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Audit Sampling

meaning

- Audit sampling means application of AP to less than 100% of items within a population i.e. relevant for audit.
- All the sampling units (all the items in the poplⁿ) have an equal chance of selection.
- Sample selected should be true representative of entire poplⁿ because auditor will be able to draw conclusion & express opinion on entire poplⁿ on the basis of sample selected & tested.
- Sampling $\rightarrow$ Test checking.

Sampling process is performed on both

↓
TOCs

↓
TODs

• to identify deviation from expected IC (Effectiveness of IC)

• to identify mis in g/c balances, class of trⁿ

population 8% refers to entire set of data from which a sample is selected & about which the auditor wishes to draw conclusion.

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discrepancy level of assurance

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Nov 22 matters to be considered while designing an audit sample

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Characteristics of population that should be considered before applying sampling

Appropriateness

Auditor should ensure that the population selected shall be relevant for the specific audit objective (eg → detailed list of account receivable is relevant if auditor objective is to check overstatement of AR)

Completeness

Auditor should ensure that the population is complete in all respects otherwise conclusions drawn on the basis of samples selected from such incomplete poplⁿ will not be appropriate or reasonable

Reliability

Auditor should ensure by obtaining appropriate evidence that the poplⁿ selected is reliable (Factors such as source, nature, relevant IC effectiveness affects reliability).

Sampling Unit → the individual items that makes up the entire poplⁿ are known as sampling units (eg → one purchase trⁿ out of a list of 100 Trⁿ is sampling unit).

Approaches to Sampling

Statistical Sampling

① Definition:→

- An approach to sampling that has the random selection of the sample items &
- the use of probability theory to evaluate sample results, including.
- measurement of sampling risk characteristics.

② In this approach auditor uses random no. of tables or generation to select sample & auditor uses probability theory to evaluate the sample results including consideration of sampling risk concepts.

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③ This approach is scientific approach & appropriate

(i) it is considered to be better than the auditor judgement based approach i.e. non-statistical approach sampling.

(ii) It has wide application range

(iii) In large orgⁿ with huge volume of trⁿ this approach is highly recommended.

(iv) This approach does not involve personal biasness of auditor.

Non-Statistical Sampling

① In this approach sample size & composition is based on auditor personal experience & knowledge i.e. auditor's judgement.

② This approach has been highly used since many years because of its simplicity.

③ In this approach the expected degree of objectivity cannot be assured due to risk of personal biasness.

④ Although this approach is simple to operate, but sometimes sample selected by this approach may not be true representative for the entire popⁿ because of personal bias & no scientific method of selection.

⑤ This approach of sampling is criticized on the grounds that it is neither objective nor scientific.

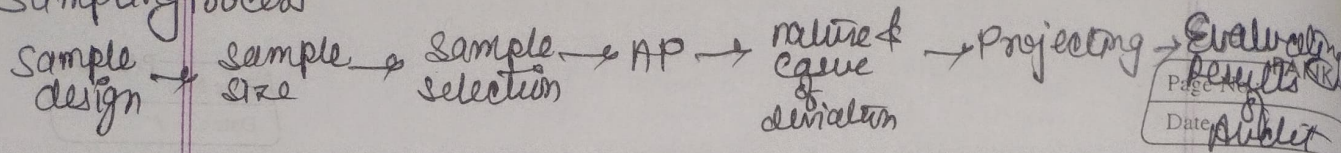
(Note): The decision whether to use statistical or non statistical sampling approach is a matter for the auditor's judgement. However, sample size is not a valid criteria to distinguish betwⁿ statistical & non statistical approaches.

Appropriateness of Sampling Approaches

Advantages of Statistical Sampling :-

- ① The amount of testing (sample size) does not increase in proportion to the increase in the size of the area (universe) tested.
- ② This sample selection is more objective & thereby more defensible.
- ③ The method provides a means of estimating the minimum sample size associated with a specified risk & precision (eg. use of sampling risk).
- ④ It provides a means of for deriving a "calculated risk" & corresponding precision (sampling error) i.e. the probable difference in result due to the use of sample in lieu of examining all the records in the group (universe), using the same AP.
- ⑤ It may provide a better description of a large mass of data than a complete examination of all the data, since non-sampling errors such as processing & clerical mistakes are not as large.
- ⑥ It is widely accepted way of sampling as it is more specific, without personal bias & the result of sample can be evaluated & projected in more reliable way.

Sampling Process



Sample Design (A) • Sample Size (B) • Selection of items for testing (C)

- Stratification
- Value weighted selection

◦ Egs of factors influencing sample size of TOCs & TODs

- Sample Selection Methods
- Random (Simple & Stratified)
 - Systematic
 - Monetary Unit
 - Haphazard
 - Block

Sample Selection Methods :-

(1) Random Sampling :- → SQ

(a) Simple Random Sampling :-

- Under this method each unit of the whole poplⁿ has an equal chance of being selected (eg. sales @ Purchase Invoices).
- It is selected by use of random number table (by way of drum or with the help of computers).

* Random no table is easy and simple to use & it also provide assurance that the auditor's bias does not affect the selection.

* This method is considered appropriate for homogenous poplⁿ having similar range.

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★ (b) Stratified Random Sampling

• This method involves dividing the whole popl to be tested in a few separate groups called strata then taking a sample from each.

• The reason behind the sampling is for highly diversified popl. This is achieved by selecting diffⁿ proportion from each strata. It can be seen that the stratified sampling is simply an extension of simple random sampling.

eg Balances in excess 71900,000
Bal in range ~~775 000~~ to 1000000
Bal in range 550001 to 775000
Bal below 775000

total popl
separate group

* Random sampling is choose from each stratum stratum using random no. table, therefore we can say that random selection method is applied through Random Number Generator.

(Note): Stratification means dividing Heterogeneous (diversified) popl into homogeneous (having similar characteristics) Sub-popl, whose samples are drawn from sub-popl.

Notes

(i) Interval Sampling or systematic sampling.

- In this method auditor should use sampling interval as a base to select from the poplⁿ.
- Sampling interval is calculated using sample size & total poplⁿ (Sample Interval = $\frac{\text{Total popl}^n}{\text{Sample size}}$)
- Auditor may use multiple starting points Haphazely from the poplⁿ to select a sample size after a gap of 20 or 50 (ie sampling interval)
- In this method each sampling unit will have a equal chance of getting selected & due to use of multiple starting points overall risk related to predictable sampling pattern can be reduce.

Tolerable
↓
Control
for compliance
procedure
↓
Tolerable
rate of
deviation

There is an
inverted
relationship
between
tolerable
level of
error
to be
detected

(ii) Monetary Unit Sampling

- It is a type of value weighted selection while applying Sampling i.e. use of monetary amount as a base to decide sample size, to select samples & to evaluate the results of such samples

(iv) Haphazard Sampling

- At the method auditor select samples without following any structured technique
- It is not appropriate when of statistical sampling is required (when RMM)
- This method has no structured approach, does not involve use of (i) judgement (ii) random no. tables

(v) Block Sampling → This method involves selection of a block of consecutive items from the poplⁿ for the purpose of AP
(eg → selecting first 100 sales txⁿ from april, last 50 txⁿ from march)

(RM) → Tolerable Error ↓ → Sample Size ↑

(Expected Error ↓ → Sample Size ↑)

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Factors Affecting Sample Size:

~~Sampling Risk~~

Sampling Risk

- It is a risk that auditor's conclusion based on sample selected can be different from the conclusion if the entire popⁿ was subjected to the same AP (meaning)

- Application of Sampling Risk to AP



Control Compliance Procedure

Substantive Procedure

risk of over reliance on controls

Case A

risk of under reliance on controls

Case B

risk of incorrect acceptance

Case C

risk of incorrect rejection

Case D.

In case of A & C → In these situation auditor may end up giving an inappropriate audit opinion, therefore, it affects the effectiveness of audit

In case of B & D → In these situation auditor may need to perform additional AP to establish that the initial conclusions were incorrect, this will affect the efficiency of audit.

Inverse relationship betⁿ sampling risk & sample size.

Source level of assurance~~Factors~~Examples of Factors Affecting sample size.Test of Controls
(TOCs)

- (i) Tolerable rate of deviation
(inverse)
- (ii) Expected rate of deviation
(Direct)
- (iii) Sampling risk
(inverse)
- (iv) Increase in size of popⁿ
(negligible effect on sampling size)
- (v) Expected assurance level
on IC of operating effectiveness
(Direct)

Decⁿ Test of Details
(TODs)

- (i) Tolerable Error
(inverse)
- (ii) Expected rate of mis
(direct)
- (iii) Sampling risk
(inverse)
- (iv) Higher the risk assessment for procedure larger the sample size needed
(direct)
- (v) If auditor is relying more on other substantive procedure such as SA 505 & SA 520 then the assurance required from sampling will be less
∴ Smaller sample size will be needed
(inverse)
- (vi) If stratification is appropriate in the popⁿ then sample size will decrease
- (vii) There will be negligible effect on sample size due to no. of sampling units in the popⁿ.

Sample Design.Stratification

- (a) Stratification means dividing the total poplⁿ it into sub-poplⁿ which can have an identified characteristic.
- (b) While performing the T/Os poplⁿ is often stratified by monetary value i.e. greater audit effort to be directed towards large value items.
- (c) Auditor can also stratify the total poplⁿ on the basis of any other factor which indicated high RMM.
(eg- In case of T/R auditor can stratify the poplⁿ on the basis of no. of dates since amt is receivable-
- (d) When auditor uses stratification he should perform detailed sampling procedure for each sub-poplⁿ i.e. stratum & he should evaluate the MS identified during sampling & perform projection for each stratum separately.
- (e) To form an overall conclusion on the entire poplⁿ he should combined the results of above procedure for all the strata.

Value-Weighted Selection.

- (a) When performing T/Os auditor may identify some unit for purpose of AP on the basis of monetary amount/value involved in a specific unit.
- (b) The major advantage to this approach is that auditor is able to direct his effort to those areas where RMM can be high.

Comp
Sec

Methods of ~~App~~ Auditing.
Sampling V/s Traditional.

Performing Audit Procedures

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QA

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- (a) Auditor should analyse the deviation and MS identified during sampling process. Auditor should try to inquire and identify all the items in the poplⁿ that have the common features similar to deviation / MS.
- (b) In ~~ext~~ extremely rare circumstances auditor may consider a deviation or MS to be an anomaly. anomaly can be defined as a MS or a deviation which does not represent other MS or deviation in a population i.e. it is non-recurring in nature.

~~SQ~~

- (c) Auditor is required to project MS for the entire poplⁿ, he should exclude only anomaly when projecting MS to the poplⁿ.
- (b) $\therefore \text{Total MS} = \underset{\downarrow}{\text{Projected MS}} + \text{Anomaly}$
- (Identified + Unidentified)
- $\rightarrow$ (nonrecurring in nature)

The above calculation should be made for each stratum (i.e. Sub-poplⁿ) & results of each stratum should be combined in the end.

- (c) Apply SA450 to conclude whether total MS are material or not-

Evaluating Results of audit sampling.

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Sampling Vs Non Sampling Risk

It is the risk that auditor's conclusion based on sample selected can be diffⁿ from conclusion if the entire popⁿ was subjected to the same AP.

Components of Sampling Risk

It is the risk that auditor reaches an erroneous conclusion due to any reason other than sampling risk. It may include the following:

- (a) Human mistake
- (b) Mis-Interpreting the sample result
- (c) Apply AP not appropriate to objective of audit
- (d) Relying on erroneous infoⁿ (eg- erroneous infoⁿ)
- (e) Failure to recognize MS.

It can never be measured mathematically

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As per ICAI module Sampling risk can lead to two types of Erroneous conclusions:

(i) In case of increase in TOC auditor may conclude that controls are effective while they in reality they may not be effective.

(ii) In case of TOB auditor may conclude that MMS does not exist.

(iii) In both these cases audits may give inappropriate opinion hence, affecting effectiveness of audit.

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factors to be considered while deciding about the extent of checking on sampling plan are following

1. 'Size of the org' under audit
2. State of IC
3. Adequacy & reliability of Books & records
4. Tolerable error range
5. Degree of desired Confidence

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It is imperative for the auditor to project m.s. for the popl while performing AP through sampling comment

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desired level of assurance
Statification of popl