Sarcouncil Journal of Entrepreneurship and Business Management

ISSN(Online): 2945-3720

Volume- 01| Issue- 01| 2022

Research Article **Received:** 07-03-2022 | **Accepted:** 18-03-2022 | **Published:** 25-03-2022

Statistical Sampling for the It Auditors

Victoria Meilani Dinda Sari Situmeang, Dame Shintya Samosir and Iskandar Muda
Accounting Department, Faculty of Economics and Business, Universitas Sumatera Utara, Indonesia.

Abstract: The purpose of this study was to determine the statistical sampling technique for information technology auditors. The analytical method used in this research is using qualitative methods sourced from related data. In general only large entities that have a sufficiently large population equally suitable for fully apply the statistical sampling method. Due to these shortcomings, auditors often apply the statistical sampling method modified. By this research there are several statistical sampling that can be applied for IT Auditing; they are simple random sampling, stratified random sampling, systematic sampling, and Sampling Probability Proportional to Size (Dollar Unit Sampling). This allows sampling with statistical techniques to assist the audit task. So that the auditor is more confident in expressing his opinion objectively.

Keywords: Statistical Sampling, Information Technology, Auditors.

INTRODUCTION

Every research need sample to find the exact data or answers about the problem that discussed. By doing a research are often required to do it scientifically. The evidence that can be presented in this research is the existence of the sample, with the presence of the sample, the questions that arise and those that will appear can be answered. The determinations of the sample in an important thing, because it can affect the conclusion the the research.

Sample selection also cannot be done randomly, but must be precise because it will affect the quality of research results. A good sample selection is that the sample must have high precision (closeness of the sample estimate to the population characteristics) (Supranto, 2007). Precision can be measured by comparing the sample variance value with the population variance value.

Currently there is a rapid development in the growth of the number of documents and transactions that must be faced by auditors. Auditors must be able to store relevant information securely and must protect the interests of their clients. With the existence of information technology, it can make it easier for auditors to organize documents and other information and be more organized. Auditors must also be able to adapt to their work environment well, for the smooth running of their work.

Information technology is increasingly taking part in every aspect. Auditors also experience this, auditors are required to be able to utilize information technology properly and correctly. Information technology also helps auditors, namely in the case of the emergence of computer-based audit techniques. This allows sampling with statistical techniques to assist the audit task. So that the auditor is more confident in expressing his opinion objectively.

Theoretical Review

Sampling

According to Fowler. *et al*., (1994) sampling statistics is a very viable tool for government auditors. With the use of appropriate, statistical sampling is acceptable court. Apart from the above, it turns out that Previous studies have shown low use of statistical sampling.

Information Technology (IT) Auditors

An information technology audit is the examination and evaluation of an organization's information technology infrastructure, applications, data use and management, policies, procedures and operational processes against recognized standards or established policies. Audits evaluate if the controls to protect information technology assets ensure integrity and are aligned with organizational goals and objectives.

Audit Sampling

The IAI through Section 350 of the Professional Standards for Certified Public Accountants defines sampling as: The application of audit procedures to the elements of a balance account or group of transactions that are less than one hundred percent with the aim of to assess some of the characteristics of that account balance or class of transactions. However, sampling does not replace the auditor's professional judgment. Sampling is

*Corresponding Author: Victoria Meilani Dinda Sari Situmeang

DOI- https://doi.org/10.5281/zenodo.6529867

only a tool to help auditors make judgments professional.

Audit Risk

Examination on the basis of a sample is always accompanied by a sampling risk. The risk that the sample selected from a population is not representative of that population. In tests of controls, sampling risk means assessing control risk as too high or too low. While in substantive testing, the sampling risk is in the form of the risk of incorrectly accepting or the risk of refusing the amount/value being tested.

Statistical Sampling

Guy (1981) stated that statistical sampling is the use of a plan sampling (sampling plan) in such a way that the law Probability is used to make statements about a population. There are two requirements that must be met in order for an audit procedure to be categorized as statistical sampling. First, the sample must be selected at random. Second, results the sample must be able to be evaluated mathematically. If any of these conditions are not fulfilled then it cannot be called statistical sampling.

There are several methods that can be used to select a random sample.

Simple Random Sampling

Using random selection to ensure that each element population has an equal chance of being selected. Number table random can be used to achieve randomness.

Stratified Random Sampling

Share population in groups (group/stratum) and then do selection using random for each group. The advantages of this method, First, sample selection can be linked to key items and can use different audit techniques to each stratum. Second, stratification improve sample reliability and reduce the sample size (sample size) required. If the sample is homogeneous grouped then the effectiveness and sample efficiency can be improved.

Systematic Sampling

Using a random starting point and after that select each population to n. The main advantage of this method is its use easy. But the main problem is that the possibility still arises biased sample (Guy, 1981).

Sampling Probability Proportional to Size (Dollar Unit Sampling)

Choose a sample randomly so that the probability of direct choice related to the value (size). With this method the unit that has the value being listed as large will proportionately have more opportunities to be selected over units with small carrying values.

Table 1: Table Type of Audit Sampling

No	Types of Audit Sampling	Sample Selection	Sample Evaluation
1	100 Percent	Key Items	Conclusive
2	Judgement Sample	Judgemental	Judgemental
3	Representative Sample	Random	Judgemental
4	Statistical Sample	Random	Mathematical

Advantages of Statistical Sampling

Statistical sampling as practiced in audit task, allows the auditor to exhibits higher competency and assures greater degree of objectivity and accuracy in expressing die opinion to the interested users. The principal advantage of this statistical technique is that it allows the objective means of calculating the sampling risk. This objectivity assures a certain degree of reliability of the opinion of the auditor inferred from the sample result.

Apparently, it was impossible to check the population count. Statistical methods provide a more economical and efficient way to test selected portions. Although this can be carried with judgmental sampling, it is clear that statistical methods guarantee a more representative one results.

In addition, the expenditure of money increases with the sample test which appears to occur when larger sample sizes are involved. Statistical methods tend to produce more accurate samples, minimize the effort to perform multiple sample tests.

Meanwhile, population growth does not require a longer sample size to be selected as long as it is representative. In conjunction, statistical sampling provides a means estimate the minimum sample size with certain risk and precision. Indeed, this precision and the risk of ensuring sample results are more tenable. In addition, statistical sampling provides better audit coverage for similar audit

Publisher: SARC Publisher

tasks save considerable time and cost. In addition, with proper documentation of the sampling plan, can be executed by different auditors in different locations with a higher degree of consistency. Moreover, this method does not preclude the use of judgmental sampling to allow auditors to use their knowledge and experience.

METHODS

Methods that used by the authors is descriptive qualitative methods. Descriptive qualitative method was chosen because this research aims to provide case insight on analysis of Statistical Sampling Techniques for the IT Auditors. This research used descriptive qualitative method. Based on Sugiyono, (2010) who states that qualitative research is descriptive. It means that collected data was in the form of words rather than number. In addition, Gay, (2006) who said that qualitative research is the collection, analysis, and interpretation of comprehensive narrative and visual data in order to gain insights into a particular phenomenon.

Explanatory

Audit System Information

Information systems auditing is the process of collecting and evaluating evidence to determine whether a computer system safeguards assets, maintains data integrity, allows organizational goals to be achieved effectively, and uses resources efficiently.

In the process of IT Audit, there are 3 method can be applied to collect the evidence;
Auditing in Around computer
Auditing through computer
Auditing with computer

Statistical Sampling

The salient feature of statistical sampling is its ability to measure risk. The measurement instrument is the confidence interval, which provides a value calculation for the estimated amount of misstatement in a population. Its ability to measure, emerged from the selection method used is probability sampling. Lawyers, judges and experts statistics have also explicitly recognized the features of statistical sampling.

Training on the use of statistical sampling needs to be carried out because the auditor perceives statistical sampling as an audit process complex and requires a high level of mathematics and skill high calculation. In general only large entities that have a sufficiently large population equally suitable for fully apply the statistical sampling method. Due to these shortcomings, auditors often apply the statistical sampling method modified.

There are several methods that can be used to select a random sample

Simple Random Sampling

Using random selection to ensure that each element population has an equal chance of being selected. Number table random can be used to achieve randomness. Simple Random Sampling Technique is a technique of taking simple and many samples used. Respondent selection based on random numbers and obtained a number of respondents who selected according to the number of samples obtained. Parameter estimator value in the form of mean and variance with various number of samples. Also by this sampling will be calculating the margin of error for describe that the number of the samples affect the margin of error. Large number of samples make the margin of error, and a sampling will be small and valid otherwise.

Stratified Random Sampling

Share population in groups (group/stratum) and then do selection using random for each group. The advantages of this method, First, sample selection can be linked to key items and can use different audit techniques to each stratum.

Second, stratification improve sample reliability and reduce the sample size (sample size) required. If the sample is homogeneous grouped then the effectiveness and sample efficiency can be improved. Stratified sampling also done using the level of trust. Number of samples on every confidence level will be counted the parameter estimator is the average and variants as in the technique simple ramdom samplling.

Systematic Sampling

Using a random starting point and after that select each population to n. The main advantage of this method is its use easy. But the main problem is that the possibility still arises biased sample (Guy, 1981).

Sampling Probability Proportional to Size (Dollar Unit Sampling)

Choose a sample randomly so that the probability of direct choice related to the value (size). With this method the unit that has the value being listed as large will proportionately have more opportunities to be selected over units with small carrying values. This method a kind of selection weighted value which includes sample size,

Publisher: SARC Publisher

selection, and evaluation results in drawing a monetary amount conclusion. Monetary Unit Sampling (Monetary Unit Sampling) quoted from the book "Public Sector Financial Audit For Local Government Financial Reports" is a sampling method statistics that auditors generally use in substantive tests and their results expressed in both dollars and rupiah.

CONCLUSION

The salient feature of statistical sampling is its ability to measure risk. The measurement instrument is the confidence interval, which provides a value calculation for the estimated amount of misstatement in a population. Its ability to measure, emerged from the selection method used is probability sampling. An Information Technology audit is the examination and evaluation of an organization's information technology infrastructure, and applications, data use and management, policies, procedures and operational processes against recognized standards or established policies. By this research there are several statistical sampling that can be applied for IT Auditing; they are simple random sampling, stratified random sampling, systematic sampling, and Sampling Probability Proportional to Size (Dollar Unit Sampling). This allows sampling with statistical techniques to assist the audit task. So that the auditor is more confident in expressing his opinion objectively.

REFERENCES

1. Arkin, H. "Sampling Methods for Auditors: An Advanced Treatment." *McGraw-Hill Book Company, New York* (1982).
2. Fowler, J.F., Foster, J.E., Foley, L.S. and Kvanli, A.H. "Statistics, the law and government auditors' sampling procedures." *The Journal of Government Financial Management* 43.1 (1994): 35-46.
3. Guy, D.M. "An Intorduction to Statistical Sampling in Auditing." *John Wiley and Sons, New York* (1981).
4. Ikatan Akuntan Indonesia Kompartemen Akuntan Publik. "Standar Profesional Akutan Publik." *Salemba Empat, Jakarta* (2021).
5. Supranto. "Teknik Sampling untuk Survey dan Eksperimen." *Jakarta: Rineka Cipta* (2007).

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:
Situmeang, V.M.D.S., Samosir, D.S. and Iskandar, M. "Statistical Sampling for the It Auditors." *Sarcouncil Journal of Entrepreneurship and Business Management* 1.1 (2022): pp 20-23

Publisher: SARC Publisher