

## EXPLORING THE RELATIONSHIP BETWEEN ANALYTICAL METHODS OF REVIEW AND PROFESSIONAL VALUATION OF INDEPENDENT ACCOUNTANTS

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### **Abstract**

Due to growing need to auditors for performing professional work in an efficient and effective manner and logical assessment about overall financial bills, analytical solutions have found growing importance in financial bills. This research explores the relationship between analytical methods of audit and professional assessment of audits. For this purpose, relationship between analytical methods – in three stages of planning, implementation and finalization of audit – and professional assessment of audits is tested.

Statistical population of this research includes auditors working in auditing organization. Sample was selected randomly and questionnaire containing 27 questions was distributed among auditors in supervisor, superintendent and technical manager levels.

Results illustrate that using analytical methods in three aforesaid stages has a significant relationship with professional assessment of auditors and using analytical methods leads to rational assessment of them in facing various cases of auditing and consequently, logical assessment about audit report which is the final product of auditing process.

**Keywords:** analytical methods, audit, professional assessment of audits

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## Introduction

By growing complexity of economic activities of commercial units as well as conflicting interests of owners and managers and consequently, ensuring financial information which is the basis of decision making of users of financial bills, demand for audit increase considerably. On the other hand, pressures and competition in market for audit services for efficiency, reducing costs as a result of less auditing time while maintaining work quality, making client satisfied and increasing effectiveness and efficiency prompted auditors to apply changes in their auditing methods in encountering various issues in the process of auditing and logical assessment about overall financial bills. One of these methods is using analytical methods in various stages of auditing.

In summary, this paper explores the relationship between analytical methods of audit and professional assessment of independent auditors. This research illustrates the logical and rational assessment of auditor in facing various cases of audit by applying analytical methods of auditing.

## Problem statement

According to the article of the report of independent auditor and legal inspector, assessing financial bills of the department is in accordance with auditing standards. In the process of audit of financial bills, auditor must use methods by which absence of significant deviation in financial bills is ensured in a rational manner. Selection of auditing methods depends upon professional assessment of auditors including assessing risk of significant deviation due to fault or fraud in financial bills. In line with meeting auditing standards, independent auditors must prepare and implement their auditing plans and methods in the framework of approved auditing standards of auditing organization. One of these standards is standard 520 entitled “analytical methods of auditing”. Analytical method of auditing is a pervasive term which is applied in three stages of auditing and at the end of the process.

## Importance of research

Analytical methods are the best auditing methods and necessitate evaluation and analysis of data leading to considerable consequences. Therefore, with regard to the importance and extensive applicability of analytical methods in the process of auditing, attention must be paid to the pivotal role of professional assessment of auditors specially in using these methods and decision making about the results and it is important to take analytical methods into account to gain a better understanding about the activity of the audited department and to determine the potential risks as well as evaluation of the relationship between financial and non-financial information so that with the help of experiences people and high levels of audit, probable deviations of such assessments can be minimized and audit risk can remain in a tolerable level.

## Research goals

Since in Iran there is limited knowledge about the nature and capability of analytical methods, moreover, due to the development of economic activities of commercial units and pressure of competition in market for auditing services, along with expressing benefits of using analytical methods; i.e. increasing efficiency and speed of audit and reducing time and cost of audit, its contribution to professional assessment of auditors which is the basis of assessment of auditors in reports of auditing financial bills will be evaluated.

## Research questions

### Main question

Do independent auditors who use analytical methods in auditing financial bills have rational and logical assessments?

### Secondary questions

1. What is the relationship between finalization stage of audit and professional assessment of auditors?
2. What is the relationship between educational level and professional assessment of auditors?
3. What is the relationship between experience level and professional assessment of auditors?

## Research hypotheses

### Main hypothesis

Auditors who use analytical methods for auditing financial bills have more rational and appropriate assessments.

### Secondary hypothesis

1. There is a relationship between analytical methods in finalizing stage of audit and professional assessment of auditors.
2. There is a relationship between educational level of auditors and professional assessment of auditors.
3. There is a relationship between experience level of auditors and professional assessment of auditors.

## Research methodology

This is a descriptive research and is applied from objective point of view. In descriptive researches, researcher looks for the nature of the subject and wants to know that how is the

variable phenomenon of the object or matter. In other words, this research investigates the current situations and describes it in a regular and systematic manner and studies the characteristics and specifications of it and if necessary the relationship between variables. To collect data, questionnaire was used which was distributed among managers, supervisors and superintendents.

### **Data collection method and tool**

In present paper, to collect data, library method is used. After returning questionnaires and responses, data were entered Excel and statistical tests were performed using SPSS software.

To analyze data, two methods of descriptive and inferential statistics; f-test and t-test were used.

### **Research domain**

*Subject domain:* this research explores the issues corresponding to using analytical methods in audit and its contribution to professional assessment of auditors in facing various issues.

*Spatial domain:* spatial domain of research includes all auditors working in auditing organization in supervisor, superintendent and manager levels.

### **Statistical population**

Statistical population of this research includes all supervisors, superintendents and managers working in auditing organization and according to information received from the organization, there are 365 supervisors and superintendents and 65 managers and by 430 people as statistical population, volume of the sample will be as much as 203 people. Due to high number of audits in sample and to reduce them, Yates formula is used and eventually, sample volume was reduced to 138 people.

### **Terminology**

In this research, analytical methods of audit are considered as independent variables and professional assessment of independent auditors as dependent one and educational level of auditors was considered as control variable. In what follows, we explain each of them and the way they are measured.

### **Conceptual definition of analytical methods**

In auditing standard 56, analytical methods are defined as follows: “evaluation of financial information through interaction of rational and probable relationship between financial and non-financial data which necessitates the comparison of recorded value with auditor expected ones.”

According to paragraph 520 of auditing standards, analytical methods is the analysis of ratios and major trends including fluctuations and financial and non-financial relationships which do not

conform to the other information and are biased with respect to predicted values. Analytical methods are applied in three stages of planning, implementation and finalization of the audit process. According to paragraph 2 of the same standard, application of these methods in planning and finalization of the process is mandatory.

*Professional assessment:* although there is no comprehensive definition about the professional assessment in audit, one of the definitions provided by America Association of Certified Public Accountants is as follows: “professional assessment in audit refers to application of knowledge and experience in the field of accounting and auditing standards and professional behavior regulations so that required decisions regarding selection of appropriate solution among various options can be made.”

*Audit experience:* experience in a field refers to facing a certain case which provides an opportunity for business (Libby, 1995).

Experience has an undeniable effect on the assessment of auditor. Experience leads to improvement of auditing capabilities in data processing and providing various solutions in certain situations. Same experience causes the formation of a framework for assessment of auditor leading to decision making and data interpretation methods (Gibbins, 1984).

## Results

### Normality of distribution of variables

To investigate the normality of distribution of variables, Kolmogorov – Smirnov test was used. Null hypothesis in this test represents the normality of variables distribution. If the level of significance of the test is higher than 0.05, null hypothesis is approved and we conclude that distribution of variable is normal.

According to obtained significance level, it can be concluded that all variables have normal distribution ( $p < 0.05$ ).

Table 1: results of Kolmogorov – Smirnov test for normality of scores distribution

	Number	z-test	Confidence level
Relationship between using analytical methods and professional assessment	119	0.986	0.286
Relationship between using analytical methods in planning stage of audit and professional assessment	119	0.909	0.380

### Hypothesis test and data analysis

**Main hypothesis:** There is a relationship between using analytical methods in audit of financial bills and professional assessment of auditors.

To test this hypothesis, t-test is used. Scores are from 1 to 5. Therefore, value of the test as much as 3 which is the average value of the variable is considered. An average value more than 3 represents strong relationship and a value less than 3 stands for a weak relationship.

$H_0$  (null hypothesis): the relationship between analytical methods and professional assessment is in average level.

$H_1$  (alternate hypothesis): the relationship between analytical methods and professional assessment is not in average level.

Average of the variable of the relationship between analytical methods and professional assessment is 3.87 and confidence level of the test is 0.001. Since the confidence level is less than 0.05, null hypothesis is rejected. On the other hand, since average is more than 3, it can be concluded that the relationship between analytical methods and professional assessment is significantly higher than average. It means that using analytical methods in audit of financial bills is significantly related to professional assessments of auditors.

Table 1: results of t-test for relationship between using analytical methods and professional assessment

Variable	Test value=3						
	Number	Mean	Standard deviation	t-test	DOF	Confidence level	Mean difference of variable with test
Relationship between using analytical methods and professional assessment of auditors	119	3.868	0.403	23.46	118	0.0001	0.86

**1<sup>st</sup> secondary hypothesis:** There is a relationship between using analytical methods in finalization stage of audit and professional assessment of auditors.

To test this hypothesis, t-test is used. Scores are from 1 to 5.

$H_0$  (null hypothesis): the relationship between analytical methods in finalization stage and professional assessment is in average level.

$H_1$  (alternate hypothesis): the relationship between analytical methods in finalization stage and professional assessment is not in average level.

Average of the variable of the relationship between analytical methods in finalization stage and professional assessment is 3.73 and confidence level of the test is 0.001. Since the confidence level is less than 0.05, null hypothesis is rejected. On the other hand, since average is more than 3, it can be concluded that the relationship between analytical methods in finalization stage and professional assessment is significantly higher than average. It means that using analytical methods in finalization stage of audit of financial bills is significantly related to professional assessments of auditors.

Table 2: results of t-test for relationship between using analytical methods in finalization stage and professional assessment

Variable	Test value=3						
	Number	Mean	Standard deviation	t-test	DOF	Confidence level	Mean difference of variable with test
Relationship between using analytical methods in implementation stage and professional assessment of auditors	119	3.729	0.52511	15.16	118	0.0001	0.72969

**2<sup>th</sup>secondary hypothesis:** There is a relationship between educational level of auditors using analytical methods and professional assessment of them.

To test this hypothesis, t-test is used. Null hypothesis is equality of average of dependent variable for BSc and MSc graduated auditors. If the confidence level is less than 0.05, null hypothesis is rejected.

Required condition for comparison of averages is the equality of variances of dependent variable for both groups. Therefore, test of variance equality is performed using Levene's test. According to significance level of Levene's test as much as 0.31 which is higher than 0.05, equality of variances is approved.

Average of the relationship between analytical methods and professional assessment from BSc graduated auditors' point of view is 3.83 and from MSc graduated auditors' point of view is 3.92 and significance level is 0.201. According to significance level which is more than 0.05, null hypothesis is not rejected. Therefore, there is no significant relationship between educational level of auditors using analytical methods and their professional assessment.

Table 3: independent t-test for comparison of the relationship between analytical methods and professional assessment based no degree

Variable	Degree	Number	Mean	Standard deviation	Levene test		t-test		
					f-test	S.L	t-test	DOF	S.L
Relationship between analytical methods and professional assessment	BSc	65	3.825	0.41761	1.018	0.31	1.28	117	0.2
	MSc	54	3.92	0.38406					

**3<sup>th</sup>secondary hypothesis:** There is a relationship between experience of auditors using analytical methods and professional assessment of them.

To test this hypothesis, one-way ANOVA is used. Null hypothesis is ANOVA is the equality of the average of dependent variable in all levels of independent variable. If the significance level of the test is less than 0.05, null hypothesis will be rejected. Rejection of this hypothesis means relationship between variables.

Significance level of ANOVA is 0.199. Since the value of significance level of ANOVA is more than 0.05, null hypothesis is not rejected. Consequently, there is no significant relationship between experience of auditors in using analytical methods and their professional assessment.

Table 4: results of ANOVA for comparison of the relationship between analytical methods and professional assessment in various experience levels

Experience	Number	Mean	Standard deviation	f-test	Significance level
6-10 years	27	3.8026	0.42832	1.527	0.199
11-15 years	22	3.9576	0.31667		
16-20 years	14	3.9812	0.41765		
20-25 years	38	3.8990	0.41059		
>25 years	18	3.7062	0.41210		

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