

Is European Fund's Implementation Subject to Slipup for Emerging Countries' Approach?

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Abstract: Our study explores in a holistic approach the topic of non-refundable European funds (NREF). Taking as pillars the results of the operational audit (weakness and errors) and the remedial role of follow-up operations, we approach in a longitudinal manner (2008-2020) the evolution of the European funds in the case of Romania, a former communist country, member of the European Union (EU). Through a theoretical and empirical framework, our results show a fluctuating evolution on all the operational programmes implemented in Romania over 22 years. The results can be a reference base for East European countries' experience, newly acquainted with EF. The unveiled results can be justified by the Romania's government lack of experience, fluctuating legislation, minor knowledge of the Eastern European culture by EU, aspects that, in recent years, based on a better familiarity with the non-reimbursable funds and the effects of follow-up operations, are significantly improving.

Keywords: external audit; Non-Refundable European funds (NREF); Romania; irregularities; longitudinal.

1 Introduction

The accession of these funds is an objective of the post-adherence strategy for any new European Union state member. The convergence process of the emerging economies towards the rich ones would satisfy the natural desire of humanity for justice and fairness (Georgescu & Herman, 2019). It becomes obvious that one of the main economic benefits of

EU membership is the access to these financial resources through the European Cohesion Policy.

Thusly, European funds infusion in the less developed, newly entered economies is an important element of growth and stability. These countries have a unique opportunity to accelerate their economic growth, provided they take advantage of the resources.

Even so, the presence of irregularities in NREF's use and reporting process, identified due to audit procedure (Grosu & Mihalciu, 2020), has a significant impact over stagnation and inefficiency (Asare et al., 2020) across the European funds' benefits. The relevance of a robust external audit whose mandate is to strengthen assurance, accuracy and compliance of European rules is obvious, mainly in a country without a consistent experience in NREFs approach. External public audit is not seen as a goal in itself but as a tool to optimize the use of funds by helping to identify the significant irregularities and their material correction (Lungeanu, 2015).

Despite other scientific research which underline the funds' absorption connected with audit legal framework (Kassem & Higson, 2016; Grosu and Mihalciu, 2020; Hnydiuk et al., 2021), the main goal of our research is to study the accuracy of absorption process, having as pillar the operational and follow up audit process. We analyse the main deficiencies found in reporting documents during the external audit missions carried out by the Romanian Audit Authority. Using a critical and causal method, based on documents content analysis, applied on a longitudinal approach (2008-2020), we identify the main categories of errors emerging from the audit reports at the level of the seven Operational Programmes implemented by Romania. Since 2015, it was introduced special follow-up operations, in order to monitor the extent to which the recommendations of previous audit missions have been implemented. Accordingly, the main aim of our research is to evaluate the link and interdependency between auditee actions effects (weakness and errors) and follow-up processes of NREFs, in Romanian point of view. Our results are intended to fill the scientific gap regarding, firstly, the relationship between operational audit and follow-up audit as a cause-effect connection and, secondly, the corrective role of follow-up audit. This holistic approach reveals in a longitudinal manner the scope of the European fund's reporting external audit, the typology of errors identified by the operational audit (2008-2020), on which we comeback through the corrective effect of the follow up audit (2014-2020) to measure the effect and the uptake of the proposed corrections (2008-2020).

Ex-communist country, member in European Union since 2007, Romania, is an important subject of analysis, representative for the way in which NREF can influence the economic growth and the quality of life, in name of European convergence. In accordance with relevant studies (Katsarova, 2013; Lungeanu, 2015; Antohi et al., 2020; Grosu & Mihalciu, 2020) the real level of European funds' impact on the economic development and the living standard of citizens depends on quality of entire process, including the accuracy of the information provided and the audit process. Our study's relevance is justified by the bidirectional connection between absorption degrees and documents/reporting accuracy, having the audit process as a balance between them. Katsarova (2013) said that high absorption per se is not sufficient to deliver economic growth. It all depends on the process'

honesty degree, designed to sustain the real and long-term well-being of the country. In this approach, our study has a major relevance since, in Romania there are significant difficulties related to fraud and errors, which were found by the European authorities and supervisors in the implementation processes of the European projects (Antohti et al., 2020).

In this spirit, the originality of the study can be defined as follows: first of all – the time- the analysis made on such long interval give a comprehensive approach on European funds problems that can be avoided in future implementation of NREFs; secondly – the country's particularities - Romania is one of the latest member of European Union, an emerging country which developments depends on this financial resources, so its behaviour can be extrapolated to ex-communist countries; thirdly – the research topic- our study covers the irregularities detected by audit in funds management along with its improving effect, the corner stone of a successfully absorption process; fourthly – the research methodology - observed in a longitudinal way, in a repetitive approach, critically analysed and justified, the manifestation of these errors leads to a phenomenon-type analysis. The results reveal that Romanian EF's reporting under audit lens is an interesting gap, with a dynamic and sometimes unpredictable evolution. These limits must be removed because a better attracting structural funds process it seen as an opportunity for a sustainable development, an objective of 2030 Agenda.

Novelty of study can be justified based on the longitudinal approach which covers 12 years and 7 Operational Programmes specific to Romanian context, ex-communist country, EU member, whose development is significant grounded on European funds. The manner in which are presented the irregularities in study, can be a proper and useful structure for national and international experience in European funds topic research and practice. Our study insists on external public audit's role and present important opinions regarding future challenges. According to Lungeanu (2015) the main task for XXI century is how to get more from less, more effective results with fewer financial resources.

The users of our research can be split in academics and practitioners/legislators. From a theoretical point of view, the NREFs irregularities management is an important topic research especially for those who want to find ways to avoid them, for a better benefit of structural funds in all European countries. The connection with external audit process, enlarge this approach and develop new connections and interlinks between them. All these academic results can be disseminated in practice and be a helpful instrument for a better use of NREFs.

Our study is made up of the following sections. In first section we create a European in general and Romanian in particular, regarding non-refundable European funds. In second section, the data basis and methodology research are developed, in order to generate well based results (third section). In the final part, we insert general and particular conclusions regarding our research objectives.

2 Theoretical Framework

2.1 General aspect regarding European Funds in EU

The non-refundable structural funds represent financial instruments through which the European Union acts in order to reduce the economic and social discrepancies between regions aiming to achieve the economic and social cohesion in the European space (Lungeanu, 2015). The analysis of European funds is an important scientific topic, linked to various development stages in the construction of the European Union.

Research studies remarks, besides the significant advantages as experience and appreciations regarding future strategies' impacts (Polverari & Bachtler, 2005), a weaker effect than the expected one (as intensity) from the beginning of European financing process (Dall'erba & Le Gallo, 2008) or a lack of visible convergence process (Rodríguez-Pose & Fratesi, 2004). Ferry et al. (2007) show that in the last twenty years' structural funds implementation systems have become more sophisticated, less centralized and more integrated. The most important changes have occurred in the project selection process that has become more strategic and more proactive. Specific to Central and Eastern European countries, Horvat (2005) shows that a low number of institutions involved in the management of sectorial or regional financing programme, give the premises for a higher structural funds absorption rate. Paradoxically, according to researchers, the most economically disadvantaged regions are also experiencing the greatest difficulties in spending (absorbing) these funds (Katsarova, 2013). More than that, money from NREFs go more in wealthier regions because they have the capacity to sustain the beneficiary's contribution, among others (Mare et al., 2013; Litan et al., 2013).

These problems can be justified by the huge and difficult methodology of implementation, the lack of experience, the mistakes or irregularities made in absorbing or reporting system.

Romania's accession to the European Union (EU) on 1 January 2007 marked the beginning of a new chapter of economic development. This process started under the pressure of pre and post accession requirements, generating a major motivation, far superior to domestic one (Văduva, 2018). This is an extraordinary advantage for the newly accepted countries, especially the former communist ones (including Romania) that entered after their democratization in a zone of ambiguity and uncertainty in their choice of development direction.

Following the socio-economic analysis, a series of problems were identified which formed the "skeleton" on which the Operational Programmes were developed. These are the instruments through which the National Strategic Reference Framework (NSRF), the support document of SCF implementation methodology in our country, is applied. The areas requiring major long-term structural interventions are: basic infrastructure; economic competitiveness; human capital; administrative capacity; territorial dimension.

The Operational Programmes (Table 1) designed to achieve the stated objective of the National Strategic Reference Framework 2007-2020 are:

Table 1. Transposition of Operational Programmes 2007-2013 versus 2014-2020

Structural and Cohesion Funds 2007-2013	European Structural and Investment Funds 2014-2020
Regional Operational Programme (ROP)	Regional Operational Programme (ROP)
Sectoral Operational Programme for Transport (SOPT)	Operational Programme Large Infrastructure (OPLI)
Sectoral Operational Programme Increasing Economic Competitiveness (SOPIEC)	Operational Programme Competitiveness (OPC)
Sectoral Operational Programme Human Resources Development (SOPHRD)	Operational Programme Human Capital (OPHC)
Operational Programme Development of Administrative Capacity (OPDAC)	Operational Programme Administrative Capacity (OPAC)
Sectoral Operational Programme Technical Assistance (SOPTA)	Operational Programme Technical Assistance (OPTA)
Sectoral Operational Programme Environment (SOPE)	-

Source: authors' projection

In this regard, we present an assessment of the allocations for Romania in the Operational Programmes, concerning two funding periods (2007 - 2013 and 2014-2020). This shows that, in most cases, the level of absorption for the 2007-2013 period has a positive influence on the amount of funds granted in 2014-2020 (Table 2).

Table 2. Comparison between allocations 2007-2013 and 2014-2020 (€ billion)

ALLOCATIONS 2014-2020		ALLOCATIONS 2007-2013		Ratio 2014-2020 (%)
Regional	6,9	Regional	4,0	+2,9
Infrastructure	9,2	Environment	4,4	+0,5
		Transport	4,3	
Competitiveness	1,3	Competitiveness	2,5	-1,2
Human Capital	4,4	Human Capital	3,2	+1,2
Administrative capacity	0,6	Administrative capacity	0,2	+0,4
Technical support	0,3	Technical support	0,2	0,1
Total	22,6	Total	18,8	+3,8

Source: Own calculations based on data provided by the Ministry of European Funds (2022)

Irregularities detecting process is a major priority in improving the funds' absorption. A fundamental contribution for an efficient and effective irregularity's

management process is the implementation of concept at all levels of entities involved in European funds administration. The low absorption rate of EU funds is linked to the systemic failure to implement effective mechanisms and adequate management systems (Antohti et al., 2020).

2.2 Irregularities under the audit lens in Romania

Regular audits performed by external auditors can control corruption phenomena (Kassem & Higson, 2016). Corruption diverts society's resources from their intended use, affecting public order and financial discipline, as well as efficiency in the use of public money (Lungeanu, 2015). Managing authorities responsible for the management of EU funds are required to analyse, at least once a quarter, all cases of irregularities and to take the necessary measures to prevent them and to improve financial management and control systems.

The activity of detecting irregularities and establishing budgetary claims/financial corrections is carried out by the authorities responsible for the management of European funds, through control structures organised for this purpose. In Romania, the Audit Authority of the Romanian Court of Accounts (Law no.94/1992) is the only national authority competent to carry out external audit, in accordance with the requirements of European Union and national legislation.

The objective of the system audit is to obtain assurance that the management and control system of the operational programme has functioned effectively in order to prevent irregularities when they occur (Ienciu & Bonaci, 2013) and to ensure compliance with European Commission specifications.

The audit of operations is part of the responsibility to obtain reasonable assurance that the declarations of expenditure submitted to the European Commission are correct, that the transactions on which these declarations are based are legal and, last but not least, that the management and control system is functioning properly (Arens and Loebbecke, 2003). As a validation of improved activity, since 2015, the audited entities usually implement the recommendations of the audit reports, and auditing team always go back to the entities to review whether their recommendations have been implemented through "follow-up processes".

The results of the audit missions (operations and follow up) carried out by the Audit Authority¹ are included in the annual public report of the Court of Auditors and reported to the European Commission.

¹ Law 94/1992 on the organization and functioning of the Court of Accounts of Romania, with subsequent additions and amendments, specifies that the Audit Authority is the only national authority competent to carry out external public audit for the non-reimbursable funds granted to Romania by the European Union through the structural instruments.

In the error process management, in Romanian legislation (OG 79/2003; OG 66/2011) there are: irregularity, fraud and budget claims (Table 3). Our study focuses on the concept of irregularity.

Table 3. Errors definition according to Romanian law

Irregularities	Fraud	Budgetary debt
Irregularity means any withdraw from legality, regularity and compliance with national and/or Community legal provisions.	Fraud is any intentional act or omission in relation to the obtain, use or management of Community funds, arising from general budget of the European Communities or other budgets managed by them or on their behalf, and/or from related co-financing budgets.	Budget debts are amounts to be recovered from the general budget of the European Community and/or budgets managed by or on behalf of the European Community and/or related to co-financing budgets, as a consequence of incorrect use of Community funds.

Source: OG 79/2003; OG 66/2011

2.3 Research hypothesis development

Although the benefits of structural funds are well known, Romania is not among the top beneficiary countries. A growth of the EU funds absorption depends on decreasing error phenomena, significantly influenced by audit role and effect (Antohe et al, 2020). Public audit has an essential role in safeguarding financial resources, in promoting accountability of entities involved in the absorption of EU funds (Lungeanu, 2015).

The audit of operations covers the actions of tracking the public financial resources which are lost through negligence, irregularities or fraud. The need for operational external public audit derives from the complexity of programs financed from European funds, from activities and obligations of beneficiaries and institutions involved in programs management and implementation, and also from the requirement to fight against waste in the management of funds, against bureaucracy, prevention of dysfunction that can occur in the work of the actors mentioned above. Within the audit of operations, the auditor must critically assess the validity of the public procurement procedures and the contracts for services, supplies and works execution and those who question the reliability of documents (Lungeanu, 2015). We make this assumption (Hypothesis 1) based on the increased experience in the application of existing legislation and the clarification of the implementing rules found in SCF guidelines over time.

H1: Irregularities (quantified by ineligible expenditure) has a decreasing trend through the application of the audit of operations and the preventive effect manifested in a longitudinal view.

The change process initiated by audit recommendations finishes with the follow-up audits (Torres et al., 2019). This procedure was legalised in Romania in 2015, after several years in which reality proved that the effects of the audit were not effectively felt as lessons

learned. Romania, as continental European countries sought, as Torres et al. (2019) said to modernise their traditional bureaucracy, making it more professional and efficient, but felt that the traditional bureaucracy had virtues that should be preserved (probity, predictability, continuity, greater attention to the law). In this context, some changes are made in extended time. Between 2008 and 2014, the audit legislation proved insufficient to generate a significant impact addressed as a corrective effect. This is why, the follow up audit have, for Romanian case, the main aim to monitor the implementation of audit recommendations.

Renart et al. (2008) analyse numerically, by error category and country groups, according to the moment of accession to the EU, the irregularities and weaknesses detected by the European Court of Auditors for funds implemented between 2000 and 2004. It notes that over time, based on experience and improved legislation, the number of errors decreases. In line with Renart et al. (2008), this hypothesis (H2) tests the effect of the follow-up audit process, which generates the prevention of replication of same errors, having over the years studied a tendency of eradication or significant decrease based on the experience gained at the level of the audit body and the beneficiary.

H2: Irregularities decrease numerically over time as a result of follow-up audit application and the improvement effect manifested in a longitudinal view.

3 Research Framework

Based on these regards, we want to analyse the main irregularities detected during the audit missions carried out by the Romanian Audit Authority over all operational programmes implemented in Romania in 2007-2020.

3.1 Data selection

Starting from the national legislations (OG 79/2003; OG 20/2008; OG 66/2011), we defined the irregularities in accordance with the approach of the Audit Authority in the Annual Public Reports of the Court of Accounts of Romania (section External Public Audit carried out by the Audit Authority), structured on 3 levels:

1) Organisational/administrative irregularities (O.I.) refer here to pre-contractual issues, i.e., irregularities encountered in the project appraisal process, irregularities in the organisation and functioning of Managing Authorities and Intermediate Bodies, as well as gaps in the regulations, issued by Managing Authorities at the level of Operational Programmes.

2) Procedural irregularities (P.I) refer to cases of non-compliance with various legal provisions, from Community legislation, to procedures issued by the Managing Authorities at the level of Operational Programmes.

3) Implementation irregularities (I.I.), capture issues related to the actual implementation of projects, improperly managed either by beneficiaries or by Managing Authorities or Intermediate Bodies.

In order to identify them, the Audit Authority² carried out audit missions (audit of operations and follow-up) between 2008 and 2020, as follows (Table 4):

Table 4. Audit missions 2008-2020

Year	Number of audit missions		Reports' reference basis (years)
2008	65		2007**- 2013
2009	39		
2010	43		
2011	76		
2012	82		
2013	48		
2014	47		2007-2013
2015	45		
2016*	40	10	
2017	21	43	
2018	2	73	
2019	7	55	
2020	1	69	2014-2020

Source: author's projection based on information from the Annual Public Reports of the Court of Accounts of Romania

* Since 2016 audit/final control reports are published for financial periods 2007-2013 and 2014-2020. For period 2016-2020, first column of audit missions reflects audit reports for 2007-2013 and second one audit missions for 2014-2020.

** 2007 is the first year after accession to the European Union when Romania implements structural funds. This is the reason why no audit reports were reported in 2007.

The increasing number of audit missions from one year to the another can be also explained by the increasing level of absorption of funds and, implicitly, by the increasing number of payments to beneficiaries, in which context it is necessary to growth the audit process effectively done.

More than that, the presence of follow up audit reflect the increased role of coercive audit's function (Figure 1).

²Law 94/1992 on the organization and functioning of the Court of Accounts of Romania, with subsequent additions and amendments, specifies that the Audit Authority is the only national authority competent to carry out external public audit for the non-reimbursable funds granted to Romania by the European Union through the structural instruments.

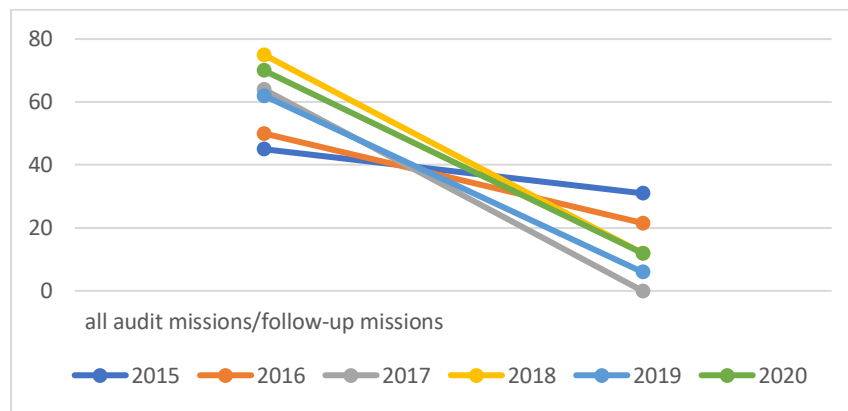


Figure 1. Follow up audit missions (%)

All the data are taken from The Romanian Court of Accounts site (<https://www.curteadeconturi.ro/comunicate-de-presa/rapoartele-de-audit-si-de-follow-up-sunt-accesibile-cetatenilor-si-partilor-interesate>), following the evolution over time (2008-2020) of the irregularities reported in the audit missions' reports, carried out by the Romanian Audit Authority. The data were online accessed between October-December 2022.

3.2 Methodology research

Through "meaning-oriented" content analysis (White & Marsh, 2006), we conducted phenomenological research. The data collection technique is a direct one, namely observation. Specifically, the collection of data and information was carried out through documentation. The documents used were mostly primary documents because this field of study, European funds, does not have a very rich scientific background, unlike the regulatory one.

In order to validate the hypotheses formulated in the theoretical framework, we used a quantitative, rational approach to measure the degree of achievement of the objectives proposed by the audit missions, quantified through the irregularities found at the level of the Audit Authorities of the 7 Operational Programmes implemented by Romania in the period 2007-2020.

The longitudinal analysis (2008-2020) of the Annual Public Reports of the Court of Accounts of Romania has generated the identification of the evolution over time of the irregularities found during the audit missions carried out by the Audit Authority and their coercive effect through the follow-up effect (2014-2020).

The study of these reports was organised in two levels, a first level dedicated to the analysis of the conclusions of the audit of operations and a second level dedicated to the analysis of the follow up audit.

Through a critical and causality approach at the same time, we aimed at validating/validating the hypotheses formulated. With the support of applied economic

research we tested whether the purpose and objectives of the researched audit are pursued and fulfilled by the "actors" involved in such an assignment.

4 Results and discussions

4.1 Results through the audit of operations' lens

The objective of the operations audits of the annual public reports of the Court of Auditors of Romania for the period 2008-2020 is to obtain reasonable assurance that the statements of expenditure presented to the European Commission are correct and the underlying transactions are legal and regular.

Based on the content analysis of the analysed reports, we identified the main causes for the non-deductibility of expenditure, respectively types of irregularities/errors in the management of non-reimbursable funds (Table 5).

Table 5. Types of irregularities/errors in the management of non-reimbursable funds

N1	Incorrect use of the criterion 'expert experience' as an evaluation factor for the award of certain service contracts (deviation from public procurement law)
N2	Failure to comply with the principles underlying the award of a public procurement contract, namely: non-discrimination, transparency, efficiency in the use of funds. Thus, we include in this category irregularities such as: incorrect and/or discriminatory application of the award criteria, use of restrictive selection criteria, reduction of the minimum period between the date of publication of the contract notice and the deadline for submission of tenders, failure to ensure transparency in the scoring of evaluation factors, failure to respect the principle of equal treatment in the tender selection process, non-application of competitive procedures and use of direct procurement.
N3	The existence of a conflict of interest both in the context of procurement and with regard to the persons involved in the process of using Community funds
N4	Failure to meet the condition of "unforeseeable circumstances" generally involves the use of the negotiated procedure without publication of a notice for the award of additional works which do not meet the situations described by the directives/rules as arising from unforeseeable events (deviation from public procurement law)
N5	Properties and services that do not conform to those required by the technical design or are executed without complying with the specifications in the tender or without being expressly used for the purpose of the project or not found on site (deviation from public procurement law)
N6	Expenditure which does not meet the eligibility criteria, such as: unreasonable, unjustified expenditure which does not comply with the requirements of sound financial management
N7	Deficiencies concerning salaries and fees in the sense of their payment without legal basis

N8	Delegations, grants and scholarships awarded in breach of national and Community legislation and/or in breach of contractual provisions
N9	Failure to meet progress indicators and to comply with the provisions of the grant contract
N10	Other irregularities: use of the bank account opened on the project for other purposes, double funding, exchange rate differences, etc.

Source: author's projection

As we mentioned before, we present below the typology of ineligible expenditure observed at the level of each operational programme, in the period 2008-2014, respectively the frequency of occurrence, motivating their occurrence according to Romanian particularities (Table 4). We have chosen this approach in order to provide a critical analysis of the phenomenon. The first stage (2008-2014) of the analysis detects the typology of errors by audit of operations. The second stage (2015-2020) is focuses on the frequent types of errors identified previously, tracking them both in terms of manifestation and self-correction capacity through the follow-up effect. The first stage represents for our study the testing/implementation/adaptation period and the second one the maturation period, where the coercive effect of the audit missions should become evident.

Table 6. Ineligible expenditure by type of error (2008-2014)

Year	Error/Cause of ineligibility	Irregularity-related ineligible expenditure (RON thousand)*	Total ineligible expenditure/year of implementation	Proportion of irregularity in total ineligible expenditure (%)
2008	N1	-	1,25	
	N2	-		
	N3	-		
	N4	-		
	N5	-		
	N6	-		
	N7	-		
	N8	-		
	N9	-		
	N10	1,25		100%
2009	N1	564,1	867,96	65%
	N2	134,53		15,5%
	N3	5,19		0,60%
	N4	-		-
	N5	-		-
	N6	36,62		4,22%
	N7	87,08		10,03%
	N8	19,2		2,2%
	N9	-		-
	N10	21,24		2,45%
2010	N1	50,81	38.696,18	0,2%

	N2	30.316,99		78,25%
	N3	4.413,78		11,36%
	N4	3.232,57		8,25%
	N5	356,53		1%
	N6	187,84		0,5%
	N7	126,26		0,4%
	N8	9,74		0,03
	N9	-		-
	N10	1,66		0,01
2011	N1	-	13.410	-
	N2	7.116		53%
	N3	94		0,7%
	N4	-		-
	N5	3.566		27%
	N6	1.471		11%
	N7	84		0,6%
	N8	48		0,3%
	N9	192		1,4%
	N10	839		6%
2012	N1	-	20.840	-
	N2	10.823		52%
	N3	285		1,4%
	N4	-		-
	N5	1.319		6%
	N6	2.656		13%
	N7	32		0,2%
	N8	86		0,4%
	N9	229		1%
	N10	5.410		26%
2013	N1	2	18.397	0,1%
	N2	11.484,5		62,43%
	N3	-		-
	N4	-		-
	N5	1.509		8,2%
	N6	2.645,5		14,34%
	N7	243		1,32%
	N8	152		0,82%
	N9	237		1,25%
	N10	2.124		11,54%
2014	N1	-	58.160,5	-
	N2	12.512		21,52%
	N3	7,5		0,01%
	N4	41.663		71,64%
	N5	2.430,5		4,18%
	N6	693,5		1,19%
	N7	159		0,27%

N8	36	0,06%
N9	19,5	0,03%
N10	639,5	1,1%

Source: author's projection

* As reference point in order to appreciate the RON values, we present the annual average rate EUR vs RON published by Romanian National Bank (BNR, 2023): 2008 (1 EUR= 3,6827 RON); 2009 (1 EUR= 4,2373 RON); 2010 (1 EUR = 4,2099 RON); 2011 (1 EUR = 4,2379 RON); 2012 (1 EUR = 4,4560 RON); 2013 (1 EUR= 4,4190 RON); 2014 (1 EUR= 4,4446 RON).

Based on the information obtained from the operational audit missions, we will now classify the causes of ineligible expenditure in operational programmes according to the rate of ineligible expenditure caused by these irregularities in the total ineligible expenditure for each year analysed.

We propose a ranking of these irregularities (Table 7) according to the average of the period 2009-2014*, calculated as a simple arithmetic average between the annual weights, as follows:

$$Av = (P2009 + P2010 + P2011 + P2012 + P2013 + P2014) / 6$$

* We have removed from the average calculation the year 2008, for which we do not have reported irregularities on the typology presented.

Table 7. Synthesis - Ineligible expenditure by type of error (2008-2014)

Error/Cause of ineligibility	Type of irregularity	Average period (%)
N1	Misuse of "expert experience"	10,88
N2	Non-compliance with procurement principles	47,12
N3	Conflict of interest	2,35
N4	Breach of "unforeseeable circumstances"	13,32
N5	Breach of BLS procurement conditions	7,73
N6	Non-compliance with eligibility conditions	7,38
N7	Deficiencies regarding salaries and fees	2,14
N8	Ineligible travel, grants and scholarships	0,62
N9	Non achievement of progress indicators ...	0,61
N10	Other irregularities	7,85

Source: author's projection

Thus, we can note that the irregularities with the highest rate at the level of the period analysed are those related to public procurement. The fact that these occurred is largely due to inaccuracies that persist in national legislation and in the instructions given by the Management Authority (MA) or Intermediary Organism (IO) at Operational Programs' level, but also to their misapplication by the NREF' beneficiaries.

According to the analysis of the typology of irregularities, it is clear that those related to public procurement are predominant. Thus, since 2015, the reports of the Audit Authority differentiate the causes of irregularities into two main categories:

- Non-compliance with the legal/procedural provisions applicable to purchases made by beneficiaries;
- Non-compliance with eligibility conditions of expenditure claimed for reimbursement by beneficiaries of funds.

4.2 Discussions regarding the audit of operations' impact

In order to have continuity in the analysis and interpretation of the collected data, we remove SOPE [POSM] from our study because, as can be seen in Table 1, in the period 2014–2020, this operational programme no longer exists.

For the other six operational programmes in the study, we search to observe a causal link between the proportion of audited expenses and the proportion of irregularities found, i.e., we considered how the sample chosen in one year for audit (proportion of audited expenses in total expenditure) is influenced by the irregularities found in the previous year. (Table 8; Appendix 1)

Table 8 Financial impact of irregularities found in audited expenses

Year	Total expenses (RON)*	Audited expenses (RON)*	Rate of audited expenses in total expenses (%)	Errors detected with financial impact in audited expenses (RON)*	Rate of irregularities/errors in audited expenses (%)
2015	12.560.444	3.603.266	28,69	44.788	1,24
2016	18.249.688	5.269.002	8,87	231.570	4,39
2017	4.184.965	2.253.829	3,86	35.880	1,59
2018	8.682.245	7.348.479	4,64	38.380	0,52
2019	14.524.750	5.588.254	8,47	125.665	2,25
2020	12.719.243	4.028.547	1,67	56.377	1,40

Source: author's projection

*As reference point in order to appreciate the RON values, we present the annual average rate EUR vs RON published by Romanian National Bank (BNR, 2023): 2015 (1 EUR= 4,450 RON); 2016 (1 EUR= 4,4908 RON); 2017 (1 EUR = 4,5681 RON); 2018 (1 EUR = 4,6535 RON); 2019 (1 EUR = 4,7452 RON); 2020 (1 EUR= 4,8371 RON).

In Appendix 1, this dependency link can be seen in most operational programmes. In SOPT/OPLI [POST/POIM], there is an increase in the share of audited expenditure to almost the maximum (98,97%) in 2017, when the share of irregularities reaches 1,33%. Thus, reaching a reasonable level of detected irregularities, from the following year, the audit sample decreases. In the following two years (2018 and 2019), even though the audit sample decreases, the share of irregularities remains low (0,12–0,17), but from the third year onwards, as the audit sample decreases, an increase in the share of irregularities is observed.

The same can be observed for SOPHRD/OPHC [POSDRU/POCU], as long as the share of audited expenditure is high and increasing, irregularities are less. When, in 2018, irregularities reach 1,02% (the lowest level), in 2019 the share of audited expenditure decreases drastically and irregularities multiply four times. Automatically, in 2020, the audit sample increases and the share of irregularities decreases again.

At the ROP [POR], however, we observe an increase in the audit sample until 2017, reaching 79,12%, and then a decrease to 10,67% in 2020. During this period, the variation in irregularities detected does not exceed 4%. This shows discipline and ownership over time of the findings made during audit missions, but also the experience gained which reduces the risk of making mistakes. On the other hand, as regards the SOPIEC/OPC [POSCCE/POC] and the OPTA [POAT], we observe an increase in the audit sample until 2018, when the share of irregularities tends towards zero. When the share of audited expenditure starts to decrease from 2019 onwards, the OPTA [POAT] manages to keep irregularities close to zero, but on the SOPIEC/OPC [POSCCE/POC] we observe an increase in irregularities found. So, when the control (audit) shows signs of receding, irregularities reappear on the scene. The OPDAC/APAC [PODCA/POCA] is the operational programme which, since 2015, has the highest share of audited expenditure, reaching 100% in 2017. Irregularities detected during this period are close to zero. But from 2018, decreasing the audit sample, irregularities increase, reaching 21,75% in 2019. However, in 2020, the audit sample is not increased, as expected.

Overall, in Table 8, since 2016, there is a higher increase in the share of audited expenditure, getting in 2018 the maximum share of 84,64%, because in this timeframe the programmes for the 2007-2013 financial year are being closed and on final claims the controls are more significant and comprehensive. This leads to a reduced share of irregularities (0,52%) and consequently from 2019 the audit sample is reduced.

Then, continuing the analysis of the previous period (2008-2014), we tried to capture the evolution, since 2015, of the irregularities found during the audit missions of the operations carried out. We recall that, since 2015, irregularities are reported by the Audit Authority only on the 2 levels: irregularities in the field of public procurement (IPP) and irregularities caused by non-compliance with eligibility conditions (IEC). Thus, analysing the typology of irregularities by the 6 operational programmes (Appendix 1), we found that, for most programmes, the share of IPP has decreased until 2017. This year, for all programmes, IPP is clearly lower than IEC. The explanation for this is that by 2017, most of the former 2007-2013 projects will be closed, and at the end of the projects no more purchases are made, they are no longer justified. From 2018 onwards, however, on certain operational programmes (generally those which by their specific activities require massive procurement), IPPs are predominantly reappearing. On the other hand, we have 2 operational programmes (SOPHRD/OPHC [POSDRU/POCU] and OPTA [POAT]) which, in all the 6 years analysed, show an insignificant (even zero) share of IPPs compared to IECs. Thus, we can say that, although irregularities persist both at IPP and IEC level, in different variations from one programme to another, from one year to another, nevertheless, the results are encouraging, the share of irregularities found during operational audit missions

does not exceed in the last years, 2,25% (see last column in Table 8) We believe that the reason for this improvement is the legislation in the area of non-reimbursable funds, which has become increasingly better, clearer, easier to understand and easier to apply. Another reason is the experience gained by beneficiaries implementing projects financed by the Structural Funds. We would also like to believe that the most valid reason for these improvements is the coercive force of the audit of operations manifested over time through observations made during audit missions and taken into account by beneficiaries. This can be proven by linking the irregularities found by the operational audit to the results of the follow-up missions.

4.3 Results and discussions through the follow-up' lens

Follow-up can be understood as a process of monitoring and evaluating the real effects (Jalava et al., 2015; Keken et al., 2022) of audit for projects that were evaluated in previous periods. In Romania, getting familiar with the concept of European funds was quite difficult, given the novelty of the concept. This is why, after the 2008-2014 phase, the implementation of follow-up appeared as a legal requirement, necessary to measure the coercive effect of audit missions and the degree of ownership of error correction.

By correlating the data in Table 8 with Appendix 2 (from which we have removed observations specific to closed programmes), we observed that when the degree of implementation of observations made during audit missions increases, the share of irregularities in total audited expenditure decreases in the following year (Table 9). Basically, when audit observations are implemented, irregularities decrease.

Table 9 - Link between the irregularities found and the degree of implementation of the observations made by the auditors

Year	Rate of irregularities in total audited expenditure (%)	Follow-up	
		Implementation's degree (%)	Non-Implementation's degree (%)
2015	1,24	79,23	20,77
2016	4,39	94,8	5,20
2017	1,59	100	0
2018	0,52	84,91	15,09
2019	2,25	94,20	5,80
2020	1,40	88,52	11,48

Source: author's projection

The degree of implementation of the auditors' observations remains high in all years, with small fluctuations (Appendix 2). There is a clear increase trend between 2015 and 2017, since when the percentage relatively stabilises (above 85%). However, there are small fluctuations in the degree of irregularities. Thus, we can deduce that the low degree of

irregularities is directly dependent on the existence of audit procedures and, therefore, on the implementation of observations. The pressure of these audits has obvious impacts on the rigour of the use and recording of NRSFs.

5 Conclusions

Our study presents in a holistic way the problems of European funds and the problems generated by the interaction with them in terms of reporting errors identified after external audits, a common case in beneficiary countries. Starting from addressing the need and the impact of these factors in Romania, an emerging, EU member, former communist country, we followed the evolution of the typology and structure of reporting irregularities (2008-2020), capturing their evolution and how experience and familiarity with this funding system has diminished the unfavourable impact of errors. All these developments were based on the analysis of the public reports of the Romanian Court of Auditors issued following external audits.

However, what we want to emphasize with this study is not a criticism of the regulations, nor a reproach to the beneficiaries, but a remark on the auditing duties of these funds. In line with Bradley (2006), our study analyses the interaction and interdependence between the size of the Structural Funds and the influencing factors (e.g., volume of errors, volume of ineligible expenditure) in relation to the reactions and interactions taking place in the national economy (i.e., external audit and its effects).

As we have noted both in the analysis of the results of the audit of operations and of the follow-up audit, the irregularities with the highest weight are continuously repeated in different variations from one year to another. It is encouraging that some irregularities, approached longitudinally, show a significant downward trend in the public reports of the Court of Auditors, our reporting basis. This validates H1 and H2. However, the repetitiveness of irregularities (e.g., in the case of public procurement) may be motivated differently across the two intervals. In the period 2008-2014, the coercive force of audit missions is directly dependent on the existence of audit of operations. In the stages where the share of missions decreases, the number of errors increases. Subsequently, in the 2015-2020 period, through the experience gained and the follow-up effect, a significant improvement is observed.

Another aspect influencing the outcome is, in our opinion, the fact that the annually scheduled audit missions were not fully carried out. In this context, irregularities remained undetected in time. In addition, projects were audited a significant time after their completion, so that some irregularities could not be detected early and corrected during the audit. As a result, many beneficiaries of EU funds persisted in their errors.

We believe that if the audit missions had also placed greater emphasis on following up the implementation of recommendations made in previous missions, many of the irregularities detected would not have recurred. This becomes evident in the period 2015-2020. We also believe that the warning signals raised by the audit missions must be echoed

in national regulations, which must be constantly improved, updated and adapted to avoid any misinterpretation.

The implementation of the suggestions made in the study may lead to an increase in the access/implementation of structural funds, a source of funding on which Romania is dependent. The fact that in the 2007-2013 period the actual absorption rate is 61.57% for the 7 implemented Operational Programmes (MEIP, 2022), and in the 2014-2020 period the absorption rate of European funds achieved by Romania is 67% (MEIP, 2022), demonstrates once again the importance, the relevance of the results and the topicality of our study.

Wegener et al. (2011) note shortcomings in terms of data reporting and uniform auditing of projects financed by European funds such as: the existence of legislative formulations that leave room for interpretation, frequent legislative changes, lack of staff, including qualified staff. Our future research will relate the results obtained in this study to these motivations, looking for a particular explanation through influencing factors.

Limitations of the study can be quantified by the unintentional omission of some data, given the very large volume of documents analysed (7 operational programmes over a period 2007-2020) or the existence of possible reporting errors by the reporting bodies, which is beyond our control.

References

- Antohei V-M, Zlati ML, Ionescu RV, Neculita M, Rusu R, Constantin A. (2020). *Attracting European Funds in the Romanian Economy and Leverage Points for Securing their Sustainable Management: A Critical Auditing Analysis*. Sustainability, 12(3), pp 5458, <https://doi.org/10.3390/su12135458>
- Arens A. and Loebbecke J. M. (2003), Audit, an integrated approach [Audit, o abordare integrate], Editura Arc, Chisinau.
- Asare, I., Kong, Y., & Tampuri Jnr, M. Y. (2020). *Descriptive Analysis on Management and Utilization of District Assemblies Common Fund (DAF) from 2015–2018: Evidence of Fiscal Irregularities from Ghana*. IOSR Journal of Humanities and Social Science (IOSR-JHSS).
- Becker, S. O., Egger, P. H. and von Ehrlich, M. (2018). *Effects of EU Regional Policy: 1989–2013*, Regional Science and Urban Economics, Elsevier, 69(C), pp. 143–152.
- Beugelsdijk M. and Eijffinger C.W. (2005). *The Effectiveness of Structural Policy in the European Union: An Empirical Analysis for the EU-15 in 1995–2001*, Journal of Common Market Studies, Wiley Blackwell, 43(1), p. 37–51, March.
- Botzoris, G. and Koudoumakis, P. (2013). *A New Methodological Approach for the Parameterization of the Level of Development and Hysteresis of the European Union Regions*. Journal of Economy, Business and Financing. 1 pp. 73–81.
- BNR (2023). Romanian National Bank, available online at: <https://www.curs-valutar-bnr.ro/curs-valutar-mediulunar>
- Bradley, J. (2006). *Evaluating the Impact of European Union Cohesion Policy in Less-developed Countries and Regions*. Regional Studies, 40(2), pp. 189 – 200

Dall'Erba D. and Fang F. (2017) *Meta-analysis of the impact of European Union Structural Funds on regional growth*, Regional Studies, 51(6), pp. 822-832, DOI: 10.1080/00343404.2015.1100285

Dall'Erba, S. and Le Gallo, J. (2008) *Regional convergence and the impact of European structural funds over 1989–1999: A spatial econometric analysis*. Papers in Regional Science, 87(2), pp. 219-244

Ferry, M., Gross, F., Bachtler, J., McMaster, I. (2007), *Turning Strategies into Projects: the implementation of 2007-2013 Structural Funds Programmes*. IQ-Net Thematic paper No. 20(2), European Policies Research Centre, University of Strathclyde

Georgescu, Maria-Ana, and Emilia Herman. (2019), *Productive Employment for Inclusive and Sustainable Development in European Union Countries: A Multivariate Analysis*, Sustainability 11(6), pp. 1771, <https://doi.org/10.3390/su11061771>

Grosu, M. and Mihalciuc, C. C. (2020). *Audit of Projects Financed from EU Funds and the Financial Impact of Irregularities Reported in Romania in the Last Decade*. European Finance, Business and Regulation, May, p. 363, ISBN: 978-606-714-599-1

Hnydiuk, I., Datsenko, G., Krupelnyska, I. H., Kudyenko, O., & Prutska, O. (2021). *Audit of budget programs in European Union countries*, Universal Journal of Accounting and Finance, 9(4), pp. 841-851.

Horvat, A. (2005). *Why does Nobody Care about the Absorption? Some Aspects Regarding Administrative Absorption Capacity for the EU Structural Funds in the Czech Republic, Estonia, Hungary, Slovakia and Slovenia before Accession*. WIFO Working Papers, No. 258

Ienciu A. I. and Bonaci C.G. (2013), *External public audit in European funded projects* [Auditul public extern în cadrul proiectelor cu finanțare europeană], Editura Eikon, Cluj Napoca, Romania

Jalava, N., Joensen, J. S. and Pellas, E. (2015). *Grades and rank: Impacts of non-financial incentives on test performance*. Journal of Economic Behaviour and Organization, 115, pp. 161-196.

Kassem, R. and Higson, A. (2016). *External Auditors and Corporate Corruption: Implications for External Audit Regulators*. Current Issues in Auditing. Doi:10.10.2308/ciia-51391.

Katsarova, I., 2013. The (low) absorption of EU Structural Funds. Library of the European Parliament (<http://www.library.ep.ec>, <http://libraryeuroparl.wordpress.com>)

Keken, Z., Hanušová, T., Kulendík, J., Wimmerová, L., Zítková, J. and Zdražil, V. (2022). *Environmental impact assessment—The range of activities covered and the potential of linking to post-project auditing*. Environmental Impact Assessment Review, 93, 106726.

Kyriacou A.P, Roca-Sagalés O. (2012). *The Impact of EU Structural Funds on Regional Disparities within Member States*. Environment and Planning C: Government and Policy, 30(2):267-281. doi:10.1068/c11140r

Law no. 94/1992 - *Organization and functioning of the Court of Accounts was republished in the Official Gazette of Romania*, Part I, no. 282 282 of 29 April 2009

Litan, C., Mare, C., Popa, I., 2013. *A brief perspective on the regional distribution of SOPHRD financing in Romania*. Review of Economic Studies and Research Virgil Madgearu, VI (2), pp. 81-98

Lungeanu, Emil. (2015). *Considerations Regarding the External Public Audit of Reimbursable Funds*. Procedia Economics and Finance. 20. 10.1016/S2212-5671(15)00084-2.

Mare, C., Span, G., Popa, I. E. (2013). *Environmental Protection in Romania through European Structural Funds – A Spatial Econometrics Approach*. The Annals of the University of Oradea, pp.716-725

MEIP (2022) Ministry of European Investment and Projects (2022) - State of absorption of EU funds, available online at <https://mfe.gov.ro/stadiul-absorbtiei-fondurilor-ue/> (accessed at 15.11.2022)

Polverari, L. and Bachtler, J. (2005). *The Contribution of European Structural Funds to Territorial Cohesion*. *The Town Planning Review*, 76(1), pp. 29–42.
<http://www.jstor.org/stable/40112628>

Renart, Marcos Antón, Enguix, Ma del Rocio Moreno and Hernández-Mora, José Antonio Vidal, (2008), *Errors and weaknesses detected by the European Court of Auditors in the reports on the European Structural Funds 2000–2004*, *Accounting forum*, Elsevier, 32(2), pp. 148-161.

Rodríguez-Pose and Fratesi (2004). *Between development and social policies: the impact of European Structural Funds in Objective 1 regions*. *Regional Studies*, 38(1), pp. 97–113

Torres, L., Yetano, A. and Pina, V. (2019). *Are performance audits useful? A comparison of EU practices*. *Administration & Society*, 51(3), pp. 431-462.

Văduva, G. (2018). *The Powers of Power A possible configuration of the new more or less visible politics of spheres of influence in the European Union* *Strategic Universe Magazine*, 9(33), pp. 9-42.

Wegener, M. (2011). *The Carbon Disclosure Project, an evolution in international environmental corporate governance: motivations and determinants of market response to voluntary disclosures*, available online at <https://dr.library.brocku.ca/handle/10464/3088>

White, M. D. And Marsh, E. E. (2006). *Content analysis: A flexible methodology*. *Library trends*, 55(1), pp. 22-45.

Appendix A - Financial impact of irregularities found in audited expenditure at the level of operational programmes

YEAR	Operational Programs	Total expenditure	Audited expenses	Rate of audited expenditure in total expenditure (%)	Errors detected with financial impact in audited expenditure	Rate of irregularities/errors in audited expenditure (%)	Total errors from which it is separated	Non-compliance with public procurement procedures	Failure to comply with eligibility conditions	Public Procurement Error Rate (%)	Ineligible error rate (%)
2015	SOPE	4.159.809	748.086	17,98	8.274	1,11	8.274	7.698	576	93,04	6,96
	SOPT	1.087.549	775.475	71,30	2.542	0,33	2.542	207	2.335	8,14	91,86
	ROP	1.354.668	245.993	18,16	8.847	3,60	8.847	5.997	2.850	67,79	32,21
	SOPIEC	3.415.344	1.373.519	40,22	16.610	1,21	16.610	2.759	13.851	16,61	83,39
	OPTA	211.162	168.734	79,91	788	0,47	788	0	788	0,00	100,00
	SOPHRD	2.159.914	157.912	7,31	6.240	3,95	6.240	322	5.918	5,16	94,84
	OPDAC	171.998	133.547	77,64	1.487	1,11	1.487	1.144	343	76,93	23,07
2016	SOPE	3.507.778	913.454	26,04	23.398	2,56	23.398	2.484	20.914	10,62	89,38
	SOPT	3.217.329	2.322.921	72,20	192.586	8,29	192.586	120.252	72.334	62,44	37,56
	ROP	4.139.638	376.587	9,10	5.209	1,38	5.209	341	4.868	6,55	93,45
	SOPIEC	4.754.727	1.320.444	27,77	2.764	0,21	2.764	0	2.764	0,00	100,00
	OPTA	262.109	204.629	78,07	143	0,07	143	6	137	4,20	95,80
	SOPHRD	2.275.828	55.352	2,43	3.794	6,85	3.794	75	3.719	1,98	98,02
	OPDAC	92.279	75.615	81,94	3.676	4,86	3.676	138	3.538	3,75	96,25
2017	SOPE	610.106	370.195	60,68	2.399	0,65	2.399	1.393	1.006	58,07	41,93
	SOPT	171.914	170.146	98,97	2.265	1,33	2.265	0	2.265	0,00	100,00
	ROP	401.171	348.968	86,99	870	0,25	870	16	854	1,84	98,16

	SOPIEC	516.617	331.180	64,11	9.153	2,76	9.153	0	9.153	0,00	100,00
	OPTA	0	0	0,00	0	0,00	0	0	0	0,00	0,00
	SOPHRD	2.482.259	1.030.442	41,51	21.186	2,06	21.186	285	20.901	1,35	98,65
	OPDAC	2.898	2.898	100,00	7	0,24	7	0	7	0,00	100,00
2018	OPLI	6.828.203	6.057.392	88,71	7.221	0,12	7.221	5.230	1.991	72,43	27,57
	ROP	466.847	369.391	79,12	30.483	8,25	30.483	15	30.468	0,05	99,95
	OPC	751.690	496.464	66,05	15	0,00	15	0	15	0,00	100,00
	OPTA	354.091	255.798	72,24	12	0,00	12	0	12	0,00	100,00
	OPHC	110.020	54.823	49,83	558	1,02	558	30	528	5,38	94,62
	OPAC	171.394	114.611	66,87	91	0,08	91	51	40	56,04	43,96
2019	OPLI	3.821.300	3.087.428	80,80	5.309	0,17	5.309	462	4.847	8,70	91,30
	ROP	5.424.253	1.823.431	33,62	86.795	4,76	86.795	61.457	25.338	70,81	29,19
	OPC	846.331	346.272	40,91	1.171	0,34	1.171	1.035	136	88,39	11,61
	OPTA	204.815	75.010	36,62	0	0,00	0	0	0	0,00	0,00
	OPHC	3.940.807	131.270	3,33	5.232	3,99	5.232	5	5.227	0,10	99,90
	OPAC	287.244	124.843	43,46	27.158	21,75	27.158	14.351	12.807	52,84	47,16
2020	OPLI	3.770.549	2.715.110	72,01	20.512	0,76	20.512	20.463	49	99,76	0,24
	ROP	4.657.834	496.792	10,67	19.758	3,98	19.758	12.779	6.979	64,68	35,32
	OPC	816.921	360.204	44,09	11.414	3,17	11.414	11.267	147	98,71	1,29
	OPTA	346.436	164.560	47,50	1	0,00	1	0	1	0,00	100,00
	OPHC	2.808.823	215.818	7,68	4.462	2,07	4.462	55	4.407	1,23	98,77
	OPAC	318.680	76.063	23,87	230	0,30	230	229	1	99,57	0,43

Appendix B. Follow up audit (implementation of findings)

Year	Total	Implemented	%	In progress or partially implemented	%	Unimplemented	%	Closed	%
2015	445	133	29,89	218	48,99	92	20,67	2	0,45
2016	789	349	44,23	399	50,57	41	5,20	0	0,00
2017	1010	440	43,56	426	42,18	0	0,00	144	14,26
2018	265	105	39,62	120	45,28	40	15,09	0	0,00
2019	224	125	55,80	86	38,39	13	5,80	0	0
2020	636	270	42,45	293	46,07	73	11,48	0	0
TOTAL	3369	1422	42,21	1542	45,77	259	7,69	146	4,33