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## INTERNAL AUDIT CONTRIBUTING FACTORS AND ITS EFFICACY ON NONCOMPLIANCE ACTIVITIES IN PUBLIC SECTOR ORGANIZATION



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### ABSTRACT

The main objective of this paper is to evaluate the contributing factors of the internal audit and their effectiveness on non-compliance activities in the South Wollo Zone's public sector finance and economic development offices. Explanatory analysis approach was used to perform the study. The research focused on six public sector offices to collect primary data through a questionnaire from Wollo Finance and Economic Development administrators, management teams, accountants, purchasing officers and internal auditors and 155 samples were collected using a stratified random sampling process. The data collected by using Likert scale was analyzed by the Binary Logit regression model, with the presence of internal audit effectiveness on noncompliance activities as dependent variables and six independent variables. As a result, each of these six independent variables account for Fifty-five per cent of contributions to internal audit effectiveness. Henceforth, the outcome supports to formulate strategies to Ministry of Finance and Economic Development to understand the necessity of eradicating the corruption practices and also associate with Ethiopian Education institutes to improve the quality of certified internal auditors.

**Key Words:** Efficacy of Internal Audit, Contributing factors, Non-compliance activities, Internal and External auditors and Ethiopia Public Sector Offices

### Introduction

Internal audit (IA) typically focuses on strong internal management and compliance with policies and regulations to ensure that the company works in an appropriate manner in order to achieve its objectives. The key factor in the growth of internal auditing was the broader spectrum of control faced by management in operations spread across various locations (Ferdinand & Mahzan, 2013). The management of the business can also rely on the internal audit feature for the detection of fraud. In addition, the call for good governance in the company has encouraged the value of the internal audit feature. Specifically, the function of the internal auditor is to review the internal control structures, which

consist of the rules and standards developed by the management. The key goals of the internal control system are to ensure the transparency of financial statements, the quality and effectiveness of operations and compliance with legislation and regulations. The internal control framework consists of five main components, such as the control climate, risk evaluation, control operations, information and communication and monitoring (Arens et al . 2008).

In the accounting profession, audits play a significant role in serving the public interest by raising managers' transparency and building confidence and faith in the financial reporting process, and act as a significant link in

the corporate and financial reporting process for companies and not for profit providers at the organizational level (Reynolds, 2009). In this sense, the internal audit identifies weak links within the framework and provides possible opportunities for change and serves as a feedback mechanism for the top management. Organizations seeking an acceptable and efficient quality control system also need to perform internal audits to ensure that the system works as expected (Lindow and Race, 2002).

Besides, the Board of Directors of the new Institute of Internal Audit (IIA, 2001) described internal audit as: "Independent, objective assurance and advisory activities intended to add and develop the operations of the company. It allows an organization to achieve its goals by adopting a structured, focused approach to evaluating and enhancing the effectiveness of risk management, control and governance process".

While internal auditors have many responsibilities and contributions to the company and to the public interest, the job environment poses many challenges for their profession. Some of the problems identified by the Ministry of Finance and Economic Development (2004) in its Internal Audit Manual are lack of respect for management, lack of independence, and the assignment of internal auditors to many tasks and being ignored (conflict of interest) and lack of professional development.

Besides, the quality and efficacy of public sector management activities are assured by the productivity of its workers. Internal auditors who are the subject of this report, as well as key public office personnel, are required to work independently and critically to improve the quality of public services, to achieve a strong internal control system, to prevent corruption, to ensure good corporate governance system, promote accountability and greater transparency

(Coram et al, 2008; Van Peurseem 2005; Belay, 2007).

Furthermore, the number of actual audits carried out over a period is typically less than the number of audits set out in the annual audit plan does not help the efficacy of the internal auditors in the company. The scope of this research focuses on the efficacy of internal auditors; on the capacity of internal auditors to detect non-compliance activities and on the added contribution of internal audits (IA) to public sector offices located in the South Wollo Region to demonstrate the impact of internal auditors (Cohen & Sayag, 2010; Arena and Azzone, 2009).

With this in mind, the researcher will aim to find the relationship between the contributing factors of internal audit and its efficacy on noncompliance reports in the Public Finance and Economic Development Offices. In particular, how organizational independence, management's perception of IA's value, management support, approved IA charter, adequate competent internal audit staff, and relationship between the external auditor and internal audit is conserved.

### **Material and Methods**

The South Wollo Zone has been formed by the states of the Federal Democratic Republic of Ethiopia and is one of the 10 zones in the Amhara region of Ethiopia. The major cities of South Wollo include Kombolcha, Hayq, Dessie, Wuchale and Mekane Selam. Explanatory research design was adopted to carry out the study. The target populations for this research are selected Woredas (districts) public sector offices located in the South Wollo Zone Finance and Economic Development Office, Amhara Regional State. There are about 24 Woredas in the South Wollo region, all of which have internal audit workers (Ethiopian Legal Brief, 2013). The researcher, which focuses on six designated

public sector offices with a total population of 276, is also very popular in nature and has a greater impact on the overall social, political and economic issues of the South Wollo Zone. Therefore, the representative samples are calculated using the scientific formula adopted by Yamane (1967), the sample size shall be determined as follows.

$$n = N / (1 + N (e)^2)$$

Whereas: n = size of the sample, N =total number of internal auditors, senior officers and managers in public offices and e = sampling error on this research. The

researcher believes that the minimum confidence level for this analysis is 95 per cent and 5 per cent accuracy and that the sample size was 163 as calculated by the application of the formulas. These samples were taken from the population using a cluster sampling design. The cluster base of this population is based on a randomly selected method. As a result, six Woredas were chosen from a total of 24 Woredas. Based on the above sample size, the researcher used the Proportional Allocation Approach to take the sample from each stratum.

**Table 1: Target population and Sample size of each Woreda**

S.No	Focused Woredas/ Public Sector office	Population Size	Sample Size
1	Borena Woreda Finance and Economics Development office	49	29
2	Dessie City Administration Finance and Economics Development office	48	28
3	Kombolcha City Administration Finance and Economics Development office	48	28
4	Kutaber Woreda Finance and Economics Development office	48	28
5	Tehuledere Woreda Finance and Economics Development office	40	24
6	Wereilu Woreda Finance and Economics Development office	47	28
	<b>Total</b>	<b>276</b>	<b>163</b>

(Source: South Wollo Zone unpublished report from each Sector HRM EFY,2011 E.C)

Primary data were obtained from 163 survey respondents through a standardized questionnaire. The layout of the questionnaire is very convenient, accurate and simple, and it is prepared in English and Amharic versions, which help to promote meaningful participation by the respondents. As a result, the researcher distributed questionnaires to a total of 163 respondents by choosing each respondent on purpose to WFED Leaders, WFED Management Teams, Accountants, Budget Officers, Purchasing Officers, and Internal Auditors. Demographic information was evaluated using a simple percentage analysis and the Binary Logit regression model was used to define the relationship and efficacy

of the internal audit by taking dependent and independent variables.

### **2.1 Independent and Dependent variables**

The independent variables consist of six determinants and the variables are used to assess the efficiency of the internal audit. Independent variables were calculated using five point Likert scales ranging from strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5) as responses from respondents. The **six independent variables** used for the study are described below:

(i) Organizational Independence (OI):- The auditors should be sufficiently independent from those they are required to audit in order to conduct their work without interference.



(ii) Management View of Internal Auditing (MPIA):-Internal auditors and audit clients should have a common understanding of what makes internal auditing a value-added operation. Failure to meet this understanding may lead to the impression that internal audit is simply an obstacle to the achievement of production objectives.

(iii) Management support for internal audit (MSIA):-Management acknowledges the degree to which management offers appropriate audit guidelines for preparation, the use of emerging technologies and the growth of budget personnel.

(iv) Availability of approved internal audit charter (AAIAC) :-This helps to guide the audit staff 's efforts and determines what the board should expect from the internal control assurance mandated by the IA.

(v) Adequate and Competent Internal Audit Staff (ACIAS):-Measured in terms of education level, expertise and staff 's dedication to continued professional growth and compliance with audit standards.

(vi) Relationship between Internal auditor and External Auditor (RIAEA):-Internal auditors may have a problem of objectivity and independence in the public sector, but external auditors are not in the same vessel. Internal auditors should also often help to guide external auditors in the right direction in order to accomplish the organizational objectives effectively. The dependent variable for this research is the internal audit effectiveness. It is measured in terms of internal auditor's ability to identify non-compliance activities with the office procedures and policies, and the contributions added by IA to the public offices. Compliance audit is a type of audit service that mostly performed by internal auditors of the organization (Fadzil, F.H et al, 2005).

## 2.2 Model Specification

Binary logistic regression is one of multivariable statistical analysis used to measure the probability of two possible outcomes (Bagley S. C.et al, 2001). The two possible outcomes are either there is presence or absence of internal audit effectiveness in public sector organization. The proportion of the presence in population represents the probability  $p(y=1)$  for a randomly selected subject. The probability varies according to the values of the explanatory variables. Binary data models, which are dichotomous in nature, assume a binomial distribution that is well defined in Hollander & Wolfe (1973); Whittle, (1976); Krzanowski, (1998); Gujarati, (2004:); Spiegel et al, (2004); and Awogbemi & Oguntade, (2012) for the dependent variable.

A dichotomous random variable is defined by  $y$ , and then the binary answer variable  $y$  has two

1 = Presence of internal audit effectiveness, let assume  $p(y=1) = \pi(x)$   
 0 = absence of internal audit effectiveness... $p(y=0) = 1 - \pi(x)$

the dependency variable may have a value of 1 with a probability of  $\pi(x)$  present, or a value of 0 with a probability of  $1 - \pi(x)$  absent. This type of variable is called a Bernoulli or binary variable. Therefore, the question for Binary logistic regression was formulated as follows: (Gujarati, 2003) gave the general expression for logistic model as

$$Li = \ln \frac{p}{1-p} = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \dots + \beta_n X_{in} + \mu_i, \dots (1)$$

Where,  $Li$ -logs of odds ratio/log it,  $i=1, 2, \dots, 7$   
 $\ln$ -natural logarithm,  $\beta_i$ -coefficient for each independent Variable,  $\beta_0$ - intercept of the regression

$X_i$ -each independent variable and  $\mu_i$ -error term.

From this general logit model, the following were derived and applied for this specific study

$$Li = \beta_0 + \beta_1 OI + \beta_2 MPIA + \beta_3 MSIA + \beta_4 AAIAC + \beta_5 ACIAS + \beta_6 RIAEA + \mu_i, \dots (2)$$

Where:  $\ln$ -log of the odd ratio of internal audit effectiveness.

Where,  $Y = \ln = \ln$  Dependent variable (internal audit effectiveness)

OI=Organizational Independence

MPIA=Management Perception of Internal Audit

MSIA=Management Support of Internal Audit

AAIAC=Availability of Approved Internal Audit Charter

ACIAS=Adequate and Competent Internal Audit Staff

RIAEA=Relationship between Internal auditor and External Auditor

$\mu_i$ =Error term

### 3. Results and Discussion

The research objective was to establish the relationship between the factors leading to the internal audit and its efficacy in the South Wollo Finance and Economic Development Office. Based on the questionnaire outcomes, the findings of the analysis were discussed. A total of 163 questionnaires were distributed to WoFED Heads, Management Committees, Internal Auditor, Budget Officers, Accountants and Purchasing Officers, but 8 questionnaires were not received due to professional responsibilities

and were not interested in participating in the survey. In general, the response rate was 95.1 per cent and 4.9 per cent was not reached. The data collected was analyzed using the SPSS version 20.0 software application method.

#### 3.1 Respondents' Profile in the Organization

Table 2 indicates that there were a greater number of female respondents than male respondents, who accounted for 51.0 per cent and 49.0 per cent respectively working on public finance and on WoFED heads, management teams, internal auditors, accountants, budget officers and purchasers, in selected organizations of South Wollo Zone. The majority of respondents were studied in the accounting, economics and management fields, which indicate a strong commitment of professionals to their appropriate work in relation to internal audit. Most of the respondents have BA degree and thus enough to recognize internal audit practices and the deciding factor for the efficacy of internal audits. In addition, the next highest proportion of workers' experience between the ages of 6-10 years and the more experienced personnel, the more they understood the organizations internal audit activities.

**Table 2: Demographic factors of the respondents**

S.No	Particulars	Description	Frequency	%
1	Gender	Male	79	51
		Female	76	49
2	Field of Study	Accounting	60	38.7
		Management	56	36.1
		Economics	33	21.3
		Others	6	3.9
3	Academic Background	Diploma	49	31.6
		BA Degree	98	63.2
		Masters	8	5.2
4	Work Experience	Less than 5 Years	22	14.2
		6-10 Years	64	41.3
		Above 10 Years	69	44.5
			155	100

Source: Primary data 2020

### 3.2 Internal Audit Contributing Factor

From table 3, it can be concluded that the majority of respondents are above the mean level of 3.00 which indicates that all

statements submitted under these six independent variables are accepted between the mean values of 3.19 to 3.68 by the respondents.

**Table 3: Internal Audit Contributing Factors**

S.No		Factors and Statements	N	Mean	Std. Dev
1	Organizational Independence	Internal auditor can freely include any audit finding and report directly to responsible body.	155	3.43	1.168
2		The internal auditors have confidence to issue audit report because they are free to determine the nature and frequency of noncompliance activities	155	3.19	1.105
3		Internal auditor plans its activity without the interference of the management.	155	3.21	1.081
4		Internal Auditors are independent of management in exercising auditing related decision.	155	3.66	1.147
5		I will objectively evaluate the auditing issues based on reliable audit evidence and no management interest in adjustment beyond auditing standards and values	155	3.52	1.203
6	Management's perceptions	The public sector encourages me to implement my recommendations, to promote value-added activities and to strength internal audit function.	155	3.46	1.244
7		The public sector has enough awareness and good perception about internal auditing roles.	155	3.24	1.254
8		The activities of internal audit are clearly recognized by the management in my office/sector.	155	3.56	1.185
9		The position/status of internal audit is clearly recognized by the management in my office/sector.	155	3.48	1.26
10	Management Support	The management uses the recommendations, criticisms and information provided by internal auditor for decision making.	155	3.50	1.192
11		Internal auditing practices are considered as a value adding activity and can work smoothly & regularly with the management.	155	3.59	1.199
12		Internal auditors receive full cooperation, access to records and information from the office/sector.	155	3.55	1.223
13		Internal auditors are provided related trainings to improve their skill, to introduce with new technology, policy and procedure.	155	3.20	1.276
14	Availability of Approved	Internal Auditors have a formal mechanism to get senior management attention to place escalation issue.	155	3.63	1.191
15		Internal audit charter is maintained (available) in all office /sector.	155	3.52	1.271
16		The internal audit charter is reviewed annually for effectiveness of audit.	155	3.57	1.207
17		The purpose and authority of internal audit is clearly defined in charter.	155	3.19	1.105
18	Adequate and Competent Internal Audit Staff	It is possible to audit and review each activity on time, and cover the planned scope of auditing activities.	155	3.48	1.197
19		The work of internal audit is performed with modern technology that uses computerized data tools and specific IA software.	155	3.63	1.152
20		The non-compliance reports provided by internal auditors are reliable and significant to the organization/sector.	155	3.25	1.204
21		The auditors in your organization are competent enough to undertake audit function.	155	3.68	1.139
22	Relationship between	Copies of internal audit reports are sent to the external auditor regularly.	155	3.21	1.227
23		The external auditors rely on my work and findings.	155	3.26	1.056
24		Internal auditor keep the external auditor informed about any significant matters that come to my attention which may affect the external auditor's work.	155	3.63	1.168

Source: SPSS Results, 2020

Furthermore, the management support, the availability of Approved Internal Audit Charter and the adequate and competent internal audit staff are among the maximum contributing factors. Therefore, the organization of the public sector should concentrate on creating operational organizational independence, positive perceptions of management and a cordial link between internal and external auditors for the smooth accomplishment of scheduled work.

### 3.3 Binary Logistic Regression Analysis

A statistical analysis which would integrate more than one predictor variable at a time is necessary to achieve under this research. In

this analysis, the binary logistic regression approach was implemented to classify the effect of each of the selected predictor variables on the efficacy of the internal audit for the effects of another predictor variable. The results of the logistic regression analysis were used to assess the effect of each particular parameter on the effectiveness of the internal audit, its impact rating and the prediction of cumulative effects on the internal audit. The mathematical model obtained by replacing the  $\beta$  coefficient of eq 1 with the value obtained through binary logistic regression analysis was the basis for the estimation of cumulative effects. In these circumstances the eq 1 became

$$\text{Logit}(\pi(x)) = \pi\left(\frac{x}{1-\pi(x)}\right) = \beta_0 + \beta_1 X_{OI} + \beta_2 X_{MPIA} + \beta_3 X_{MSIA} + \beta_4 X_{AAIAC} + \beta_5 X_{BACIAS} + \beta_6 X_{RIAEA} + \mu_i \dots \quad (3)$$

where  $\beta_1, \dots, \beta_6$  are computed logistic regression coefficients using statistical software program, specifically the natural logarithms of the "odds\_ratio" for each variable;  $\beta_0$  represents the constant (similar linear regression); and  $X_{OI}, X_{MPIA}, \dots, X_{RIAEA}$ , represent the values of determinants of internal audit.

The values of the regression coefficients and their statistical significance obtained by Enter logistical regression method were included in Table 4. The logistic regression could use two indicators such as Cox and Snell R<sup>2</sup> and Nagelkerke R<sup>2</sup>, the same as for coefficient r<sup>2</sup> from linear regression that estimates the contribution of predictor variable to the variability of dependent variable. The Nagelkerke R<sup>2</sup> indicator to analyze the contribution of all six predictor variables to the variability of the dependent variable. It has been unanimously recognized the fact that Cox and Snell R<sup>2</sup> indicator underestimates the real value. The test results (Table 4, Model Summary) based on the six predictor variables (OI, MPIA, MSIA, AAIAC, BACIAS, RIAEA) could explain in great proportion (55.1%) the effect of determinants on internal audit effectiveness.

The results from the classification table (Table 4) showed that the mathematical model predicts 71.0% of cases correctly, it can be concluded that it is a good performing model and its regression coefficients ( $\beta$ ) are shown in "Variables in the equation" (Table 4). The results from Wald test, also presented in Table 4, were useful for estimating which coefficients were statistically significant (significance < 0.05) and which were not statistically significant (significance > 0.05).  $\text{Exp}(\beta)$  represents "odds\_ratio" for each predictor variable, specifically  $e^{\beta_i}$ . In this case, if predictors p value is less than 0.05 ( $P < 0.05$ ); then each predictor has a significance effect on response/ dependent variable. Moreover,  $\text{EXP}(\beta)$  is namely called as odd ratio, it meant that it is the exponential of the logistic coefficients revealed relationship type between the predictors and the outcomes and also presents the extent or influence level to which raising the corresponding measure by one unit influences the odds ratio. Consequently, if the  $\text{EXP}(\beta)$  value just below 1 indicate the event is less likely to happen in the comparison than in the base group, and meaning that there is no effect of that

variable on the outcome at which result of the Wald statistic is near and became to zero and result of p-value is non-significant, if the EXP ( $\beta$ ) value is just above 1 to infinity indicate the event is more likely to happen in

the comparator than in the base group (Park and Hyeoun-Ae, 2013). For example, the EXP ( $\beta$ ) value associated with OI and MPIA are 0.546 & 0.826 respectively.

**Table 4: The binary logistic regression model—Enter method**

Model Summary							
Step	-2 log likelihood	Cox and Snell R <sup>2</sup>			Nagelkerke R <sup>2</sup>		
1 <sup>a</sup>	32.934	0.507			0.551		
Classification table <sup>b</sup>							
Predicted							
Internal Audit Effectiveness							
Observed			.00	1.00		Percentage correct	
Step 1	Internal Audit Effectiveness	0.00	12	38		24.0	
		1.00	7	98		93.3	
	Over all percentage					71.0	
Variables in the equation							
Parameter		β	S.E.	Wald	df	Significance	Exp(β)
Step 1 <sup>c</sup>	OI	0.605	.366	2.735	1	.098	.546
	MPIA	0.047	.168	.029	1	0.779	.826
	MSIA	1.010	.438	5.312	1	.021	2.745
	AAIAC	.857	.428	4.011	1	.045	2.356
	ACIAS	.931	.478	3.794	1	.051	2.536
	RIAEA	1.710	.498	11.797	1	.001	5.530
	Constant	-7.910	2.716	8.484	1	.004	.000

a. Estimation terminated at iteration number 10 because parameter estimates changed by less than 0.001.

b. The cut value is 0.500.

c. Variable(s) entered in step 1: OI, MPIA, MSIA, AAIAC, ACIAS and RIAEA

(Source: SPSS results, 2020)

Then, keeping another factor constant, the odds ratio is 0.826 times as large when MPIA is increased by one unit, and thus, internal audit performance is 0.863 times likely to present and important at one percent. In addition, the ACIAS-associated EXP ( $\beta$ ) value is 2.536 and the odds ratio is 2.745 times as high when the MSIA is increased by one unit. On the basis of Table 4, some of the explanatory variable coefficients of Wald statistics differ from zero (2.735, 0.029, 5.312, 4.011, 3.794, and 11.797), confirming the effect of the explanatory variable on the outcome, the p-value of each predictor is less than 0.05 which confirms that the above four explanatory variable (MSIA, AAIAC, ACIAS, RIAEA) are significantly determine the outcome. Therefore, MSIA, AAIAC, AAIAS, and RIAEA are the most significant factors of internal audit effectiveness and, at the same

time, OI and MPIA have negative relationship between the predictors and results.

#### 4. Conclusion

Internal audit is a key mechanism for ensuring good corporate governance and also plays an essential role in the overall management system. The presence of successful internal audit in the Company connects with the Internal Monitoring Risk Management System, increases operational productivity and efficacy, eliminates information asymmetry during decision-making, and guarantees the internal reliability of financial reporting process. The regression analysis indicates that there is a strong contribution of these variables to the IAE. The overall impact of management support, the presence of sufficient and approved IA personnel and the availability of approved IA charters in the



public sector are therefore very critical for the IAE in public sector offices, without neglecting the other two statistically insignificant variables such as Management Perception of internal Audit and Organizational Independence, because they have a positive sign of beta and contributed by 55.10% of the variances for the IAE. The Public Sector Office can support internal audit functions by promoting internal audit work, hiring more suitable and qualified IA personnel, offering adequate training and professional qualification to current internal audit staff, maintaining an approved internal audit charter, and also offering a favorable atmosphere for a smooth relationship between internal auditor and external audit. Finally, the Ethiopian higher education institution should contribute to the effectiveness of internal audit by working in

collaboration with the Ministry of Finance and Economic Development and other public sector agencies to carry out successful internal audit work by providing short-term training to upgrade current internal audit personnel in line with existing internal audit skills. The results of this paper are expected to improve the policies related to eradicating of corruption practices by prevention, viz. by strengthening the function of internal monitoring institutions conducted by the Government Internal Supervisory Apparatus. This study demonstrates that it is important to increase the performance of the internal auditor by using scarce resources wisely. Internal auditors are often important to add or generate value for the company, to prevent failure and to save operational and administrative costs in line with the policies and procedures of the organization.

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