MONETARY UNIT SAMPLING UNDER ISA 530: THEORETICAL FOUNDATIONS AND PRACTICAL IMPLICATIONS

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Abstract
Given the ever-growing volume of financial and accounting data, the use of sampling in a statutory audit mission becomes essential to obtain a reasonable degree of assurance without the exhaustive verification of the population under review. This paper aims to investigate the statistical implications of Monetary Unit Sampling (MUS) in auditing, according to the requirements of the International Standard ISA 530, a fundamental reference point on the design, selection and evaluation of samples. The research methodology includes the literature review of several relevant scientific papers and the practical application of systematic sampling by monetary units in a case study regarding the testing of a Romanian private organization's trade claims. In terms of findings, the study demonstrates the complete evaluation phase of the sample by projecting the identified misstatements, calculating the upper misstatement limit, and comparing it with the materiality threshold to formulate a well-founded audit conclusion. The conclusions underline the contributions of ISA 530 to improving the audit quality and transparency, as well as the need to strengthen the statistical skills of auditors for an optimal application of the professional standards.

Keywords
audit sampling, monetary unit method, International Standards on Auditing, ISA 530, statistical methods.

JEL Classification
C02, C83, M42.

Introduction

In a world marked by continuous changes in the business environment, shaped by economic, medical, military or other types of crises, the importance of conducting financial audits within companies – particularly for public interest entities (PIE) – has become increasingly significant (Dobre, 2008). In general terms, the financial audit may be defined as an activity carried out by an independent and competent person, which involves the examination of the financial, accounting and tax records accuracy, as well

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as the credibility of a company's transactions system (Dobre, 2008 and Teodorescu & Chivulescu, 2022). The primary objective of a financial audit, set by the International Standard on Auditing ISA 200, is to enhance the degree of confidence of intended users in the financial statements by expressing an opinion on whether they are prepared, in all material aspects, in accordance with an applicable financial reporting framework (IAASB, 2020), offering a clear, true, fair, and complete view of the organization's financial position, performance and stability at a specific point of time (Socol, 2017).

The methodological approach of any financial audit engagement can be structured into four essential phases (Arens et al., 2012), as follows: the planning of the mission and the definition of the audit methods used; the testing of transactions and internal control systems; continuing with the application of analytical procedures and detailed testing of account balances; and, finally, the overall activities review made by the engagement partner and the issuance of the audit report (Jaba et al., 2014 and Teodorescu & Chivulescu, 2022). The primary objective of such a mission is to enhance the users' confidence in published financial information (IAASB, 2020) and to provide a substantial level of assurance for the premise that the individual or consolidated statements of the audited company are free from material inaccuracies. To better facilitate the practical implementation of each of these stages, the auditor is required to obtain enough evidence that is both sufficient in quantity and appropriate in quality, regarding the existence and effectiveness of the internal control mechanisms, as well as the management's assertions related to transactions, account balances and other reported information that has an important value for the interested parts.

Thus, for the proper functioning of the audit activities and related procedures, the International Auditing and Assurance Standards Board (IAASB), together with the International Federation of Accountants (IFAC), established a set of regulations generally known as the International Standards on Auditing (ISA). These standards aim to guide the audits, reviews, assurances, and other related engagements, ensuring the unification and harmonization of professional practices at both internal (national) and external (international) levels, thereby supporting the consequent application of the audit-specific norms worldwide.

Usually, in practice, auditors frequently face the challenge of estimating the value of accounting errors arising during the preparation and presentation of the financial reports. The detection of such misstatements is carried out through detailed tests of transactions and account balances used by the audited organization, involving the identification of significant discrepancies between internal accounting records and information obtained from external confirmations provided by partners with whom the entity collaborates (Bulat, 2017). In general, when a company conducts a large number of transactions – depending on its nature of activity and the purposes for which it was created – obtaining exhaustive confirmations of the operations that took place becomes difficult, more costly and time-consuming, needing maybe as much time as it was necessary to realize them in the first place (Bulat, 2017 and Teodorescu & Chivulescu, 2022). As a response to this issue, the professional organisms developed and published the International Standard on Auditing ISA 530: *Audit Sampling*, which allows auditors to reduce their workload while maintaining a reasonable level of assurance regarding the detection of material errors and the extrapolation of the sample findings to the entire

population considered.

Among the statistical techniques permitted by the standard, the Monetary Unit Sampling (MUS) is widely recognized as a preferred method (Leslie et al., 1979 and AICPA, 2020) as it uses the individual monetary unit as the sampling basis and inherently directs the auditor's focus toward higher-value balances. Although MUS is a well-established standard procedure, the academic literature often lacks comprehensive empirical studies that demonstrate the complete practical transition from sample extraction to the final evaluation of projected errors against the materiality threshold. This paper addresses this research gap by providing an in-depth empirical illustration of monetary unit sampling adapted to a Romanian private organization context. Accordingly, the paper seeks to answer the following research questions:

RQ_1: Which are the theoretical foundations of audit sampling and how are they reflected in the requirements of ISA 530?

RQ_2: How can the systematic sampling on monetary units be practically applied to test account balances of an audited company, so that its results can be validly extrapolated to the entire population?

1. Review of the scientific literature

According to ISA 530 (IAASB, 2020), audit sampling can be defined as an application of audit procedures to less than 100% of the elements within a population such that all sampling units have a chance of selection, in order to provide the auditor with a reasonable basis on which to draw conclusions about the entire population (IFAC, 2018).

The standard applies when the auditor has decided to use sampling in performing audit procedures and it complements ISA 500 *Audit Evidence*, a norm which addresses the auditor's responsibility to design and perform procedures in order to obtain sufficient and appropriate evidence to justify their opinion. ISA 530 became effective for audits of financial statements issued for periods beginning on or after the date of December 15th, 2009, with the objective of enabling the auditor to form acceptable suppositions, regarding the population from which the sample was extracted (IAASB, 2020).

It is widely acknowledged that auditors must rely on their professional judgement when determining the amount of data required and whether the evidence obtained offers a proper basis for expressing conclusions (Slobodeanu, 2013). The sampling techniques present several advantages – such as cost reduction, improved service quality, faster information acquisition and access to otherwise difficult populations (Jaba, 2002 and Teodorescu & Chivulescu, 2022) – but also entails a few drawbacks, particularly the difficulty of obtaining a representative sample and the risk that material misstatements may not be selected and therefore remaining undetected by the auditor (Jaba, 2002).

The quality of a sample depends on the population's homogeneity level, the sampling method, the selection technique, the desired precision, the sample size and the acceptable costs (Jaba, 2002 & Jaba et al., 2014). The most common sampling methods mentioned in Appendix 4 of ISA 530 include: *the random selection* – applied by means of randomized number generators; *the systematic selection* – in which the number of units within the population is divided by the sample size in order to obtain a sample interval, and after choosing a random starting point, smaller than the minimum end of

the resulting interval, each sampling unit is subsequently selected by continuously adding (summing) the length of the interval to the preceded value determined; *the sampling based on monetary units* – where the size, selection and evaluation of the sample result in a conclusion expressed in monetary values; *the haphazard selection* – in which the auditor selects the sample without following a structured technique; as well as the *block selection* – involving the choice of one or more blocks of adjacent elements within the considered population (IAASB, 2020).

The International Standard on Auditing ISA 530 does not operate isolated, and it should be read in parallel with ISA 200 *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing* (IAASB, 2020). At the same time, ISA 530 is closely correlated with a broader set of standards, which govern the process of evidence collection and risk assessment in auditing. ISA 500 *Audit Evidence* contains the fundamental rules on which the existence of ISA 530 is based, the latter making fundamental references to the former on further discussion of the audit procedures used during the conduct of an engagement, as well as to the requirements on the accuracy and integrity of the information produced by the entity, which serves as a basis for sampling (IAASB, 2020).

The auditor shall also use the risk assessment procedures under ISA 315 *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment* for a full understanding of the internal control carried out by the audited enterprise. This knowledge is crucial for making decisions about whether to use sampling in control tests. ISA 320 *Materiality in Planning and Performing an Audit* contains the basis for establishing the materiality point for the calculation of the sampling interval, and ISA 330 *The Auditor's Responses to Assessed Risks* becomes relevant when the auditor's assessment of the risks includes the expectation that certain controls will function effectively, at which point the control tests are applied, which may also involve sampling (IAASB, 2020).

In essence, this suite of norms functions as a cohesive structural framework: ISA 315, ISA 320, and ISA 330 provide the architectural design and contextual foundation of the audit engagement, ISA 500 supplies the required raw material (the evidence), and ISA 530 acts as the definitive quality control mechanism. Through this mechanism, the auditor systematically tests a targeted selection of elements to obtain reasonable assurance regarding the integrity and reliability of the entire financial structure.

To operationalize this quality control mechanism, there are two primary approaches to audit sampling: statistical and non-statistical methods (Teodorescu & Chivulescu, 2022).

Statistical sampling uses probability theories for selecting and evaluating the results of an audit sample. This involves selecting the group of elements that have to be checked by applying specific mathematical formulas, which allows the auditor to draw a valid conclusion for the population from which the sample was chosen. On the other hand, *non-statistical sampling* is based more on the auditor's professional judgement, without the use of statistical theory in measuring sampling risk. However, according to ISA 530, regardless of whether a statistical or non-statistical approach is used, the auditor is required to project the misstatements found in the sample to the entire population. The fundamental difference is that statistical survey enables the quantitative measurement of

sampling risk, typically calculated by auditors following a 95% confidence level, which generates a sampling risk of 5% (Teodorescu & Chivulescu, 2022). In our case study, we pursue to explain the theoretical and practical ways of performing monetary unit sampling in auditing, outlining a rigorous methodology aligned with the requirements of ISA 530.

Thus, there will be presented some methods of sample selection, the determination of the sample size, the calculation of the sampling interval, and ultimately, the projection of the results to the entire population, through a concrete example.

2. Research methodology

The present study adopts an applied quantitative research, with the aim of evaluating the statistical implications of sampling in statutory audit missions in accordance with the International Standard on Auditing ISA 530's requirements. Prior to the quantitative modeling, a foundational review of the specialized literature and professional norms issued by IFAC and IAASB was conducted. This step was necessary to establish the operational relationships between audit risk, materiality, and sample size, which serve as the mathematical inputs for the subsequent statistical application. The core of the research consists of a quantitative case study focusing on the use of Monetary Unit Sampling (MUS) in testing trade receivables. To clearly demonstrate the end-to-end statistical mechanism without breaching client confidentiality, the case study utilizes an illustrative (simulated) dataset. This model was carefully designed to reflect the realistic financial parameters of a medium-sized Romanian private organization operating in the food industry. By employing simulated data, the research isolates the statistical variables to provide a step-by-step mathematical application of MUS, from establishing the materiality threshold and extracting the elements, to the final projection of identified misstatements and the calculation of the Upper Misstatement Limit (UML). The methods employed are based on well-established statistical notions, such as the Poisson distribution and monetary error projection, showing consistency between the theoretical framework and the practical case considered.

Within this context, the research seeks to achieve the following objectives:

O_1: To analyze the theoretical foundations of sampling in financial auditing and the manner in which they are reflected in the requirements of ISA 530;

O_2: To assess the practical applicability of systematic monetary unit sampling in testing account balances;

O_3: To highlight the role of the statistical sampling in managing the risk of material distortion and in supporting the formulation of the mission's conclusions through the audit opinion.

Like any other scientific endeavor, the present paper is subject to certain limitations that must be taken into account when interpreting the results obtained. One limitation of the current paper consists in the literature gap regarding empirical studies and in-depth, end-to-end practical analyses of the statistical implications of audit sampling. The relatively limited number of publications explicitly demonstrating the full application of ISA 530 restricts the scope for extensive comparisons and narrows the generalizability of the findings. Another restraint arises from the nature of the case study, because while the exposed point of view allows a clear illustration of sampling mechanisms and the

applications of ISA 530's requirements, the outcomes cannot be automatically transposed to all the types of companies or economic sectors without further adaptations. While the use of an illustrative (simulated) dataset allows for a clear demonstration of MUS mechanisms and ISA 530 applications without breaching client confidentiality, it inherently isolates statistical variables. Real-world audit engagements often introduce unpredictable factors - such as poor data quality or non-responses from external confirmations - which cannot be fully captured in a simulated model.
Finally, the correct application of statistical methods presupposes a high level of competence, and the interpretation of the effects relies heavily on the auditor's professional judgement – an element that is inherently difficult to quantify objectively, because it depends on the person's knowledge, level of development, interests, experiences, and many other items.

3. Results and discussion

In the following section, we will practically analyze the systematic selection of a sample based on monetary units, regarding the trade receivables (clients account) – 4111 "Clients" in Romanian accounting – of a Romanian food industry private organization, regarding the individual financial statements elaborated for the reporting year 2024. Considering that the enterprise has a high volume of transactions derived from retail trade, an exhaustive verification of the invoices would be highly inefficient. Therefore, the auditor resorts to MUS to reduce the workload while maintaining a high degree of confidence in the conclusions. The assertion investigated is the *existence* and *accuracy* of the transactions at the end of the period, by selecting a sample of balances for which external confirmation letters are sent to the trade partners, the risk reduction obtained from the testing of internal controls being immaterial.
Firstly, the auditor must verify the total monetary value of the population to be analyzed by choosing a materiality threshold in accordance with their professional reasoning. Usually, materiality is chosen conforming to the value of the total assets (1-2%), the company's turnover (1-2%) or the result of the year (5-10%), but there may also be exceptions, according to the financial auditor's way of thinking or working. If the total difference obtained, after receiving the partners' responses, between the values registered in the accounts and the actual amounts registered on the invoices is less than the materiality threshold considered, then it can be said that the distortion is insignificant, but if the difference exceeds the threshold, then the error is material, and this may lead the auditor to express a modified opinion (other than the unqualified one) for the audited activity (Teodorescu & Chivulescu, 2022).
Also, from the beginning, it is important for the auditor to ascertain whether or not the firm has concluded certain transactions that may appear unusual or repetitive, such as transactions between related parties, which he will have to evaluate separately, in their entirety, without including them in the sample, due to the fact that they have a higher risk of distortion and more attention is needed in measuring them.
In order to realize the practical part of the study, we will take into account the information summarized in the table below (Table no. 1.), which contains the data of a problematization based on the audited entity:

Table no. 1. Summarizing the data related to the entity's customers sampling

Question	Answer
Purpose of the test	Ensuring the existence of the transactions with the clients
Risk of significant distortion in the management's assertions	High
Population tested	Customers account balance at the end of the period
Monetary value of the tested population (book value – BV)	550,000 RON
Value of elements evaluated separately	25,000 RON
Risk reduction from testing controls or other procedures	Insignificant
Confidence level	95%
Confidence factor used (CF)	3
Accepted risk that the sample will not detect a material error (α)	5%
Expected Misstatement (Anticipated error)	0 RON (based on prior assessments)
Functional significance threshold	21,000 RON

Source: Elaborated by the author.

For our simulated model, considering a total turnover of approximately 1,400,000 RON, the auditor establishes a materiality threshold (tolerable misstatement) of 21,000 RON (representing 1.5% of the turnover). If the total projected misstatement exceeds this threshold, the auditor may conclude that the account is materially misstated. In monetary units sampling, each monetary element has an equal chance of being included in the sample, thus, automatically, large balances have a higher probability of selection, which increases the efficiency of detecting material distortions (IFAC, 2018). To apply the MUS method effectively, the following operational steps are executed:

– Step 1 – Exclusion from the population of the elements that generate a separate assessment in its entirety:

Monetary value of the population eligible for sampling (BV) =

= Monetary value of the total population – Value of items evaluated separately

BV = 550,000 RON – 25,000 RON = 525,000 RON

– Step 2 – Calculation of the sampling interval (SI):

The sampling interval determines the monetary spacing between selections. It is calculated by dividing the materiality threshold by the confidence factor (CF). The confidence factor is a statistical coefficient derived from the Poisson distribution, which is used to determine the sample size so that the risk of non-detection of monetary errors can be controlled by the auditor. Rather than being calculated manually, this factor is extracted from standard professional tables (AICPA, 2020) based on the auditor's desired confidence level (such as those provided by the Chamber of Financial Auditors of Romania – CAFR), as illustrated in Table no. 2. For a 95% confidence level, the

corresponding reliability factor is 3. Therefore, the sampling interval is calculated as follows:

Sampling interval (SI) = Materiality / Confidence factor (CF) (1)

Table no. 2. Confidence factors and levels determined by the Poisson distribution

Confidence level (%)	Confidence factor (CF)
50%	0.7
55%	0.8
60%	0.9
65%	1.1
70%	1.2
75%	1.4
80%	1.6
85%	1.9
90%	2.31
95%	3
98%	3.69
99%	4.6
99.5%	5.33

Source: Elaborated by the author.

In statistical sampling, the confidence level is directly proportional to the sample size: a higher confidence level requires the auditor to extract and verify a larger sample to mitigate the sampling risk. If other procedures carried out by the auditor end up reducing the risk of distortion, then the level of the confidence factor is also reduced, the multiplier functioning as a safety coefficient adapted to sampling by monetary units. Thus, in our case:

SI = 21,000 RON / 3 = 7,000 RON

The result of the sampling interval shows that each observation made represents 7,000 RON of the total population, partially presented in Table no. 3. (RON):

Table no. 3. The partial population of the customers' balance account

Client	Value of the transaction (RON)	Cumulative sum (RON)
Client 1	3,840	3,840
Client 2	6,300	10,140
Client 3	8,430	18,570
Client 4	4,400	22,970
Client 5	1,120	24,090
Client 6	2,160	26,250
...	...	525,000

Source: Elaborated by the author.

– Step 3 – It consists of determining the sample size:

The required sample size is determined by dividing the adjusted population value by the sampling interval:

Sample = Value of the population after exclusions / Sampling interval (SI) (2)
Sample = 525,000 RON / 7,000 RON = 75 items

From the entire population considered, the auditor will choose a number of 75 records to be verified, using the total cumulative selection method, by sending balance confirmation letters to the sampled clients, as follows:

- Step 4 – Sample selection by the systematic method on monetary units:
  a) A random starting point is chosen, between 1 RON and the value of the sampling interval (for us 7,000 RON);
  b) The cumulative sum of the balances is constructed by repeatedly adding the value of the sampling interval to the starting point;
  c) It is determined which element will be included in the sample, at cumulative values. Automatically, large items have a higher probability of being selected.

Thus:
Considering the random starting point: k = 550 RON.
Therefore, if the first random element is 550 RON, the second will be 7,550 RON, the third 14,550 RON, continuing until the 75th element is obtained.
Successively adding up the balances leads to the identification of the interval in which the selected monetary position "falls" (Table no. 4.):

Table no. 4. Customers' balance cumulation for the sample inclusion

Client	Balance (RON)	Cumulation (RON)	Key value (550, 7,550, ...)	Included? (Yes/No)
Cl. 1	3,840	3,840	$550 \leq 3{,}840$	Yes
Cl. 2	6,300	10,140	$3{,}840 \leq 7{,}550 \leq 10{,}140$	Yes
Cl. 3	8,430	18,570	$10{,}140 \leq 14{,}550 \leq 18{,}570$	Yes
Cl. 4	4,400	22,970	$18{,}570 \leq 21{,}550 \leq 22{,}970$	Yes
Cl. 5	1,120	24,090	$22{,}970 \leq 28{,}550 \leq 24{,}090$ - FALSE	No
Cl. 6	2,160	26,250	$24{,}090 \leq 35{,}550 \leq 26{,}250$ - FALSE	No
...	...	525,000	...	...

Source: Elaborated by the author.

More specifically, an element is included in the sample if the monetary selection point is within the cumulative range of that balance. For example, a Φ account is selected if:

$$Cumulation\ (\Phi - 1) \leq Selection\ point \leq Cumulation\ (\Phi) \quad (3)$$

Clients no.5 and no. 6 were not included in the sample because none of their selection values (28,550 and 35,550 RON respectively) correspond to their cumulative range.
After the selection of the sample, the auditor's work does not stop, but continues through the actual testing of each selected element, the nature of the tests depending on the auditable assertion. When testing the existence of the transactions, the auditor sends letters confirming balances from the clients' perspective. If the answer received confirms the value written on the invoice, the auditor already has an adequate first proof for their conclusion. If differences are found between the balance of the audited entity and that of the client, the auditor begins to investigate the errors, determining whether or

not they are material. There may also be the third situation, namely the one in which the contacted third party does not respond. In this case, the auditor will carry out alternative procedures or detail tests to obtain evidence for the existence and accuracy of the analyzed operations.

For each difference detected, the auditor determines the measurement error (ε), as the difference between the reported value and the actual correct value. The projection of errors in monetary sampling works differently from that specific to classical statistical sampling, given that the sampling unit is denominated in currency. The errors found in the sample need to be extrapolated to the entire population in order to be able to estimate the materiality of the total monetary distortion. The logic behind generalization is based on the idea that each element tested represents a segment of the total population, equal to the sampling interval.

In general, there are two main situations: *partial error* and *100% error*.

A. Partial error – this is the most common case. It occurs when the registered (reported) value is higher than the correct one, but not entirely (100%). This involves the calculation of an indicator known as the contamination factor (tainting):

Tainting = Error / Registered value (4)

and then it is projected on the whole population, because the distortion is considered to be applicable proportionally to the full segment represented by the chosen element as follows:

Projected error = Tainting × Sampling interval (5)

Let's assume that a customer with a balance of 2,540 RON was selected in the sample, but was externally confirmed with the value of 2.440 RON. Then we will have:

Error = 2,540 RON – 2,440 RON = 100 RON
Tainting = 100 RON / 2,540 RON = 0.03937...
SI = 7,000 RON ⇒ Projected error = 0.03937 × 7,000 RON = 275.59 RON

In other words, a distortion of 100 RON in the sample generates a projection of 275.59 RON in the population. The auditor should use his professional judgement throughout the mission, paying attention to the reasons or contexts in which the errors arose, existing also the possibility that the operation was overvalued, the company's governance pursuing a certain goal (objective), which is to be ”foiled” by the auditor through the opinion expressed in the audit report elaborated at the end of the mission.

If the difference between the reported value and the actual audited value is negative, then the contamination factor is not calculated, which is justified by the fact that when the value of the asset is higher after the reevaluation, no accounting adjustments are needed to be made. In this situation, the credibility of the third party may be called into question, as they may want to underestimate their obligations (debts) intentionally as a result of hidden internal objectives.

B. 100% error – it occurs when the registered value is completely incorrect, for example, in the case of a non-existent transaction or a completely fictitious balance. Here, the error projects directly to the reported total value, as follows:

Projection factor = 1 (100%)
Projected error = Total error (6)

In classical sampling, the error is weighted by the number of elements:

$$Projected\ error = \bar{\varepsilon} \times N \quad (7)$$

where: $\bar{\varepsilon}$ – average error value;
N – total number of customers.

For example, when testing 60 out of 2,000 customers, with an average error rate of 30 RON per customer, we obtain an extrapolation of:

Projected error = 30 RON × 2,000 customers = 60,000 RON

In this situation, it does not matter "how much money each customer represents", because the selection made was of the type "1 customer = 1 observation unit".
In addition, it is widely known that a fundamental rule of MUS is that accounts with balances greater than or equal to the sampling interval (e.g., a client with a balance of 8,430 RON) are selected with certainty. Consequently, any misstatement found in these top-stratum items is not projected using the tainting factor; the factual misstatement amount is directly added to the total projected error. Furthermore, understatements (instances where the confirmed value exceeds the recorded value) are not ignored; they must be evaluated and projected separately according to MUS guidelines, rather than directly offsetting the overstatements.

- Step 5 – Finding the Upper Misstatement Limit (UML):

To formulate a valid audit conclusion, the auditor cannot rely solely on the projected misstatement. They must calculate the Upper Misstatement Limit (UML), which represents the highest estimated level of misstatement in the population at the desired confidence level. The UML incorporates the total projected misstatements, the basic precision (Sampling Interval × Confidence Factor for zero errors), and an incremental allowance for sampling risk (Higgins & Nandram, 2009), such that:

$$UML = Basic\ precision + Total\ Projected\ Misstatement + Incremental\ Allowance \quad (8)$$

Finally, the UML is compared against the tolerable misstatement (in our case 21,000 RON). If UML is less than or equal to the tolerable misstatement, then the auditor obtains reasonable assurance that the trade receivables account is not materially misstated. Conversely, if UML is greater than the tolerable misstatement, the sampling risk is unacceptably high, prompting the auditor to request management to adjust the identified errors or to modify the audit opinion.

Conclusions

The present paper successfully achieved its proposed objectives by aiming to evaluate the statistical implications of Monetary Unit Sampling (MUS) method in financial auditing, from the perspective of the International Standard on Auditing ISA 530's requirements. Addressing the first research question (RQ1) and the theoretical objective (O1), the analysis demonstrated that ISA 530 provides a rigorous methodological framework that bridges mathematical probability with the auditor's professional judgement. It explicitly requires auditors to project all identified misstatements to the entire population, ensuring that sampling risk is quantitatively managed rather than intuitively assumed. The results achieved underline the key role of sampling in substantiating an audit opinion based on reasonable assurance, given the existence of

large data populations, together with the time and cost constraints specific to audit engagements. The theoretical analysis confirmed that audit sampling is an indispensable tool for managing the risk of material misstatement, allowing the auditor to obtain sufficient and adequate audit evidence without resorting to exhaustive population verification, ISA 530 providing a coherent methodological framework for the design, selection and evaluation of samples, combining statistical principles with the auditor's professional reasoning.

Regarding the second research question (RQ2) and the practical objectives (O2 and O3), the implementation of MUS was demonstrated through a simulated case study concerning the trade receivables of a private organization. The study highlighted the critical transition from extracting the sample to the final evaluation stage. Based on our simulated model, by calculating the Upper Misstatement Limit (UML) and comparing it against the tolerable misstatement of 21,000 RON, a concrete audit verdict can be reached. If the calculated UML is less than or equal to the tolerable misstatement, the auditor can validly conclude that the clients' account balance is fairly presented and accepted without modifications. This step-by-step application underlines how statistical methods directly support the formulation of an evidence-based audit opinion, the method proving itself to be effective in increasing the probability of detecting material errors and providing a solid support in formulating the auditor's conclusions.

Overall, ISA 530 significantly enhances the quality and disclosure of financial auditing by promoting a rigorous and documented approach to the sampling process. However, the effectiveness of the application of the standard depends on the level of statistical competence of the auditors and their ability to integrate quantitative methods with their professional judgement. In this regard, it is recommended to strengthen professional training in the field of statistics applied to auditing and to develop more detailed practical guides. Future research directions may focus on benchmarking MUS against other statistical sampling methods using real-world audit data or exploring the integration of audit data analytics as a modern complementary tool or potential alternative to traditional sampling techniques (Appelbaum et al., 2017).

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