.

In order to understand and detect the usage of the term “independence” and the substance of the notion – in my opinion – a larger sampling was essential.

(3) Based on the H3 hypothesis, I consider a new or novel result the comparison of results resting on the content analysis (the strength of the stochastic connection) with the available and notable factors reflecting on the SAI's independence (OBS SAI strength indicator; type of the SAI).

(4) A new or novel results are the findings which are resting on large-scale analysis and the gained results. For example, investigating the relationship between the *SAI strength indicator* and the *type of the SAI* (H4a hypothesis). In the literature, there is no real example of such an analysis based on such a large sample, and especially those which using statistical methods. As an exception, I would mention Blume and Voigt's article in which they perform such calculations, but they basically adopt a different approach by using other types of indicators and working with substantially fewer countries.

(5) A new or novel results are the statements derived from the examination of the H4b hypothesis. Its importance lies in the circumstance, that there was no usable, correct database (duration of the appointment of the Head of the SAI). This had to be done, and it can be read in Appendix 2 of the dissertation. Such a recapitulative database – far as I know – is not available to a broader, non-professional audience. In the case of the previously mentioned H4a hypothesis, the updated and corrected typification/classification of SAIs also had to be done since the Open Budget database was sometimes incorrect. So, with the help of my research I tried to fill the gap left open in the literature.

The discourse has already taken place – as one of the most important *de jure* independence factors – of how important the duration of the tenure of office (Head of the SAI) which basically contributes to the performance and strength of the institutions. But this was not the subject of such detailed analysis, it was merely a theoretical/conceptual approach to the question.

(6) Concerning the H4b hypothesis I examined the development of the values of the SAI's strength indicator and I compared them with the specific appointment periods, as well as with the classifications/grouping I made. As a result of the investigation a broad based pattern emerged from which an ideal appointment term can be derived. Of course, I have added that it should be

treated very carefully, as this in reality depends on many other factors, which are sometimes impossible to take into account. My examinations have shown that the SAIs' independence can be interpreted only in a holistic way, and grabbing a single factor does not necessarily lead to a significant result.

5. RECOMMENDATIONS (THEORETICAL AND PRACTICAL USAGE)

(1) Harnessing the possibilities of practical aspects of the value creation chain.

The SAI's value creation chain is the essence of my knowledge, my professional research and synthesizing of the literature and it can induce many practical applications. It can be used, as it has been shown here, as an analytical framework, it can provide a good starting point for strategy creation, external peer review, organization development and capacity enhancement analyzes, moreover knowing and placing the elements and components in a well defined system can also provide strong points for risk management.

(2) Along with the all elements of the above described analysis framework, I have developed my own (*de facto*) independence-based interpretative points. The importance of the *de jure* independence can not be questioned, but the interpretation of the *de facto* independence is inevitable. The essence of the conversion is to reinterpret the elements – which are inherently based on legal and constitutional guarantees – in terms of how and what quality did they realized over a given period.

(3) Redefining, rethinking, and extending the meaning of independence to all components of the value creation chain (*enabling de jure, de facto and the substantiated & accountable independence*).

The substantiated and accountable independence (S&AI) builds upon the earlier concepts but it extends them. Understanding the concept gives an idea of how did (1) the enabling independence provided by the legislature implemented or realized for a specific date (*static approach*) or for a given

time period. (2) Reveals the resources, capacities, accumulated and newly created elements of knowledge that support independence, and includes independent auditors/officers and their contribution to the independence of the organization. (3) It takes into account those circumstances (opportunities) that can help achieve the highest level of independence and summarizes the risk factors that could jeopardize this. (4) Evaluates and monitors the SAI's autonomous opinion formulation (without the intervention of any actor) and its ability to influence. (5) Highlights the subjective perceptions of the stakeholders who are involved or interested in the SAI's independence. (6) Regarding the *substantiated & accountable independence* come into view the objective, narrower and broader interpretation of the SAI's performance and its performance measurement, as well as (7) taking account of accountability relationships, including from the criminal liability of individuals to the wider organizational integrity management (SAI IM). (8) The dynamics of the evolution of independence, the consideration and follow-up of influential processes – over a number of investigation periods – have also decisive importance in the broad interpretation of the concept (*dynamic approach*). (9) The justification and the accountability should be accompanied by the sufficient and appropriate transparency covering all elements of the value creation chain.

The Figure 6 below redounds the illustration and the understanding of the concept. In the core of the outlined structure, the unity and the symbiosis of *de jure* and *de facto* independence can be found.

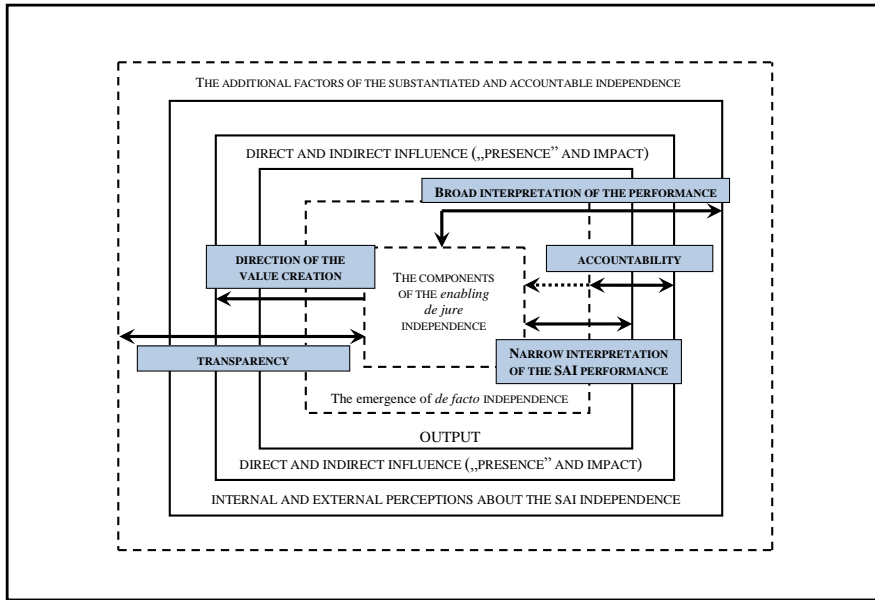


Figure 6: Conceptual and illustrative framework of the interpretation of substantiated and accountable independence.

Source: the author's own construction

(4) I consider as an added value of my dissertation the evaluation matrix of the *substantiated & accountable independence* of the Supreme Audit Institutions (see Table 7.). Indicators can be formed on the basis of the points, which, of course, have to meet the SMART criteria (*Specific, Measurable, Agreed upon, Realistic, Time-related*).

And now, I do not want to get into contradiction with myself, since I did not support the “dominant” and “omnipotent” use of the indicators. This is what I think generally, but I do not exclude the possibility of using indicators, moreover, complementing the former, they can serve perfectly the evaluation processes focusing on the independence.

Table 7: The evaluation matrix of the *substantiated and accountable independence*

| TRANSPARENCY OF THE SAI (THEORETICAL POSSIBILITY) | | | | | | | |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------|----|-------------------------|---------------------------------|-------------------------------------|------------------------------------------------------------------------------|--------------------------------|
| ↑ COMPONENTS OF THE SUBSTANTIATED AND ACCOUNTABLE INDEPENDENCE: → | BROADER INTERPRETATION OF THE SAI PERFORMANCE | | | | | ↓ ADDITIONAL FACTORS OF THE SUBSTANTIATED AND ACCOUNTABLE INDEPENDENCE: ↓ | |
| | NARROW INTERPRETATION OF THE SAI PERFORMANCE | | | | | | |
| | (?) | | SCOPE OF ACCOUNTABILITY | | | | |
| | EDJ | DF | OUT PUT | INFLUENCE - "PRESENCE" , IMPACT | PERCEPTIONS – Internal and External | Contribution to independence | Possibilities and risk factors |
| (A) Interface of the independence | | | | | | | |
| (B) INPUT (inflow of non-audit related information, impulses, experiences, external expectations) | | | | | | | |
| (C) Leadership, management and organizational culture | | | | | | | |
| (D) Strategic objectives | | | | | | | |
| (E) Core business of the SAI and ancillary activities | | | | | | | |
| (F) OUTPUT (reports, opinions etc.) | | | | | | | |
| (G) OUTCOME Social impact, value and benefits of SAIs | | | | | | | |
| H. Organizational structure | | | | | | | |
| I. Mandates | | | | | | | |
| J. External resources (<i>public money</i>), own | | | | | | | |

| | | | | | |
|-----------------------------------------------------------------------------|--|--|--|--|--|
| budget | | | | | |
| K. ISSAI and IFAC standards | | | | | |
| L. Accountability obligations and relations | | | | | |
| M. Credibility | | | | | |
| N. Ethical principles | | | | | |
| O. Commitments and internal initiatives | | | | | |
| P. Procedures, audit methodologies | | | | | |
| Q. Communication activities | | | | | |
| R. Network positions, management of relationships and connections | | | | | |
| S. Organizational capacities, internal resources, auditors, human resources | | | | | |
| T. Knowledge | | | | | |
| U. Feedback and learning loop | | | | | |

Source: the author's own construction

(5) Outline and mention the possible areas and challenges of the organizational management issues and the related capacity development dimensions of the “*substantiated & accountable independence*”, which may designate further research directions, possibly focusing on a particular SAI, helping to manage the multidimensional aspects of independence.

6. SCIENTIFIC DISCLOSURES AND PUBLICATIONS IN THE SUBJECT OF THE DISSERTATION

1. Nagy S. (2016): A számvevőszéki „függetlenség” szóhasználatának mintázatai az INTOSAI közösségén belül. *Jelenkori Társadalmi és Gazdasági Folyamatok*, Vol. 11, No. 1-2, pp. 63-77.

2. Nagy S. (2016): Najwyższe organy kontroli oraz nowe aspekty kreowania wartości publicznej w złożonych systemach adaptacyjnych. *Kontrola Państwowa*, Vol. 61, No. 4, pp. 611-629.

3. Nagy S. (2015): Effectiveness problems at urban public transport: from the perspective of the European Court of Auditors. *Quaestus: Open Access Journal*, No. 7, (June 2015) pp. 101-108. 4th International Conference on Tourism and Durable Development. Timisoara (Temesvár), Románia: 2015.05.07 – 2015.05.09.

4. Nagy S. – Gulyás L. (2015): Számvevőszéki értékteremtés „turbulens” környezetben – a komplexitás kezelésének lehetőségei. *Vezetéstudomány*, Vol. 46, No. 7, pp. 2-14.

5. Nagy S. (2015): A közpénz változó szerepe és funkciói. *Jelenkori Társadalmi és Gazdasági Folyamatok*, Vol. 10, No. 1, pp. 9-16.

6. Nagy S. (2015): Supreme Audit Institutions and New Aspects for Public Value Creation in Complex Adaptive Systems. Hetesi E. – Vas Zs. (szerkesztők): *New Ideas in a Changing World of Business Management and Marketing*. Konferencia helye, ideje: Szeged, Magyarország, 2015.03.19 – 2015.03.20. Szeged: University of Szeged, Doctoral School of Economics, 2015. pp. 206-224. ISBN 978-963-306-385-9

- 7. Kis K. – Nagy S. (2012):** A LEADER-megközelítés alkalmazásának tapasztalatai az eredményesség, hatékonyság és fenntarthatóság szemszögéből. *Közép-Európai Közlemények*, Vol. 5, No. 2, pp. 159-168.
- 8. Nagy S. (2012):** Az Európai Számvevőszék ellenőrzési tevékenységének kohéziós politikai vetülete. *Közép-Európai Közlemények*, Vol. 5, No. 1, pp. 127-135.
- 9. Nagy S. – Gál J. – Véha A. (2012):** Improving audit functions of supreme audit institutions to promote sustainable development. *Abstract – Applied Studies in Agribusiness and Commerce*, Vol. 6, No. 3-4, pp. 63-70.
- 10. Nagy S. (2012):** The role of Supreme Audit Institutions in fight against the consequences of financial and economic crisis – A theoretical approach. Farkas B. – Mező J. (szerkesztők): *Crisis Aftermath: Economic policy changes in the EU and its Member States*. 513 p. Konferencia helye, ideje: Szeged, Magyarország, 2012.05.08 – 2012.05.09. Szeged: Faculty of Economics and Business Administration, University of Szeged, 2012. pp. 256-267. ISBN 978-963-306-159-6
- 11. Nagy S. (2011):** A számvevőszékek és a civil szféra kapcsolata az ellenőrzések hatásosságának növelésére. *Jelenkori Társadalmi és Gazdasági Folyamatok*, Vol. 6, No. 1-2, pp. 52-58.