International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 7 (2018) pp. 5491-5500

Computer Audit Programs (Software) And A New Variables Sampling Concept A Proposed Approach Empirical Study

Jammel Mohammed Ali Mona

University of Kufa, Najaf, Iraq.

Abstract

A common way to obtain a reliable information is to have some type of verification (audit) performed by independent persons. The audited information is then used in the decision making process on the assumption that it is reasonably complete accurate and an unbiased. Electronic Data Processing (EDP) has one of the most important technological developments in the later half of the twentieth century. Computer installation now range in size from minicomputers used for limited applications, to complex international financial communications. Coupled with corresponding increase in computers related frauds. Since computers play such a large part in assisting us process data, it is important that their use be-controlled and audited.

Keywords: Auditing, generalized audit software, specialized audit software, Statistical variables sampling.

INTRODUCTION

Previous studies in such a field have been concentrated on the use of conventional sampling methods, and in particular variables sampling whether in manual systems or these which Appling computerized systems.

The objective of the auditing process is to write reports indicating the validity of the financial statements for the case tinder consideration. Therefore, the certified public accountant has to obtain the evidence which support his viewpoints concerning the financial statements

To accomplish this objective, the auditor can resort to the application of the statistical sampling techniques in auditing process. (Will, Hart J., 2010, p.43).

This study aims to develop the techniques adopted in variables sampling by using audit software packages (programs).

The main results indicate that:

1) The possibility to know the distribution compatibility of accounts balance under auditing with the normal distribution.
2) The possibility of defining the suitable sample size which represent the society under study according to the confidence level chosen by the auditor through the normal distribution goodness of fit test.
3) Classification of the auditing society to strata A, B, C, D, and E in accordance with the proposed ratios for the normal distribution as the value of the total strata have to 100% as follows.

   A: 2.275, B: 13.59, C: 68.27, D: 13.59, E: 2.275

4) Choosing the appropriate sample regarding to size , and from the point of representing the society under auditing precisely as it will be a regular stratified sample in the same time The program which has been designed to achieve this purpose will perform the following:

   a- The program will calculate the standard deviation and the arithmetic mean for the society as soon as feeding accounts balances needed to be audited (as clients' accounts) after arranging them according to their values whether starting from the least value or vice versa.

   b- Each society is classified into five strata according to the standard deviation and the arithmetic mean for the society.

   c- It has been indicated on the monitor as a table (1) the society classified into strata and the number of accounts in each stratum and the percentage of this stratum to the whole society. The actual results were as follow: Mean: 522.135, SD: 209.834.

Table 1: Society Classified

Stratum	No. of Accounts	Percentage
A	17	1.69
B	167	16.62
C	647	64.38
D	158	15.72
E	16	1.59
Total	1005	100%

   d- In the next step, the auditor has to decide the appropriate sample size which represent the society under study, and after that has to decide the percentage required for each stratum as follow:

1. It may be in accordance with the same percentage appeared on the monitor which are real percentage of the society.
2. Or feeding a computer with the proposed standard percentage mentioned above in No.3.

Analysis done before indicated that the difference will be very little in number of accounts in each stratum whether the

standard percentage or the actual percentage of the society have been chosen.

e- Each stratum and the accounts it contains will be shown on the computer and the range upon which accounts included in each stratum of the society's strata will be chosen. This range depends on the size of the sample to the size of the society. Also the accounts which have been chosen from each stratum of the five strata will be shown.

5) Analysis done on the withdrawn samples, 3 samples of different sizes which have been calculated one according to the actual percentage and the other time according to the standard percentage (ratio), indicated that these samples represent the society precisely. We got this fact by comparison the range of the values of the accounts calculated previously by using the arithmetic mean and the standard deviation (SD) with the range of the values of the accounts we got from the withdrawn samples. The result shows that there is very little differences which will be discussed later. These difference can be considered insignificant for their low values.

Based on these results, the auditor can know easily the nature of the society i.e. if it is of normal distribution or not, the standard deviation of the society and the arithmetic mean, the percentage of the strata distribution in the society. As soon as the size of chosen sample is decided, the program will choose the sample according to the conditions and equations set in the program. The program will indicated the range on which the accounts will be chosen inside each stratum of the five strata mentioned previously. The size of this range will depend on the size of the sample as to the size of the society. The accounts of each stratum will be considered, also the chosen accounts will be considered so that the total of chosen accounts from each stratum will represent the number of accounts required as a sample. It is possible also to do the tests necessary to be sure of the extent of which the sample represent the society precisely.

The remainder of this paper consists of the following: Sections I motivations for and contributions of the study. Section II a proposed approach for normal distribution sampling. Section III Results and discussion. Section IV Conclusions, and suggestions for future research.

MOTIVATIONS FOR AND CONTRIBUTIONS OF THE STUDY

The theoretical insights and empirical results provided in this article should be useful to researchers in accounting as a major field by making contributions to the literatures on the [1] Auditing [2] Computer audit software. [3] Statically variables sampling.

Computer Audit Software

EDP Auditing is the process of collecting and evaluating evidence to determine whether a computer system safe guards assets, maintains data integrity, achieves organizational goals effectively, and consumes resources efficiently. (Ron Weber, 2003, P.7).

Thus, there is no distinction between the audit concepts applicable to manual systems. When computer or other aspects of EDP systems are introduced, Generally Accepted Auditing Standards and their interpretations, the Code of Professional Ethics, and the basic concepts of evidence accumulation remain the same.

At the same, the specific methods and techniques appropriate for implementing the basic auditing concepts do change with the introduction of EDP systems.

The advent of EDP has challenged auditors to devise new methods for testing complex systems because of the loss of the audit trail (2) (Arness and Loebbecke, 1980, P. 441).

Introduced seems to outstrip the rate at which we can develop viable audit techniques.

Need For an Audit Software as a New Audit Technique.

The audit software package is a program providing powerful data retrieval, data manipulation, and reporting capabilities specifically oriented to the needs of auditors.

There are many reasons why the auditor is interested in system software, the most important reason is concerning of auditor about the ways in which system software can be used to breach controls in computer systems. Some system software is designed to handle crises situations it is designed to bypass normal control (see, further; Perry, 2012, p.75). Thus, the auditor is concerned about what system software is used, by whom, when or what purposes, and controls that exist over its use.

Briefly there are two kinds of audit programs: Specialized Audit Software, and Generalized Audit Software (GAS).

Weber states three motivations for developing generalized audit software. The primary motivation is the set of problems caused by the diversity of computerized information processing environments that confront the auditor. A second major motivation is the need to develop quickly an audit capability in light of changing audit objectives. A third and most important motivation for developing audit software is the need to provide audit capabilities to auditors relatively unskilled in the use of computers Most generalized audit software packages can be used by auditors who are not computer audit specialists .[for discussion of these motivations , [see Weber, 2009, P. 402].

GAS Audit Software Capabilities

Generalized audit software allows the auditor to use a high - level, problem oriented language to invoke functions to be performed on computer files. There are major functions included in GAS packages, some of these functions are:

a- The capabilities of statistical operations vary from primitive to sophisticated. However, several

packages provide comprehensive attributes and variables sampling capabilities.

b- The software provides powerful selection capacities for extracting data that satisfies certain tests, and the data needed for audit purposes from the application system files.

c- The software provides varying capabilities with respect to stratification and frequency analysis. If stratification and frequency analysis capabilities are provided, frequency tables and bar charts can be produced. The distribution of accounts balances is an important determinant of the type of sampling method chosen.

d- Finally, the software can produce reports containing information useful to the auditor.

After mentioned to the GAS capabilities the question is how to access data structures.

Liteckly and Weber, identify three methods of using GAS to access data:

1) Extract a sequential file for the use with generalized audit software.

2) Use generalized audit routines to map the more complex data structures into the simpler data structures used by generalized audit software.

3) Include specialized access routines in generalized audit software that can handle complex data structures [further see Litecky and Weber 2009. pp 45-48].

The researcher think that the first approach has a great advantage over both of generalized interface routines (GIR), and specialized access routines (SAR), because the primary advantage of this approach (extract a sequential file) is its simplicity, further, it may be the only viable approach for an external auditor to use when the generalized audit software package will not operate on a client's. Hardware/software configuration this a problem as several database management systems operate on a wider variety of hardware/software configurations than many generalized audit software packages.

In spite of the previous mentioned privileges, there are some limitations, the auditor must understand both the capabilities and the limitations of generalized audit software that cause it to be only a partial solution to the auditor's problems with evidence collection for computer systems One of these deficiencies is, that the generalized audit software permits only ex-post auditing and not concurrent auditing. The software examines the quality of data after it has been processed. And even if the auditor uses parallel simulation; the results produced by 'the parallel simulation program are checked against a set of existing results produced by the application system.

With regard to the limitations of generalized audit software, the auditor has to get the aid of another techniques such as the utility software and / or the specialized audit software.

Utility Software as an Audit Tool

It is difficult to define precisely what constitutes a utility program. However, in general, utility programs have two distinguishing characteristics. First, the functions they perform are less global than those performed by other system software. For example, a sort package usually is called a utility second, as a consequence of the first difference, utilities generally are smaller in size than other system software.

Utility Software versus GAS

For any given installation, the extent to which the auditor can use utility software to collect evidence depends in part on the types of utility software available. Most hardware vendors supply a wide range of utilities for use with their machines, in addition to the availability of the utility there are major reasons to use it as an audit tool. First: unavailability of generalized audit software; most generalized audit software packages have been designed to run on IBM hardware/ software configurations. This simply reflects IBM's dominant share of the market in commercial data processing and the difficulties involved in designing and maintaining audit software that will run on a variety of configurations, (see, McHugh, 2011, p. 38). Thus, for those configurations on which generalized software or use utility, software for evidence collection purposes. Second: The set of utility software packages available often provides a wider range of functional capabilities than generalized audit software (see, also, Will 200, p.45]).

In spite of the previous mentioned reasons, the auditor may require and create another technique for evidence collection purposes, such as specialized audit software. Actually the term "specialized" does not mean the software performs only a narrow range of functions. It may inform a wider range of functions than some utility programs. Rather specialized means the auditor has developed and implemented software where the purposes and users of the software are well-defined before the software is written.

Specialized Audit Software versus Generalized Audit Software and Utility Programs

The auditor may develop, implement, and use specialized audit software instead of using generalized or utility software for one or more of these reasons First In some cases neither generalized nor utility software is available to the auditor for evidence gathering purposes. Second Even though generalized and utility may be available to the auditor they may have functional limitations that prevent the fulfilling the auditor's needs. Suppose, the auditor wants to undertake some of statistical sampling and the necessary logic has not been incorporated in either generalized or utility software. Otherwise, if the functional limitations prevent the auditor using this software to obtain evidence about an application system often it means the application system is complex. One way for the auditor to gain understanding of the system to accomplish various tasks, is to prepare detailed program specifications or write program source code for specialized

audit software. Last, the main point for developing the specialized software by auditors is increasing their independence , because they have a better understanding of application systems , and they are not dependent on other people for the availability of software for evidence collection purposes As a consequence both management and the EDP stall may respect auditors more if they receive auditors to have sufficient technical competence to write their own programs, adding to that management's confidence in the audit stall performing high-quality work may increase.

As we have seen it is clear now the importance of using the different software packages according to the case which the auditor faces in the auditing process and in particular for developing a statistical sampling system to be used as a helpful mean in the auditing process. Now, we are going to limit ourselves to the statistical sampling and to give a hid' explanation for the sampling technique and the proposed approach for variables sampling.

Table 2: Difference between standard &Actual percentages

Strata	Actual Standard		The difference
	Ratio	Ratio	
A	01.69	2.275	- 0.585
B	16.62	13.59	+ 3.030
C	64.38	68.27	- 3.890
D	15.72	13.59	+ 2.130
E	01.59	2.275	- 0.685
	100%	100%	00.000

By analyzing the above mentioned results it is found that the actual percentages extracted from the society under study tend to incline to the normal distribution with the exceptions of little difference between the standard percentages and the actual percentages estimated to be of total [+ or (-) 5.16%] as shown in table (2), with a total difference equal zero. It is found also that the difference between each stratum is very little and the maximum deviation in the third stratum is (3.89% of the society) and 5.7% in the stratum if self. It can be noted also from fig (2) the rate of similarity between the actual percentages and the standard percentages.

By testing the use of the standard deviation of the sample and extracting the percentage of each sample by the availability of the standard deviation of the sample, it is found the actual percentages are similar to the standard percentages (see fig. no. 3) with the exception of the existing of very little deviations which do not affect the number of accounts will be chosen from each sample.

RESULTS

At the beginning of this empirical study it has been used the program package of Microstat. All the society is represented by 1005 accounts. The distribution curve starts from zero till 1050 the length of the class is 50 L.E. A first sample which has been tested consists of 201 accounts according to the value of frequencies F1 and the calculation of the arithmetic mean, the standard deviation, and the standard error. We did also so as for the second and the third sample.

The result of this indicates (see table 3) the rate of the similarity of these data to the normal distribution, the test of the hypothesis that the society is normal indicates that the first sample is accepted under confidence level of 95%. By analysis the results of the normal distribution goodness of fit test which accepts the first sample to represent the normal distribution under confidence level of 95%, and also accepts the second (402 accounts) and the third sample (603 accounts) under confidence level of 99%. It can be said that the first sample is suitable in its size under confidence level of 95%, and whichever is bigger than that can be suitable under the confidence level of 99%. Consequently the size of the sample can determined through the results obtained by this test.

The Test Result of the first Hypothesis

From the previous analysis, we can reject the first hypothesis which states that the suitable size of the sample cannot be determined under any level of confidence fixed by the auditor, but we can accept the alternative hypothesis that the suitable size of the sample can be determined under the confidence level wanted by the auditor. our study indicates that the auditor can choose the first sample 201 account if he wants confidence level of 95%, in case he wants a higher confidence level (99%) he can increase the size of the sample.

In the following stage of the study a program has been designed and developed to suit the requirements of the study which enable the withdraw of the suitable sample at the time of feeding a computer with the balances belonging to the society under auditing as the program calculates the standard deviation and the arithmetic mean of the society, also it indicates the strata and whether these strata are normally distributed or not, the program gives the number of accounts in each stratum and the percentage of this stratum to the society.

Table 3: Normal Distribution, Goodness_of_Fit Test

Confidence Level : 95%								d.f.s.
Sample		Mean	SD	SE	CHI Square	Co. of Skwiness	Co. of Kurtosis	The hypothesis that the population is normal
No.	Size							
1	201	503.960	211.070	14.888	10.065	.032	2.5	Accepted
2	402	510.254	210.141	10.48	16.468	.005	2.5	Rejected *
3	603	509.411	209.155	8.518	26.373	.001	2.4	Rejected *
P	1005	522.135	209.534	6.619	13.197	.015	2.4	Rejected *

* Accepted at the 99% confidence level.

The Test Result of the second Hypothesis

By comparing the percentages of the strata extracted from the program concerning the real society with the standard percentages proposed we got the following results.

A Proposed Approach for Normal Distribution Sampling

Once the sampling problem has been stated, the auditor must make certain decisions to determine the proper sample size. One such decision is to specify how closely (with what precision) it is necessary to estimate the characteristic of interest. Another decision relates to the reliability or assurance (confidence level) that the estimate of the population characteristic will fall within the required distance (precision) from the true population characteristic.

Classical (Normal) Distribution Theory.

The proposed approach depends on normal distribution concept, classical variables sampling relies on normal distribution theory. Empirical investigation, the distribution of sampling means will tend to be a normal distribution. (Willingham & Carmichael 2008, p. 163).

The distribution of sampling means is the relative frequency distribution which results from pletting the arithmetic means computed from repeated random samples of a given size drawn from a given population. Both measures of statistical accuracy (precision and confidence) are based of the tendency of the distribution of sample means to approximate a normal distribution.

The fact that the sampling distribution of the mean tends to be normally distributed is significant because much is known about the normal distribution. The relative area under the normal curve are completely described by its standard deviation and mean. Thus it is known that 68,27 per cent of the area under a normal curve lies with one standard deviation of the mean, 95,45 percent of the area lies with two standard deviations of the mean, and 99,73 percent within three standard deviations

A Proposed Distributed Area under Normal Curve

From the above analysis of the classical normal distribution, the researcher suggests a new distribution for the normal curve area which be useful as a basis for determining:

1) Variables Sampling Size.
2) Variables Sampling Components.

The new concept depends on the idea of classifying the normal distribution into five groups according to the three levels of confidence previously mentioned.

The normal distribution is classified as follows:

Table 4: Normal Distribution

Category	Value	Percentage
A	> U + 2 SD	2.275
B	> U + SD < U + 2 SD	13.59
C	> U (-) SD < U + SD	68.27
D	> U (-) 2SD < U (-) SD	13.59
E	< U (-) 2SD	2.275
Total		100%

(For further details concerning these percentage see Ali 1 Tolba [89]).

Each group can be considered as a stratum, and the total of all the strata represents 100% of the auditing society. The researcher sees that these percentages can be considered as standard percentages absolutely representing the society in case the auditor gets a sample divided into five strata of the percentage mentioned before. Subsequently, the auditor can be sure that the sample withdrawn is a representative sample for the society under auditing. All these strata inside the society can be expressed in fig. (1) Which shows the contents of the sample.

For the purpose of proving the applicability of these new percentages of the normal distribution in helping the auditor for the possibility of determining the suitable size of the sample from one hand, and that these samples represent the

society on the other hand. The researcher has put the following hypothesis to be studied in order to know the basic results which can determine the validity of these new percentages.

Hypotheses

Ho.1. It is not possible to determine the suitable size of the sample in the stratified society under consideration. What level of confidence can be decided by the auditor?

Ho.2. the percentage derived from the society for each stratum will not be compatible percentages (Ratios).

Ho.3. It is proposed that the sample items will not represent the real auditing population precisely.

Ho.4. the values of the accounts extracted from each stratum out of the five, will not be in compatible with the values calculated for each stratum.

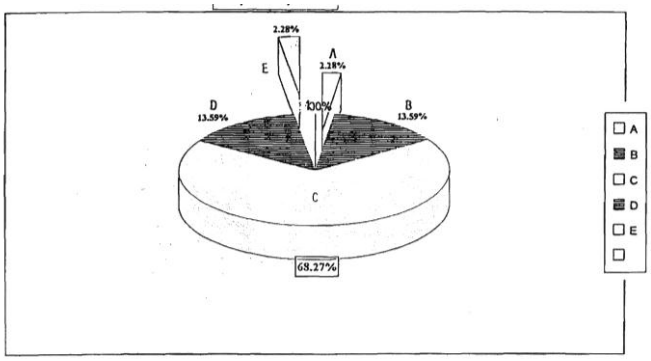

Figure 1: Sampling Components

Method of Research

The theoretical side of this research depends on the idea of using programs packages (general and special) in the auditing process generally and in the sampling process in ,articular and specially variables sampling . The researcher depends on the basic idea of adopting the normal distribution to become the basic mean for auditing tile variables after reclassifying the normal distribution into five strata, each stratum represents a percentage of both the society and the sample. The researcher called these percentages as standard percentages which can be used as a guide to judge the range of compatibility between the auditing society and the normal society and subsequently being confident regarding the society under auditing after classifying it to strata as the selected sample of this Society will be a real representative sample of the society. This sample will be classified into five strata similar to the society strata, as each stratum of the five sample strata of the society strata will be chosen in accordance with the proposed standard percentages of the normal distribution. In addition to the theoretical side previously mentioned and for tile purpose of testing the hypotheses, the researcher used the packages of the ready statistical programs as Microstat and SPSS for windows, Also a special program has been designed on different stages. in order that this program can help the auditor in choosing the sample rapidly and precisely in the same time.

The results of this empirical study will be stated in the next part.

Sampling

Financial statements are the end result of the accounting process. The auditor must thourghly analyze all aspects of the statements themselves in order to satisfy himself that they are lair representations of the results of activity for the period under audit and of the financial position at the end of that period.

The volume of the items comprising balances in the various accounts may preclude a 100 percent examination and analysis in such situations, which are normal in auditing. Only a portion of items comprising a balance can be thourghly examined.

From the point of portion of data chosen for analysis, there is a sampling problem. Generally Accepted Auditing Standards define audit sampling as the application of an audit procedure to less than 100 percent of the items within an account balance or class of transactions for the purpose of evaluating some characteristic of the balance or class. (SAS 39, AU 350.01. from Robertson & Davis, 1988, P. 300). Auditors utilize audit sampling when : a- The nature and materiality of the balance or class does not demand a 100 percent audit, b- A decision must made about the balance or class and c- The time and cost to audit 100 percent of the population would be too great.

Generally, in auditing, two divergent types of sampling are used judgement sampling and statistical sampling. Auditors define statistical sampling "as audit sampling that uses the laws of probability for selecting and evaluating a sample from a population for the purpose of reaching a conclusion about the population". (Robertson & Davis, 88, p. 302). The essential points of this definition are:

1) A statistical sample is selected at random, and
2) Statistical calculations are used to measure and express the results both conditions are necessary for a method to considered statistical sampling rather than non-statistical sampling.

Sampling for Accounting Balance Audits

Audit sampling is concerned with the amount of work performed and the sufficiency of audit evidence obtained. Auditors design audit sampling to deal with: 1- auditing control compliance, and 2- auditing account balances.

The statistics of compliance auditing, known as attribute sampling, refers to measurement of just the presence or absence of a control deviation. In contrast the statistics of account balance auditing is known as variables sampling, referring to measurement of the dollar amounts in an account balances.

The researcher will focus here on the last one (variables sampling). When audit sampling is used in auditing account balances (substantive test) the interest of auditor is the monetary amount of the population units. Substantive tests of details auditing is the performance of procedures to obtain direct evidence about the monetary amounts and disclosures in the financial statements.

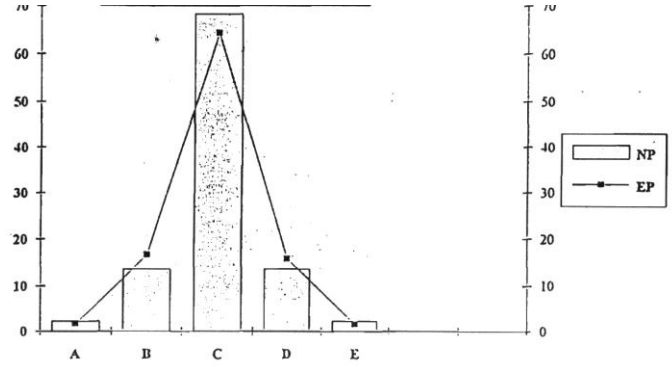

Figure 2: comparison between Actual and Normal Distribution

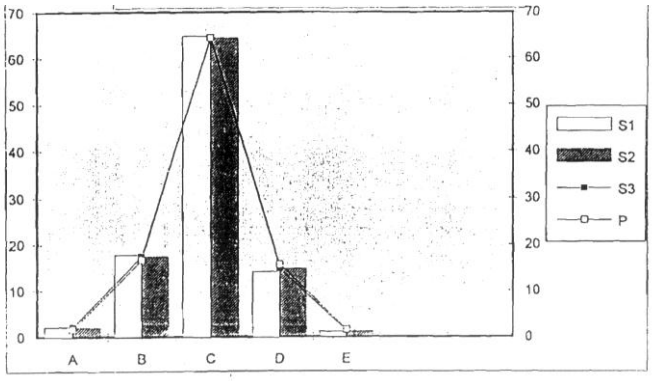

Figure 3: Distribution using Mean & SD of samples

From these results we can reject the second null hypothesis and accept the alternative hypothesis which states that the percentages extracted from the society for each stratum of the strata are compatible with the proposed standard percentages.

The Test Result of the Third Hypothesis

In this experiment it has been extracted the number of accounts for both the society and the three samples firstly in accordance with the proposed standard percentages as it is shown in table (5), and secondly in accordance with the actual percentages calculated by the program by the known ability of the standard deviation of' the society and the arithmetic mean. These percentages are calculated by using equations based on the same equations by which the standard percentages were extracted But we have to take into consideration that in real life it not possible to find a society identical 100% with the standard percentages for the normal distribution, therefore some little difference appeared not in the size of the sample but in the number of accounts inside each stratum.

The results show that the number of accounts extracted by the standard percentage are compatible regarding the total number stratum. It has to preferred here that because of the existence of decimal fractions in both the standard deviation and the arithmetic mean, upon calculating the range on which the regular sample is calculated in accordance with the size of the sample as for the size of the society, resulting from the rounding process that the total number for the first sample as an example is 201 accounts which is less by 3 accounts, consequently the auditor can feed the program with the required number for the first sample in addition to 3 accounts i.e. the required number is 204. The program will show that the number of accounts in the sample 201 accounts. Thus the program user has to take into consideration the differences in rounding the figures, taking into consideration that its effect is very little and it can be cured easily.

Table 5: Standard Normal Distribution Item

Strata	NP	S1	S2	S3	%
A	23	5	10	20	02.275
B	137	27	54	81	13.590
C	685	137	274	411	68.270
D	137	27	54	81	13.590
E	23	5	10	20	02.275
Total	1005	201	402	603	100%

Table 6: Actual Normal Distribution Item

Strata	EP	S1	S2	S3	%
A	17	3	6	10	01.69
B	167	33	67	100	16.62
C	647	130	260	389	64.38
D	158	32	63	95	15.72
E	16	3	6	9	01.59
Total	1005	201	402	603	100%

As for the numbers of accounts which have been appeared as a result of the calculated percentages by the program, it is found that for the total number of accounts for the society and for each sample do not differ, but the difference has been appeared in the number of accounts in each stratum of the live strata as for the whole society or as for each sample (table 6). But in spite of thus difference, it can be said that this distribution is inn compatible with the normal distribution to a great extent. The evidence for this is that the special value for cach sample will not differ too much as it will be seen in the result of testing the fourth hypothesis.

The contents of the two tables have been expressed in figure 4, and figure 5. The figures indicate that the distribution of the

items of the society and the sample in accordance with the standard percentages, there is no difference in the two figures as they represent the normal distribution curve.

The result: By analyzing the last results, the third null hypothesis can be rejected and accepting the alternative hypothesis which states that it is proposed that the sample items are representing the real population of auditing precisely.

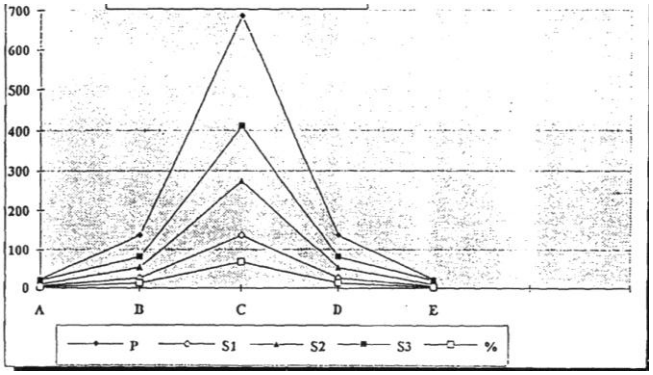

Figure 4: Standard Normal Distribution

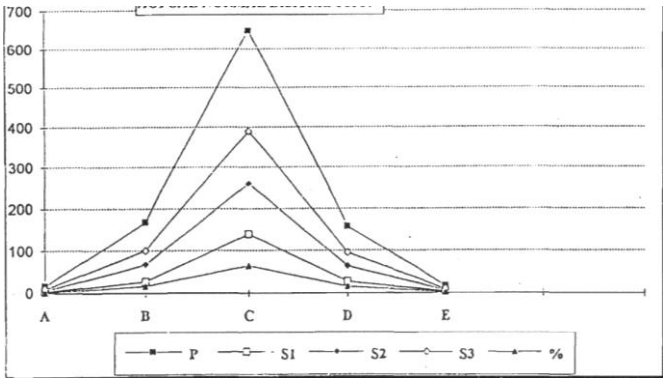

Figure 5: Actual Normal Distribution

The Test Result of the Fourth Hypothesis

In the last experiment, the values of the account in each stratum of the society's strata have been compared firstly and the values of accounts in each stratum of the strata for each sample. (The first, second, and the third). The tables 7, 8, 9 indicate the comparison between the values of the accounts. Upon analysing the results obtained from the program output, it can be said that.

The first comparison between the values calculated in advance for the society's strata according to the standard deviation and the range in accordance with the equations mentioned previously from table 7, it is found that the values calculated for each stratum of the society's strata are compatible with the actual values calculated by the program after dividing the society into five strata. This gives an evidence for the possibility of the program to divide the society into strata accurately and in agreement with the auditor expectations when calculating the range of the values of the accounts for each stratum of the strata.

The following comparisons concern each sample in particular. This comparison is considered to be important because it will prove whether the chosen sample represent the society as for size or the values of the accounts or not. Each sample has been extracted twice, the first time by the standard percentages, and the second time by the actual percentages in accordance with the real distribution of the society (tables 8 & 9). By analyzing the two table's content it is found that:

1) The beginnings of the values of the accounts in each stratum of the live strata whether in the society or in each sample are approximately compatible and in a precise.

Table 7: Range of population's values

Strata	Counted Values			Actual Values		
A	> 942	:		949	:	1050
B	> 732	:	< 942	732	:	940
C	> 312	:	< 732	315	:	730
D	> 102	:	< 312	105	:	310
E	< 102	:		15	:	100

Table 8: Sample #1: Range of sample's values

Strata	Standard Ratios			Actual Ratios		
A	949	:	1040	949	:	990
B	732	:	870*	732	:	872
C	315	:	730	315	:	639
D	105	:	285*	105	:	280
E	10	:	100	15	:	78

Table 9: Sample #2: Range of sample's values

Strata	Standard Ratios			Actual Ratios		
A	949	:	1050	949	:	990
B	732	:	838*	732	:	872
C	315	:	655*	315	:	639
D	105	:	260*	105	:	280
E	10	:	99	15	:	78

* Unexpected values

Form with the beginnings calculated in advanced for the values of these accounts in spite of the difference in the numbers of accounts. This give an evidence of the preciseness of the equations in calculating the value for each stratum of the fifth start.

2) The end results of the values of the accounts for each stratum partially differs from the end results of the values of the accounts calculated in advance.

By analyzing this result it is found that the reason for these little difference can be attributed to the process of rounding the figures which is mentioned previously, these differences are considered very little to the extent that the auditor has confidence that the sample is in compatible with the value calculated in advance. It is noticed that the samples withdrawn on the basis of the actual percentages are compatible with each other as for the ends of the values of the accounts in contrary to the samples withdrawn on the basis of the standard ratios.

The question which must be raised here is "What the auditor must use the standard percentages or the actual percentages?". The researcher sees that the auditor can use the standard percentages as they are more accurate concerning the number of accounts and the values to the values calculated in advance, these values have been expressed in the figure 6, from the figure it is clear that the differences between values are very little and can be disregarded.

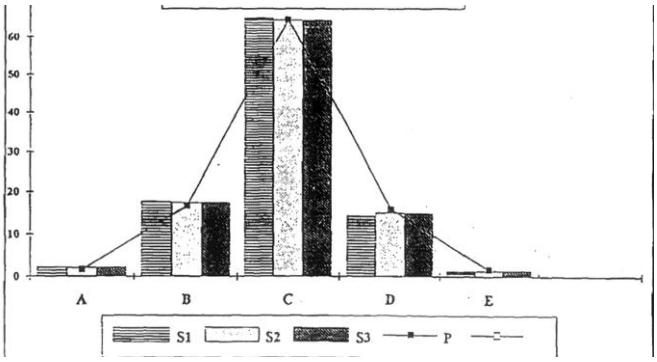

Figure 6: Range of Balances Values

The Result

From the previous results, we can refuse the null hypothesis and accept the alternative hypothesis which states: The values of the accounts extracted from each stratum of the society's strata are compatible with the values calculated in advance for each stratum of the society.

And from the results of testing the four hypothesis the auditor must be completely confident regarding the withdrawn samples as for sample size and as it is completely represent the society under consideration.

CONCLUSION

The field of interest of this study is considered vital. It has been concentrating in the field of auditing in general and in EDP auditing in particular. And to be more specific variables sampling by using a specialized audit software.

The theoretical study concentrated on the importance of using audit software and on variables sampling.

The researcher has proposed a new concept for variables sampling by using new percentages (Ratios) for the normal distribution. It is named by the researcher as a Standard Normal Distribution Ratios (SNDR). These ratios can be used by the auditor as a guide in choosing a representing sample forth e society under consideration.

The empirical study is built on this new concept. A special program has been designed to apply this new concept. This study showed good results concerning the possibly of obtaining a representative sample for the society under auditing. This sample is a stratified regular sample. The program calculates automatically the range on the basis of the sample size as to the size of the society.

The result of the study proved that the values of the accounts extracted from the sample are completely identical to the values calculated in accordance with the standard deviation and the arithmetic mean.

As for the future studies in this field, the researcher sees it is a rich field which requires more researches to develop this program in order to be an integrated program in the field of EDP Auditing.

REFERENCES

[1] Ames, Alvin A., and Loebbecke, James K. ,Auditing An Integrated Approach, Prentice-Hall Inc., Englewood Cli11, New Jersy, 2006.

[2] Kell, W.G., and Ziegler R.E., Modern Auditing, John Wiley &Sons, New York, 2004.

[3] Litecky, Charles K., and Ron Weber, "The Demise of Generalized Audit Software Packages?" Journal of 'Accountancy (November 2005), PP.45-48.

[4] McHugh, Arther J. "ED? and the Audit Function ." Accounting Education (November 2011) PP. 34-54.

[5] Perry, William E., " Audit Aspects of Utility Programs," EDPCS (October 2012) PP. 1-8.

[6] Robertson, Jack C. and Davis, Frederick G., Auditing, Business Publications, Inc., Piano, Texas, 2007,

[7] Tolba, All I, "A Proposed Model for Tracing Audit Trails in Advanced Information Systems An Applied Study ". Ph.D., unpublished thesis, Faculty of Commerce, Ain Shams University, Cairo, I989.Chapter 4.

[8] Weber, Ron, ED!' Auditing Conceptual Foundations and Practice, McGraw-Hill, Inc., United States of America, 2009.

[9] Weber, Ron, On Some Aspects of Audit Software Attributes and User Needs, " Proceedings of the Eighth Australian, computer conference (Canberra, Australian Computer Society, lnc.),in Ron Weber, EDP Auditing, 2003,p.433.

[10] Will, Hart J., " Discernible Trends and Overlooked Opportunities in Audit Software," The EPP Auditor (Winter 2005), l'P.21-45.

[11] Willingham, John J., and Carmichael , P.R.. Auditing Concepts and Methods, McGraw-Hill Book Company, New York, 2008.