



## **SECTION I.3B - AUDIT ENGAGEMENT SAMPLING**

### **Introduction:**

In forming an audit opinion auditors frequently do not examine all of the information available as it may be impractical and valid conclusions can be reached using audit sampling. Sampling is one audit technique among others which the Internal Auditor may choose in order to obtain appropriate evidence to support audit conclusions. Where the population to be examined is small, it may be more cost-effective to test all items rather than only a sample.

### **Definitions:**

Audit sampling is defined as the application of audit procedures to less than 100% of the population to enable the auditor to evaluate audit evidence about some characteristic of the items selected to form or assist in forming a conclusion concerning the population.

Statistical sampling involves the use of techniques from which mathematically constructed conclusions regarding the population can be drawn.

Non-statistical sampling is not statistically based and results should not be extrapolated over the population as the sample is unlikely to be representative of the population.

Ref.	Policy and Practice Requirements	IIA Standards and Other References
I.3B-1	<p><b><u>Policy:</u> When designing audit procedures, the Internal Auditor shall determine appropriate means of selecting items for testing. The means available to the Internal Auditor are:</b></p> <ul style="list-style-type: none"><li>▪ <b>Selecting all items (100% examination)</b></li><li>▪ <b>Selecting specific items (judgment sampling)</b></li><li>▪ <b>Statistical sampling</b></li></ul> <p><b>Discussion:</b></p> <ul style="list-style-type: none"><li>▪ The decision as to which approach to use will depend on professional judgment. The</li></ul>	



	Internal Auditor needs to be satisfied that the methods selected are effective in providing appropriate evidence to support conclusions on the related audit objective.	
I.3B-2	<b>Policy:</b> When using statistical or non-statistical sampling methods as part of assurance engagement procedures, the Internal Auditor shall design and select an audit sample, perform audit procedures and evaluate sample results to obtain sufficient, reliable, relevant and useful audit evidence.	ISACA Audit and Assurance Guideline G10 - Auditing Sampling
I.3B-2:1	<p><b>Practice requirement:</b></p> <p>When designing the size and structure of an audit sample, Internal Auditors shall consider the specific audit objectives, the nature of the population and the sampling and selection methods. The auditor should consider the need to involve appropriate specialists in the design and analysis of samples.</p> <p><b>Discussion:</b></p> <ul style="list-style-type: none"> <li>▪ <i>Sampling Unit</i> -The sampling unit will depend on the purpose of the sample. For compliance testing of controls, attribute sampling is typically used, where the sampling unit is an event or transaction (e.g., a control such as an authorization on an invoice). For substantive testing, variable or estimation sampling is frequently used where the sampling unit is often monetary.</li> <li>▪ <i>Audit objectives</i> -The Internal Auditor should consider the specific audit objectives to be achieved and the audit procedures that are most likely to achieve those objectives. When audit sampling is appropriate, consideration should be given to the nature of the audit evidence sought and possible error conditions.</li> <li>▪ <i>Population</i> -The population is the entire set of</li> </ul>	ISACA Audit and Assurance Guideline G10 - Auditing Sampling



	<p>data from which the auditor wishes to sample in order to reach a conclusion on the population. Therefore the population from which the sample is drawn has to be appropriate and verified as complete for the specific audit objective.</p> <ul style="list-style-type: none"><li>▪ <i>Stratification</i> -To assist in the efficient and effective design of the sample, stratification may be appropriate. Stratification is the process of dividing a population into sub populations with similar characteristics explicitly defined so that each sampling unit can belong to only one stratum.</li><li>▪ <i>Sample size</i> -When determining sample size, the Internal Auditor should consider the sampling risk, the amount of the error that would be acceptable and the extent to which errors are expected.</li><li>▪ <i>Sampling risk</i> -Sampling risk arises from the possibility that the Internal Auditor's conclusion may be different from the conclusion that would be reached if the entire population were subjected to the same audit procedure. There are two types of sampling risk:<ul style="list-style-type: none"><li>○ The risk of incorrect acceptance -the risk that material misstatement is assessed as unlikely, when in fact the population is materially misstated</li><li>○ The risk of incorrect rejection -the risk that material misstatement is assessed as likely, when in fact the population is not materially misstated</li><li>○ The level of sampling risk that the Internal Auditor is willing to accept affects sample size – the lower the sampling risk desired, the larger the sample will need to be. Sampling risk should be considered in relation to the audit risk model and its components, inherent risk, control risk, and</li></ul></li></ul>	
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	<p>detection risk.</p> <ul style="list-style-type: none"> <li>▪ <i>Tolerable error</i> -Tolerable error is the maximum error in the population that auditors are willing to accept and still conclude that the audit objective has been achieved. For substantive tests, tolerable error is related to the auditor’s judgment about materiality. In compliance tests, it is the maximum rate of deviation from a prescribed control procedure that the auditor is willing to accept.</li> <li>▪ <i>Expected error</i> -If the Internal Auditor expects errors to be present in the population, a larger sample than when no error is expected ordinarily has to be examined to conclude that the actual error in the population is not greater than the planned tolerable error. Smaller sample sizes are justified when the population is expected to be error free. When determining the expected error in a population, the auditor should consider matters as error levels identified in previous audits, changes in the organization’s procedures and evidence available from an internal control evaluation and results from analytical review procedures.</li> </ul>	
<p><b>I.3B-2:2</b></p>	<p><b>Practice requirement:</b> The Internal Auditor shall use a recognized sampling method, appropriate to the audit objectives, when selecting samples.</p> <p><b>Discussion:</b></p> <ul style="list-style-type: none"> <li>▪ There are three commonly used sampling methods which Internal Auditors may select: <b><i>Statistical Sampling Methods</i></b> <ul style="list-style-type: none"> <li>○ <i>Random sampling</i> -ensures that all combinations of sampling units in the population have an equal chance of selection.</li> <li>○ <i>Systematic sampling</i> -involves selecting</li> </ul> </li> </ul>	<p>ISACA Audit and Assurance Guideline G10 - Auditing Sampling</p>



sampling units using a fixed interval between selections, the first interval having a random start. Examples include Monetary Unit Sampling or Value Weighted selection where each individual monetary value (e.g., \$1) in the population is given an equal chance of selection. As the individual monetary unit cannot ordinarily be examined separately, the item which includes that monetary unit is selected for examination. This method systematically weights the selection in favor of the larger amounts but still gives every monetary value an equal opportunity for selection. Another example includes selecting every *n*th unit.

***Non Statistical Sampling Method***

- *Judgmental sampling* -in which the auditor places a bias on the sample (e.g., all sampling units over a certain value, all for a specific type of exception, all negatives, all new users, etc.). It should be noted that a judgmental sample is not statistically based and results should not be extrapolated over the population as the sample is unlikely to be representative of the population.
- Where sampling is chosen because of a large population or because the Internal Auditor needs to show to the audit client that there was no bias in the sample selection, a statistical sampling method is preferred. However judgment sampling can be an efficient way of identifying problems in the items being tested when time is limited or the focus is on demonstrating the existence of problems in a population (e.g. control weaknesses) where it is not expected that the audit will also definitively determine the extent of the problem – this being referred back to management to investigate.
- There is a fourth non-statistical method -



	<p><i>Haphazard sampling</i> - in which the auditor selects the sample without following a structured technique, however avoiding any conscious bias or predictability. Analysis of a haphazard sample can not be relied upon to form a conclusion on the population. Judgmental sampling is the preferred non-statistical sampling method.</p> <ul style="list-style-type: none"> <li>▪ A type of haphazard sampling is block selection (eg selecting all transactions in certain months). Block selection cannot be relied upon to form a conclusion on the overall population.</li> </ul>	
<b>I.3B-2:3</b>	<p><b>Practice requirement:</b></p> <p>To maintain audit independence, the Internal Auditor shall ensure the information on the population being sampled is complete and should control the selection of the sample</p> <p><b>Discussion:</b></p> <ul style="list-style-type: none"> <li>▪ Where the sample is selected from financial transactions over a period, the auditor needs to establish that the total transactions from which the sample is being drawn are complete. Audit software may be used to extract populations from financial systems – see section I.3C on controlling this process.</li> </ul>	ISACA Audit and Assurance Guideline G10 - Auditing Sampling
<b>I.3B-2:4</b>	<p><b>Practice requirement:</b></p> <p>The Internal Auditor shall obtain a clear understanding, before testing, of what conditions constitute an error by reference to the audit objectives of the procedure.</p>	
<b>I.3B-2:5</b>	<p><b>Practice requirement:</b></p> <p>Having performed, on each sample item, those audit procedures which are appropriate to the particular audit objective, the Internal Auditor shall analyze any possible errors detected in the sample to determine whether they are actually</p>	ISACA Audit and Assurance Guideline G10 - Auditing Sampling



	<p>errors and if appropriate the nature and cause of the errors. For those that are assessed as errors, if the sampling method used is statistically based then the errors should be projected as appropriate to the population.</p> <p><b>Discussion:</b></p> <ul style="list-style-type: none"> <li>▪ Any possible errors detected should be reviewed to determine whether they are actually errors. The auditor should consider the qualitative aspects of the errors. These include the nature and cause of the error and the possible effect of the error on the other phases of the audit. Errors that are the result of the breakdown of an automated process ordinarily have wider implications for error rates than human error.</li> </ul>	
<p><b>I.3B-2:6</b></p>	<p><b>Practice requirement:</b></p> <p>The Internal Auditor shall consider whether errors in the population might exceed the tolerable error by comparing the projected population error to the tolerable error, taking into account the results of other audit procedures relevant to the audit objective. When the projected population error exceeds the tolerable error, the auditor should reassess the sampling risk and if that risk is unacceptable, consider extending the audit procedure or performing alternative audit procedures.</p>	<p>ISACA Audit and Assurance Guideline G10 - Auditing Sampling</p>
<p><b>I.3B-2:7</b></p>	<p><b>Practice requirement:</b></p> <p>The audit working papers shall include sufficient detail to describe clearly the sampling objective and the sampling process used. The working papers should include the source of the population, the sampling method used, sampling parameters (e.g., random start number or method by which random start was obtained, sampling interval), items selected, details of audit tests performed and conclusions reached.</p>	<p>ISACA Audit and Assurance Guideline G10 - Auditing Sampling</p>