



**DETERMINANTS OF INTERNAL AUDIT EFFECTIVENESS IN  
SELECTED GOVERNMENT UNIVERSITIES OF ETHIOPIA**

**MASTERS OF SCIENCE IN ACCOUNTING AND FINANCE**

**BY: SEIFU SHIGAZE SHEMBIR**

**WOLKITE UNIVERSITY, WOLKITE, ETHIOPIA**

**DECEMBER, 2020**

**DETERMINANTS OF INTERNAL AUDIT EFFECTIVENESS IN  
SELECTED GOVERNMENT UNIVERSITIES OF ETHIOPIA**

**A THESIS SUBMITTED TO THE  
DEPARTMENT OF ACCOUNTING AND FINANCE,  
COLLEGE OF BUSINESS & ECONOMICS, SCHOOL OF GRADUATE  
STUDIES WOLKITE UNIVERSITY**

**WOLKITE, ETHIOPIA**

**IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE  
DEGREE OF  
MASTERS OF SCIENCE IN ACCOUNTING AND FINANCE  
(MSC)**

**DECEMBER, 2020**

**DECLARATION**

I, the undersigned, declare that this MSc. thesis dissertation is my original work and has not been presented for degree in any other university, and all sources of material used for this thesis/ dissertation have been duly acknowledged and referenced all materials used in this work.

Name : Seifu Shigaze Shembir

Signature: \_\_\_\_\_

This Masters of Science in Accounting and Finance thesis /dissertation has been submitted for examination with my approval as Thesis/Dissertation advisor.

Name: Derese Mersha(PHD)

Signature: \_\_\_\_\_

Co-Advisor's

Name: Mitiku Melese (MA)

Signature: \_\_\_\_\_

Place and date of Submission: \_\_\_\_\_

**SCHOOL OF GRADUATE STUDIES**

**WOLKITE UNIVERSITY**

**ADVISORS' APPROVAL SHEET**

This is to certify that the thesis entitles “**Determinants of Internal Audit Effectiveness in Selected Government Universities of Ethiopia**”, submitted in Partial Fulfillment of the Requirements for the Degree of Master’s of Science in Accounting and Finance, the Graduate program of the **Department of Accounting and Finance**, and has been carried out by Seifu Shigaze Shembir with Id. No **GSE/055/08**, under our supervision. Therefore we recommend that the student has fulfilled the requirements and hence hereby can submit this thesis to the department.

-----

Name of major adviser

Signature

Date

-----

Name of co-adviser

Signature

Date



## **ACKNOWLEDGEMENTS**

I am so much grateful to the Almighty God for his kind and priceless help he has offered me throughout my life. I would also like to extend my gratitude to my lovely family who encourages me to accomplish this thesis.

I must convey my thanks to my main advisor Derese Mersha (PhD) who gave me invaluable comments, encouragement and support I needed in the thesis.

I must also convey my thanks to my co – advisor Mr. Mitiku Melese (MA) who gave me invaluable comments, encouragement and support I needed in the thesis work. I would like to express my deep heart-felt thank to my friends who have made themselves available providing me with the help I needed.

I would like also to acknowledge the cooperation of Internal Audit Office staff members, middle and top level managements who supported me in providing relevant data for the successful completion of the thesis.

# TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	i
TABLE OF CONTENTS .....	ii
LIST OF TABLES .....	vi
LIST OF FIGURES .....	vii
ABSTRACT .....	ix
CHAPTER ONE.....	1
INTRODUCTION .....	1
1.1. Background of the Study .....	1
1.2. Statement of the Problem.....	3
1.3. Objectives of the Study.....	5
1.3.1. General Objective .....	5
1.3.2. Specific Objectives .....	5
1.4. Research Hypotheses .....	6
1.5. Significance of the Study.....	7
1.6. Scope of the Study .....	7
<b>1.7. Limitations of the Study</b> .....	7
1.8. Definition of Key Terms.....	8
1.9. Organization of the Study.....	8
CHAPTER TWO.....	10
REVIEW OF RELATED LITERATURES.....	10
2.1. Conceptual and Theoretical Reviews .....	10
2.1.1 Basic Concepts of Internal Auditing.....	10
2.1.1.1. Definition of Internal Auditing .....	10
2.1.1.2. The Role of Internal Auditing.....	11
2.1.2. Theories of Internal Auditing .....	13
2.1.3. Internal Audit Effectiveness .....	15
2.1.4. Determinants of Internal Audit Effectiveness .....	16
2.1.4.1. Independence of Internal Auditors .....	16
2.1.4.2. Competence of Internal Audit Staffs .....	17
2.1.4.3. Management Support.....	18
2.1.4.4. Internal Audit Work Quality.....	19

2.1.4.5. Management’s Perception towards Internal Audit Value .....	20
2.1.4.6. Organizational Setting .....	20
2.2. The Risk Assessment Process.....	21
2.3. Review of Empirical Studies .....	24
2.4. Summary of Empirical Studies and Research Gaps .....	28
2.5. Conceptual Framework of the Study .....	29
CHAPTER THREE.....	31
RESEARCH DESIGN AND METHODOLOGY .....	31
3.1. Research Design .....	31
3.2. Research Approach: Quantitative and Qualitative.....	32
3.3. Methods of Data Collection and Instruments .....	32
3.3.1. Sources of Data.....	32
3.3.2. Data Collection Instruments .....	33
3.3.2.1. Questionnaire.....	33
3.3.2.2. Interview.....	34
3.3.2.3. Document Review .....	35
3.4. Target Population .....	35
3.5. Sampling Technique and Sample Size Determination .....	35
3.5.1. Sampling Technique .....	35
3.5.2. Sample Size Determination .....	36
3.6. Variables and their Measurements.....	37
3.6.1. Dependent Variable .....	37
3.6.2. Independent Variables .....	37
3.7. Validity and Reliability of the Instruments .....	38
3.7.1. Validity .....	38
3.7.2. Reliability .....	38
3.8. Methods of Data Analysis .....	39
3.8.1. Qualitative Data Analysis.....	39
3.8.2. Quantitative Data Analysis.....	40
3.8.3. Inferential Statistics .....	40
3.8.3.1. Statistical Model: Multiple Linear Regression Model.....	40
3.8.3.2. Model Assumptions.....	41
3.9. Diagnostic Test: Evaluation of Multiple Linear Regression Model .....	74

3.9.1. Evaluation of Multiple Linear Regression Model Assumptions .....	75
3.9.2. Model fitness and Significance of the Independent Variables as a Whole.....	78
3.10. Ethical Considerations.....	42
CHAPTER FOUR .....	43
DATA ANALYSIS, INTERPRETATIONS AND DISCUSSIONS .....	43
4.1. Introduction .....	<b>Error! Bookmark not defined.</b>
4.2. Demographic Characteristics of the Respondents .....	44
4.2.1. On Internal Auditors.....	44
4.2.2. On Middle and Top Level Managements .....	46
4.2.2.1. Middle Level Management.....	46
4.2.2.2. Top Level Management.....	48
4.3. Results, Interpretations and Discussions of Descriptive Statistics on Determinants of Internal Audit Effectiveness.....	49
4.3.1. On Independence of Internal Auditors .....	50
4.3.2. On Competence of Internal Audit Staffs .....	53
4.3.3. On Management Support.....	55
4.3.4. On Internal Audit Work Quality.....	57
4.3.5. On Perception of Managements towards the Internal Audit's Value .....	60
4.3.6. On Organizational Settings.....	62
4.3.7. On Internal Audit Effectiveness (IAE) .....	65
4.4. Results of Middle and Top Level Managements about the Effectiveness of Internal Audit.....	68
4.4.1. Middle Level Managements .....	68
4.4.2. Top Level Managements .....	71
4.5. The Regression Results and Hypothesis Testing.....	80
4.5.1. Regression Results on Determinants of Internal Audit Effectiveness .....	80
4.5.1.1. Model Summary: Capacity of the six independent variables as a whole in explaining IAE .	80
4.5.1.2. Effects and Significance of each of the six independent variables on IAE .....	82
4.5.2. Results of Hypotheses Tests .....	84
4.5.2.1. Hypothesis Test Result on Independence of Internal Auditors (INDIA) .....	85
4.5.2.2. Hypothesis Test Result on Competence of Internal Audit Staff (COMPIA).....	86
4.5.2.3. Hypothesis Test results on Management Support (MGTS).....	86
4.5.2.4. Hypothesis Test Results on Internal Audit Work Quality (IAWQ).....	87
4.5.2.5. Hypothesis Test Results on Perception of Managements (PMTIAV) .....	88
4.5.2.6. Hypothesis Test Results on Organizational Settings (ORGS).....	89

4.6. Results of Interview .....	<b>Error! Bookmark not defined.</b>
CHAPTER FIVE .....	91
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....	91
5.1. Summary of Major Findings.....	91
5.1.1. Descriptive Statistics on Determinants of Internal Audit Effectiveness.....	91
5.1.1.1. On Independence of Internal Auditors.....	91
5.1.1.2. On Competence of Internal Audit Staffs .....	92
5.1.1.3. On Management Support .....	92
5.1.1.4. On Internal Audit Work Quality .....	92
5.1.1.5. On Perception of Managements towards the Internal Audit's Value .....	93
5.1.1.6. On Organizational Settings.....	93
5.1.1.7. On Internal Audit Effectiveness .....	93
5.1.2. On Regression Analysis.....	94
5.2. Conclusions .....	95
5.3. Recommendations .....	97
5.4. Suggestions for Further Study .....	98
References .....	100
Appendices .....	106
Appendix A .....	106
Appendix B.....	112
Appendix C.....	115
Appendix D .....	116
APPENDIX E.....	119
The Overall Evaluation of the Model .....	119
D1.1. Evaluation of Multiple Linear Regression Model Assumptions.....	119
D1.2. Model fitness and Significance of the independent Variables as a Whole .....	123

## LIST OF TABLES

Table 3.1: Sample Size and Its Distributions .....	36
Table 3.2: Study Variables and their Symbols, Measurements, and Codes .....	37
Table 3.3: Reliability Test Results of the Variables.....	<b>Error! Bookmark not defined.</b>
Table 3.4: Result of Tests of Normality .....	75
Table 3.5: Non – Multicollinearity test of the Independent Variables .....	77
Table 3.6: ANOVA output part I: IAE with the Six Variables .....	79
Table 4.7: Results on Respondents’ Demographic Characteristics.....	44
Table 4.8: Results on Middle Management Demographic Characteristics .....	46
Table 4.9: Results on Top Management Demographic Characteristics .....	48
Table 4.10: Results on Independence of Internal Auditors as Perceived by Respondents.....	50
Table 4.11: Results on Competence of Internal Audit Staffs as Perceived by Respondents .....	53
Table 4.12: Results on management support as Perceived by Respondents .....	55
Table 4.13: Results on Internal Audit Work Quality as Perceived by Respondents.....	57
Table 4.14: Results on Perception of Managements towards the Internal Audit’s Work Value as Perceived by Respondents.....	60
Table 4.15: Results on Organizational Settings as Perceived by Respondents.....	62
Table 4.16: Results on Internal Audit Effectiveness .....	65
Table 4.17: Responses of Middle level Management .....	68
Table 4.18: Responses of Top Level Management .....	71
Table 4.19: Model Summary of IAE on INDI, COMIAS, MGTS, IAWQ, PMTIAV, and ORGS .....	80
Table 4.20: Results of the Significance Test of each Regression Coefficient .....	82

## **LIST OF FIGURES**

Figure 2.1: Conceptual Framework of the Dependent and Independent Variables .....	29
Figure 3.2: Linearity p – p plot graph for IAE, Internal Audit Effectiveness .....	76
Figure 3.3: Scatter plot for homogeneity of variance for IAE .....	77

## **ACRONYMS AND ABBREVIATIONS**

CIA	Competency of Internal Auditors
CFIA	Competency Framework for Internal Auditing
EEE	Effective, Efficient and Economical
EIAF	Effectiveness of Internal Audit Function
IA	Internal Auditors
IAE	Internal Audit Effectiveness
IAF	Internal Audit Function
IAD	Internal Audit Department
IIA	Institute of Internal Auditors
ISPPIA	International Standards for the Professional Practice of Internal Auditing (Standards)
MoF	Ministry of Finance
MS	Management Support
OAG	Office of the Audit General
SAP	Statement on Auditing Practice
SNNPRS	South Nations and Nationalities People Regional State
SPSS	Statistical Package for Social Science

## ABSTRACT

*The increasing rate of financial irregularities, fraud, and mismanagement in Ethiopian Government Universities calls for concern. Despite all control measures put in place by the government, coordinating and regulating agencies, lack of transparency and accountability continues strongly. The objective of this study was to assess determinants of the effectiveness of internal audit in selected government universities of Ethiopia. The study employed explanatory survey research design along with both quantitative and qualitative approaches. Purposive sampling technique was used to select ten universities, 4 from the first generation; 3 from the second generation; and 3 from the third generation, from the total of 44 universities. Primary data have been used using self – administered questionnaires for 95 internal audit staffs, 45 middle level and 36 top level managements and semi – structured interview for 7 internal audit directorate directors. A total of 183 respondents were participated in the study. Secondary source of data also used by reviewing documents related to internal audit functions. Descriptive statistics and multiple linear regression model were used to analyze the quantitative data to examine the effect and relationship between IA effectiveness and six determinant factors of IA effectiveness. All the quantitative data was analyzed using a Statistical Package for Social Sciences (SPSS) version 20. The findings of the study revealed that among the four significant factors: independence of internal auditors, competency of internal auditors, internal audit work quality and organizational setting; independence of internal auditors was the most dominant determinant factor for the effectiveness of internal audit. However, 73.5% of the variations in the effectiveness of the internal audit of the universities were jointly accounted by the six variables including management support and perception of managements towards internal audit work value. Therefore, the effectiveness of internal audit in government universities is under question, unless these determinant factors are appropriately pledged. Thus, this study suggests that concerned bodies on government universities have to give attention on the development of internal auditors to be hired at the university level or should arrange ways so that the existing internal auditors in the universities to have continuous professional development.*

**Key Words:** *audit quality, competency, determinant, effectiveness of internal audit, independence, organizational setting*



# CHAPTER ONE

## INTRODUCTION

This chapter addresses the introductory part of the thesis. It includes basically background of the study, statement of the problem, objectives of the study, hypothesis of the study, significance of the study, scope of the study, limitations of the study, operational definitions of terms, and organization of the study.

### **1.1. Background of the Study**

In every country that is administered in a democratic policy needs to be accountable in its use of public money and in providing effective, efficient and economical (3e's) service delivery. To achieve those government objectives applying internal audit functions are the major mechanism for controlling and using of all scarce resources available in the organization. Ever more larger and complex systems require greater competitiveness, internal audit should become ever more professional (Cecilia, 2005).

Internal auditing (IA) is a profession and an activity related to advising organizations regarding how to better achieve their objectives through managing risk (Ali, et al., 2007) and improving their internal control systems (Millichamp, 2002). It involves the utilization of a systematic methodology for analyzing business processes or organizational challenges and recommending solutions (Asare, 2008). The focus of IA is to assist members of an organization in the effective discharge of their responsibilities.

However, the process of accountability is not complete without auditing, which presently remains one of the most neglected and misunderstood area of the financial management cycle, especially in the public sector (Maru, 2002), in particular at university level (Mihiret & Yismaw, 2007). But, the role of internal auditors in auditing has increased dramatically changed, primarily because of the increased size and complexity of many corporations. The subject of governance has become a pertinent issue for business, government, politics, and the general public. In both the private and the public sectors, there is an increasing demand for good governance in terms of accountability and transparency, and internal audit function within organizations has an important role to play in the achievement of these objectives (Taiwo, et al., 2016).

The establishing of internal audit function is important as an essential internal assurance mechanism in public financial controls and as a tool for monitoring and evaluating financial management activities in government agencies. Besides, it will assist government organizations to achieve accountability and integrity, improve the implementation of government programs and develop confidence among citizens and stakeholders as well as to lead to use public fund efficiently and cater any risk of mismanagement of public fund.

In Ethiopian context, public sector offices are part of the public body which is partly or wholly financed by government budget and concerned with providing basic government services to the whole society (Ministry of Finance and Economic Development (MoFED, 2004). Moreover, the Ministry has issued a manual that contains a code of ethics for internal auditors and procedural guidance on the conduct of audits. As a consequence of government's involvement in monetary activities, initiatives have been taken towards improving the standards of accounting, financial reporting and auditing departments in its institutions with the aim of proving internal control mechanism. According to Yalew(2015), the controlled environment is the substratum of an effective system of internal control in such areas as achieving premeditated objectives; providing unswerving economic reporting to all stakeholders; operate the government proficiently and effectively; complying with all laws and regulations, and maintain and safeguards its assets.

However, due to different factors IA become ineffective in conducting an audit function. Thus, this ineffectiveness leads them not to prevent and detect frauds. So this fraud negatively affects an economy as a whole, by causing huge financial losses, weakening social stability, threatening democratic structures, leading to a loss of trust in the economic system, or corrupting and compromising economic and social institutions (Soh and Bennie, 2011).

Internal audit effectiveness is arguably a result of the interplay among different factors: internal audit quality, management support, organizational setting, attributes of the auditee, and the competence of the audit team and the independence of internal audit (Mihret and Yismaw, 2007; George et al., 2015). An internal audit function's capability to provide useful audit findings and recommendations would help raise management's interest in its recommendations. Hence, scrutinizing these major factors that affect the effectiveness of internal audit of local governments is the critical task of different parties.

Cognizant to the above scenario, this study attempted to assess internal audit effectiveness in terms of independence of internal audit; competence of internal audit staff: knowledge and skill, proficiency, morale, transparency, accountability; management support (taking special consideration to perception of management); organizational settings and perception of managements towards the internal audit's values for the effectiveness of internal audit in the selected government universities of Ethiopia.

What initiated the researcher to conduct this study on Determinant of Internal Audit Effectiveness in Selected Government Universities of Ethiopia is that more than sixteen years work experience in government sectors as an internal auditor, especially for six years in Wolkite University. Most importantly, the researcher, by now, is serving as an internal auditor in this university. While serving, the researcher observed most of the time the ineffectiveness of the internal audit processes in most of the sectors. Hence, in light of the indicated gaps the researcher felt that there was a gap that needs to be assessed about the effectiveness of internal audit in the government universities of Ethiopia.

## **1.2. Statement of the Problem**

Recently, the recognition of internal auditing importance and essence has seen as a rapid growth in public sectors to promote good governance by providing objective assessment of whether the public resources are adequately utilized in order to achieve favorable results, also, the significance of internal audit to make sure that the accuracy and reliability of information that would be provided to upper management. Because, it makes managers conscious of their responsibility; acts as a consultant in monitoring risk; identifies weakness of internal control system; facilitates the implementation of risk management and contributes to the appropriateness of procedures and operations of the organization (Cohen and Sayag, 2010; Arena and Azzone, 2009).

Moreover, with the increased emphasis on accountability, transparency and improvement in government sector performance especially in the developing countries where the various stakeholders including civil society and the media are becoming more interested in how government budgets are allocated and expended especially at the university level, it is imperative that government universities are seen to have a sense of responsibility coupled with an efficient and effective financial control mechanism. As Asare (2008) noted that public sector auditing,

particularly internal auditing is useful in managing public expenditure, ensuring financial accountability, and strengthening governance systems of government institutions.

However, despite the IA roles in public sectors, especially at university level in Ethiopia; there have been many complaints on the management of government funds and internal audit being not as effective in detecting and preventing the misappropriation of the funds. This lack of internal auditor credibility in public sectors' governance may have greater implication for less effectiveness of internal auditors in public offices. In addition, IAF in Ethiopian public sectors is characterized by gaining less management respect; lack of organizational independence; absence of professional development; delegating internal auditors too many tasks and being ignored, i.e., conflict of interest MoFED (2012).

Despite the reforms and the existence of internal audit task, studies have shown lapses in the internal control system and several occurrences of fraud, misappropriation, and irregularities in the different sectors. Even though, internal auditors have a close relationship with organization's top management support in their day to day activities, Edward & Sampson (2016) found out that top management support was found to have no effect on internal audit effectiveness. But inspite of this Mwangi (2017) found out that it has major influence on IA effectiveness. On the other hand, contrary to the perception that audit quality in the public sector is usually compromised, the Edward and Sampson (2016) study revealed that there exists high quality of audit work due to compliance with the international standards on auditing and local audit legislations.

Adequate staffing and the competency of IA are the essential characteristics of IA quality and effectiveness for a system to its full capability. Weakness in staffing can lead to mismanagement, error and abuse, which can negate the effect of other controls (MoFED, 2004). But prior studies revealed that internal audit staffs in public sectors are organized inefficiently with low technical staff proficiency, that they did not prepare strategic plans to conduct their activities to produce effective internal audit output to their organization (Cohen and Sayag, 2010; Arena and Azzone, 2009; Mihret and Yismaw, 2007). Besides, the audit evidences were attached with their annual reports; but due to their limited access for readability, limited distribution to the senior management officers and low level of follow-up for the implementation of audit recommendations to apply effective internal audit, the overall responses by the management to the IA findings and recommendations is generally not adequate in universities which are part of the public sector. Moreover, the number of actual audit performed in a period is usually less

than the number of audits stated in the annual audit plan which was not supporting the effectiveness of the internal auditors in the organization (Mihret and Yismaw, 2007).

Most of the prior literatures related to internal audit effectiveness have focused on independence of internal audit, competence of internal auditors, and management support on public and private sectors (Alemzewd, 2019; Arefayne, 2019; Wondwosen, 2019; Sisay, 2018; Ayitenew&Lakech, 2018; Mwangi, 2017; Tadiwos, 2016; Oyewumi et al., 2016; George & Edward, 2016; Tarekegn, 2015; Shewamene, 2014, Mihret&Yismaw, 2007). In addition to these factors, some researchers include in their studies internal audit work quality (Alemzewd, 2019; Arefayne, 2019; Ayitenew&Lakech, 2018; Tadiwos, 2016; Mihret&Yismaw, 2007). Moreover, (Tarekegn, 2015; Shewamene, 2014) assessed the effectiveness of internal audit considering perception of managers towards internal audit and availability of approved internal audit charter. Among these authors, as to the researchers knowledge (Mihret&Yismaw, 2007) conducted their study at a university in Ethiopia with over 25,000 students using internal audit quality, management support, organizational setting, and auditee attributes.

Thus, in view of realization of full value of effective internal auditing, the study attempted to assess the effect of determinants of internal audit effectiveness such as independence of internal auditors, competence of internal auditors, management support, internal audit work quality, and perception of managements towards the internal audit's values on the IA effectiveness in the selected government universities of Ethiopia.

### **1.3. Objectives of the Study**

#### **1.3.1. General Objective**

The general objective of this study was to assess determinants of internal audit effectiveness in selected government universities of Ethiopia.

#### **1.3.2. Specific Objectives**

This study attempted to achieve the following specific objectives:

1. To examine the effect of independence of internal auditors on the effectiveness of internal audit in the selected government universities of Ethiopia.
2. To investigate the effect of competence of internal audit staff on the effectiveness of internal audit in the selected government universities of Ethiopia.

3. To examine the effect of management support on the effectiveness of internal audit in the selected government universities of Ethiopia.
4. To assess the effect of internal audit work quality on internal audit effectiveness in the selected government universities of Ethiopia.
5. To assess the perception of managements towards the internal audit's values for the effectiveness of internal audit in the selected government universities of Ethiopia.
6. To investigate the organizational settings for the effectiveness of internal audit in the selected government universities of Ethiopia.

#### **1.4. Research Hypotheses**

On the basis of the above objectives and empirical review (Alemzewd, 2019; Arefayne, 2019; Wondwosen, 2019; Sisay, 2018; Ayitenew&Lakech, 2018; Mwangi, 2017; Tadiwos, 2016; Oyewumi et al., 2016; George and Edward, 2016; Tarekegn, 2015; Shewamene, 2014), this study addressed the following null hypotheses of the form “no difference” and tested using the 5% level of precision, customary level used when working on significance relation and difference (Ajay & Micah, 2014; Plotts, 2011).

$H_{0_1}$ : Independence of internal auditors has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

$H_{0_2}$ : Competence of internal audit staffs has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

$H_{0_3}$ : Support from management has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

$H_{0_4}$ : Internal audit work quality has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

$H_{0_5}$ : Perception of managements towards the internal audit's values has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

$H_{0_6}$ : Organizational setting has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

## **1.5. Significance of the Study**

This study and its findings have the following significances: it can help government universities in Ethiopia and in other countries with the same settings to evaluate and identify the gaps in the effectiveness of their IA. On the other hand, due to the lack of literatures and limited previous researches on IA effectiveness have focused on other public sectors, private companies and commercial banks, this study will provide empirical evidence that may contribute additional insight to the literatures and enhances the understanding of the IA profession in Ethiopia where there has been relatively little research was conducted regarding IA effectiveness in government universities. Moreover, the study may serve as a spring board for those who are interested to conduct further study on related topics. Finally, the study may contribute to the sum total of the body of knowledge.

## **1.6. Scope of the Study**

The study has geographical, content, and methodological scopes. Geographically, even though, there are 49 government universities in Ethiopia, the study focused on ten universities, because it was unmanageable and difficult to conduct the study in-depth in the entire universities. Moreover, the study considered the organizational structures of the existing universities, especially, their overall internal audit structure. With regards to content, the study was limited only on assessing the determinants of internal audit effectiveness such as independency of internal auditors; competence of internal audit staff; management support; organizational settings; internal audit quality; and perception of managers towards the internal audit's values. Furthermore, with regards to methodological scope, the study employed mixed method approaches, quantitative and qualitative.

## **1.7. Limitations of the Study**

It is unquestionable that any research cannot be free from limitations. The following were the major limitations encountered by the researcher while conducting the study. Even though, the objective of the study was described by the researcher, some of the participants were reluctant to respond and they were in doubt that the study was conducted to figure out factors affecting the effectiveness of internal audit and some of them fear repercussion. But the researcher was patiently collected the relevant data through harmonious communication with the internal auditors and managements.

In addition, the study was limited to only on government universities, but it can be extended to private universities and also to comparative study on the effectiveness of internal audit in government and private universities. Moreover, even though the study included ten universities, since there are forty nine government universities the sample would be more representative if the study would be conducted employing more universities.

On the other hand, the study considered only six factor variables that were taken as major factors in influencing the effectiveness of internal audit, however, the study would be more inclusive if it added additional variables, for instance, other determinant factors such as availability of internal audit charter, internal audit committee, and availability of information technology.

In general, even though, the researcher has faced the above limitations, these limitations did not have significant impediment on the outcome of the study.

## **1.8. Operational Definition of Key Terms**

**Audit:** refers to an official scrutiny of a person's or establishment's accounts, typically by an independent body (Cohen et al., 2002).

**Competence:** refers to adequacy of knowledge and skills that permit someone to act in a wide diversity of situations (Zain et al., 2006).

**Effectiveness:** refers to the grade to which objectives are achieved and the degree to which targeted hitches are solved (Mihret and Yismaw, 2007).

**Independence:** refers to the state or quality of being in autonomous; freedom from the influence, control, or determination of another or others (Zelege, 2007).

**Internal Audit:** refers to an autonomous, unbiased assurance and consulting activity intended to add value and improve an organization's processes through effectiveness of risk management, regulator and governance processes (Tamene et al., 2014)

## **1.9. Organization of the Study**

This study is organized into five chapters. Chapter one deals with the background of the study. Chapter two presents concepts, definition, review of the theoretical and empirical literature, and conceptual framework of the study. Chapter three is about research design, research approach, target population, methods of data collection and instruments, sampling techniques and sample

size determination, validity and reliability of the instrument, study variables and measurement, research model, assessment of goodness of fit of the model and ethical considerations. Chapter four provides findings, interpretation and discussions of both descriptive and regression analyses corresponding to the objectives and hypotheses of the study. Finally, chapter five constitutes major findings, conclusions, recommendations, and scope for further study.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURES**

This section comprises of four parts which are the theoretical, empirical reviews, summary of literature review and summary of empirical studies and research gaps. Definitions of the main variables used were examined in the study and reviews of some theories of internal auditing and determinants of internal audit effectiveness are provided. Also, the role of internal auditing in governance, risk management and control are examined. It also reviews empirical literature on effectiveness of internal audit and its determinants and finally summary of empirical studies and research gaps are presented.

#### **2.1. Conceptual and Theoretical Reviews**

##### **2.1.1 Basic Concepts of Internal Auditing**

###### **2.1.1.1. Definition of Internal Auditing**

A comprehensive definition of auditing expressed in Arens, et al. (2012) as follows: —Auditing is the accumulation and evaluation of evidence about information to determine and report on the degree of correspondence between the information and established criteria. Auditing should be done by a competent, independent person.

According to Arens et al. (2012), Auditing can be classified based on the primary audit beneficiaries into two: External Audit and Internal Audit. The auditors who act in such type of audit are known as External Auditors and Internal Auditors respectively. According to Arens et al. (2012), external auditors are those who are not the employee of the audited company and they provide a report on the financial statements prepared through checking whether the report show a true and fair view of the financial performance of the company.

Internal audit is a cornerstone for good governance in the public sector (Goodson et al., 2012). Given that the Ethiopia government is the largest and principal employer and the institution that

allocates public funds, namely the budget for all budgetary organizations, it needs a functional mechanism of responsibility to give special attention to the management of public finances in accordance with the applicable law. Internal audit is a very important element in public sector governance, as it supports the role of government oversight, insight and foresight (Goodson et al., 2012). According to this source, internal audit is the key to good governance of public finances.

#### **2.1.1.2. The Role of Internal Auditing**

Asare (2009) asserted that the role of internal audit can be identified as involving three main elements, namely the evaluation and improvement of risk management, control and governance process. The three elements are further discussed below as reinforcements of the fundamentals of an internal audit function in the public sector. Risk management, control and governance encompass the policy and procedures established to ensure the achievement of objectives and include the appropriate assess of risk, the reliability of internal and external reporting and accountability process, compliance with applicable laws and regulations and compliance with the behavioral and ethical standards set for public organizations and employees. Internal auditors can provide independent evaluation of risk management systems and internal control systems, thereby providing assurance. This can be complimented with assistance to management within this area, thus providing consultancy (Sarens and Beldee, 2006).It is mandatory to enhance the quality of IA activities and processes (Ramachandran et al., 2012).

#### **Risk management**

According to the Australian Department of Finance and Deregulation, risk management is an important responsibility for any public sector entity for effective and efficient use of resources. It defines risk management as follows;

Risk is the possibility of an event or activity impacting adversely on an organization, preventing it from achieving organizational outcomes. Risk management comprises the activities and actions taken to ensure that an organization is conscious of the risks it faces, makes informed decisions in managing these risks, and identifies and harnesses potential opportunities. Managing risk well requires careful consideration of the key concepts of minimizing loss, maximizing opportunities and preparing for uncertainties (Sarens and Beelde, 2006).

The demand for proper risk management strategies in the public sector emanates from the complexity and dynamism of the operating environment, ever increasing needs of society coupled with general unpredictability pattern and dwindling of resources for national development. The internal auditors role in risk management involves assessing and monitoring the risk that organization faces, recommending the controls required to mitigate those risks and evaluating the trade-offs necessary for the organization to accomplish its strategic and operational objectives. Griffiths (2006) asserted that internal auditing provides independent and objective assurance to an organization's management that its risks are being mitigated to an acceptable level, and reports where they are not.

Asare (2009) argued that, Moving towards risk-based internal audit will require a foresight function of monitoring and advising on the improvement of program efficiency and effectiveness and mitigating risks that hinder the achievement of organizational objectives.

## **Control**

Management control in the public sector includes all the policies and procedures put in place by management and the management of public sector entities aimed at promoting accountability of resources. Another term for management control is internal control. In the public sector, controls are mainly in-built in the public financial management system. Internal audit has the key function of reporting to the senior management in the public sector entities on the functioning of the management control systems and recommending improvements where applicable.

According to Baltaci & Yilmaz (2006), the effort to reform a fiscal system should include internal control and audit due to crucial role they play in enhancing accountability and effectiveness. Internal auditing provides both government and related parties with powerful tool for understanding the extent to which the public institution in question has delivered on budget and effective services. Internal auditing activity has become an essential internal assurance mechanism in public financial controls and tool for monitoring and evaluating managerial activities prior to external evaluation by external auditors. Internal Auditors in the public sector work with management to improve internal controls and to ensure compliance with applicable laws.

Internal audit activities further enhance transparency, fairness, reduce corruption and ensure value for money in public procurement which constitutes a huge portion of government

expenditure and is an area that is often vulnerable to conflicts of interest and corruption of public officials (Asare, 2009).

## **Governance**

Public sector governance relates to the means by which goals are established and accomplished. It also includes activities that ensure government creditability, establish equitable provision of services, and assure appropriate behavior of government officials whilst reducing the risk of public corruption (IIA, 2006).

According to Australian National Audit Office (ANAO) (2003), public sector governance has a very broad coverage, including how an organization is managed, its corporate and other structures, its culture, its policies and strategies and the way it deals with its various stakeholders. The concept encompasses the manner in which public sector organizations acquit their responsibility of stewardship by being open, accountable and prudent in decision-making, in providing policy advice, and in managing and delivering programs.

The broader nature of public sector governance necessitates an effective internal auditing function in order to meet the demanding responsibilities imposed by stakeholders. Internal audit can help to improve governance processes by focusing on how values are established to ensure effective and efficient control and management of public sector entities. The complexity of the public sector operating environment requires that the internal audit structural design, approach, practice and scope are reformed to ensure open, accountable and product decision-making with all public sector organizations (Asare, 2009).

According to IIA (2006), internal audit role in governance are broadly identified to be twofold. Firstly, internal auditing provides independent, objective assessment on the appropriateness of the organizations governance structure and the operating effectiveness of specific governance activities. Secondly, they act as catalysts for change, advising or advocating improvements to enhance the organizations governance structure and practices.

### **2.1.2. Theories of Internal Auditing**

In this study, the researcher focuses on two theories as bedrocks for his investigation. These are the profession theory and the institutional theory.

## **A. Professional Theory**

Professions can be interpreted in ambivalent ways, from the rise of professions as knowledge triumphant to a malfeasance of a monopoly of knowledge (Abbott, 1988). With the growing rate of information and knowledge, professions occupy a key position in society. In this sense, the internal auditing profession is serving as a key to ensuring that organizations remain sound; emphasizing on objectivity, confidentiality and competency. Winters (2009) also argue that, individual internal auditors can only achieve their full potential if the profession as such is strengthened. Important steps to advocate the profession include: Complying with standards, communicating to senior management and the audit committee about internal auditing role and value in providing assurance, developing supportive mentoring with colleagues and clients.

## **B. Institutional Theory**

Institutional theory explains about institutional pressures effect on organizational structures and practices (Abbu-Azza, 2012). Institutional pressures can include external or internal sources (Mihret et al., 2010). According to DiMaggio and Powell (1983) there are three institutional pressures coercive, normative, and mimetic. Similarly, Arena and Azzone (2009) identified the institutional pressures that impact both individuals in part and organization as a whole as laws and regulations (coercive isomorphism); choices of other organizations (mimetic isomorphism); and consultation or professional bodies (normative isomorphism). Isomorphic processes can increase the efficiency of IA activities of an organization. Because being similar to other organizations in their industry rewarded organizations (DiMaggio and Powell, 1983). This similarity can make easier to transact with other organizations to attract carrier- minded staff, to be acknowledged as legitimate and reputable, and to fit into administrative eligibility (Abbu-Azza, 2012). Coercive isomorphism is a pressure which applied to establish (Al –Twaijry et al., 2003).

Institutional theorists consider organizations as members of an organizational field, which comprises several organizations or industries that are interrelated in some way. This interrelation leads organizations to influence others (Mihret, et al., 2010). Arena and Azzone (2007) indicate that institutional theory provides a means of understanding the conforming and legitimating

processes which affect the development of IA. Institutions are social structures that have attained a high degree of resilience (Changwony and Rotich, 2015).

Several studies in internal audit have adopted an institutional theory (Abbu-Azza, 2012; Al - Twaijry et al., 2003; Arena and Azzone, 2007; Changwony and Rotich, 2015; Mihret et al. 2010). Institutional theory is relevant for this study according to the following reasons. Firstly, institutional theory includes IA practices which are part of organizational structures and it helps to discuss such organizational phenomena without a limited set of organizational goals (Abbu-Azza, 2012). Secondly, institutional theory supports countries where the equity market is underdeveloped like Ethiopia (Mihret et al. 2010). Therefore, this study draws on isomorphic processes of normative and coercive as suggested by institutional theory to investigate the factors determining IA effectiveness.

### **2.1.3. Internal Audit Effectiveness**

Different authors were defined the term “effectiveness” as follows; for instance, Arena and Azzone (2009) defined effectiveness as “the capacity to obtain results that are consistent with targets”. Ditternhofer (2001) “Effectiveness is the achievement of internal auditing goals and objectives using the factor measures provided for determining such factors”. In Mihret and Yismaw(2007), internal audit effectiveness is defined as “the extent to which an internal audit office meets its supposed objective or the extent to which it meets the intended outcome”.

All the three authors’ defined effectiveness in terms of achieving the IA goals and objectives, though interpreted in different ways, Mihret and Yismaw (2007) described the characteristics of effective internal audit unit from the internal audit point of view. Effective Internal Audit (IA):

- Undertakes an independent evaluation of financial and operating systems and procedures;
- Contributes to the achievement of organizational goals;
- Needs management’s commitment to implement recommendations;
- Provides useful recommendations for improvements as necessary;
- Affected negatively by lack of attention from management which in turn adversely affects the auditee attributes; and
- Management support is a natural pro quo for effective audit.

While; Sarens and Beelde (2006) pointed out the contribution and roles of internal audit in organizations or corporate governance from the senior management's expectation point of view. Senior management expects internal audit:

- To compensate for management's loss of control resulting from increased organizational complexity,
- To be the safeguard of corporate culture through personal contacts with people in the field,
- To be a supportive functions in the monitoring and improvement of the risk management and internal control system,
- To be laid a training ground for future managers, and
- To collaborate actively with the external auditors to increase total audit coverage.

This indicates that internal audit and management is the interdependent unit that should be collaborated to achieve organizational goals. While doing their activities, there is some value that internal audit unit seeks from management (such as management support, commitment, expectation, etc.) and that the management wants from the internal audit like adding value in decision making by providing sufficient information and reducing information asymmetry, monitoring and improvement of the risk management and internal control system (Sarens and Beelde, 2006).

#### **2.1.4. Determinants of Internal Audit Effectiveness**

##### **2.1.4.1. Independence of Internal Auditors**

Independence has no single meaning and interpretation across the people; hence the concept is subject to ambiguity and uncertainty (Wines, 2012). However, for the purpose of the case study independent refers to the concept of being free from any management influence while internal auditors perform audit activities and issue audit report (Ahmad and Taylor, 2009; Belay, 2007; MoFED, 2004). Independence is fundamental to the reliability of auditor's reports. Those reports would not be credible, and would have little confidence in them, if auditors were not independent both in fact and appearance. The assurance services provided by auditors derive their value and credibility from the fundamental assumptions of independence of mind and independence in appearance (Wines, 2012; Stewart and Subramanian, 2010).

Independence in fact exists when auditors are actually able to act with objectivity, integrity, impartiality and free from any conflict of interest. While the concept of independence in appearance is the auditor should be perceived by others (the public or other third party) to be independent. In this case, conflict of interest will also exist when a reasonable person, with full knowledge of all relevant facts and circumstances, would conclude that the auditor, or a professional member of the audit team, is not capable of exercising objective and impartial judgment in relation to the conduct of the audit of the audited body.

Auditors should be sufficiently independent from those they are required to audit in order to conduct their work without interference. Coupled with objectivity, organizational independence contributes to the accuracy of the auditor's work and gives employers confidence that they can rely on the results and the reports (Cohen and Sayag, 2010). However, Hellman (2011) suggested that CFOs seek to influence audit planning, particularly with regard to internal controls and the selection and scope of entities subject to audit; and this in return impairs the independence of internal auditors.

#### **2.1.4.2. Competence of Internal Audit Staffs**

Adequate staffing is essential for a system to its full capability. Weakness in staffing can lead to mismanagement, error and abuse, which can negate the effect of other controls (MoFED, 2004). The size of IA staff and the competency of internal audit are the critical characteristics of IA quality that can't be separated. This means at the absence of one dimension the other cannot contribute to the quality of internal auditors.

The empirical findings by Al-Twajjry et al. (2004), suggests that the external auditors believes that IAF size is an important indicator of its quality. In addition, large size of IA staff has many benefits for internal operations of IA unit. For instant, larger sized functional units, there will be more opportunity and flexibility to have a staff rotation schedule that can also influence IA effectiveness by promoting a more healthy relationship and resulting in more objective audit investigations. Furthermore, Zain et al. (2006) argue that a larger size internal audit is likely to be better resourced, including having a broader work scope, higher organizational status and wider staff talent than a smaller unit. Likewise, the quality of IA work is likely to be higher in internal audit units with a larger proportion of staff with audit experience than those with a lower proportion of audit experience.

Appropriate staffing of an internal audit department and good management of that staff are keys to the effective operation of an internal audit. An audit requires a professional staff that collectively has the necessary education, training, experience and professional qualifications to conduct the full range of audits required by its mandate (Al-Twaijry et al, 2004). Auditors must comply with minimum continuing education requirements and professional standards published by their relevant professional organizations (IIA, 2001).

#### **2.1.4.3. Management Support**

Internal auditors have a close relationship with organization's management in their day to day activities. They need good support and perception from their management to be more effective and to achieve the audit objectives. Management support is expressed in terms of supporting the auditing process by fulfilling the necessary resources, finance, transport if required, providing training, introducing auditors with new technology and procedures, budgeting funds for certification and other facilities that facilitate the internal auditing works.

Management support has a far-reaching consequence on IA effectiveness in organizations. For example, Mihret and Yismaw (2007) in their case study of IA effectiveness on public sector shows that the component of management support consists of the response to audit finding and the commitment to strength internal audit which has significance influence on IA effectiveness.

The management support is almost crucial to the operation and internal audit; because all other determinants of IA effectiveness derive from the support of top management, given that hiring proficient IA staff, developing career channels for IA staff, and providing organizational independence for IA work are the results of decisions made by top management (Cohen and Sayag, 2010). This means it is the interest of management to maintain a strong internal audit department (Mihret and Yismaw, 2007).

As the study conducted by Oyewumi et al.(2016) conceptually found a relationship between management support and task performance and affect task performance and the study suggests that adequate management support of internal auditors will enhance the task performance of internal audit department, hence, curbing the incidence of financial malpractices. The study, therefore, calls for empirical examination to verify this conceptual revelation and claim, and test the hypotheses.

Therefore, audit finding and recommendations would not serve much purpose unless management is committed to implement them. Furthermore, Belay (2007) found that to curb corruption and inefficiency in the public sector of Ethiopia, it is mandatory to have effective internal audit function (IAF) that in turn needs appropriate governance structure, mobilizing sufficient and appropriate resource and competent personnel.

#### **2.1.4.4. Internal Audit Work Quality**

The internal audit departments should prepare an audit plan that identifies IAs objectives and strategies, and the audit work they intend undertaking. Prior empirical research on IA effectiveness (Al -Twaijry et al. 2003; Mihret et al. 2010) suggests quality of internal audit planning is an indicator of IA effectiveness. Mihret et al. (2010) state that work performance is further operationalized into quality of internal audit planning and execution, and quality of internal audit reporting and follow-up.

Planning is generally considered a vital audit activity and it includes preparing a strategic plan, annual plans and programs for individual audit assignments (Mihret and Yismaw, 2007). According to ISPPA, the IA director must establish risk-based plans consistent with the organizations goals to determine the priorities of the IA activity (IIA, 2011d).

Time budgets are also a necessary management tool for evaluation of internal audit departments. Santiso (2006) states that, the timeliness of reports and the credibility of the audit findings is considered an indicator of IA effectiveness. Internal audit departments use time budgets, prepared in accordance with audit programs, to plan and monitor auditing assignments. Furthermore, another important factor established by prior researches (Al -Twaijry et al. (2003); IIA (2011d); Mihret and Yismaw (2007) and Ziegenfuss (2000) is the importance of IA programs to monitor internal auditor work performance. This IA programs must be approved before implementation.

The end product of any audit work culminate in writing of an audit report, but unlike the external auditor's report, the internal audit report is not standardized short -form in its content (Kinfu and Bayou, 2009). According to Sawyer and Vinten (1996) one of the roles of IA is to identify the main weaknesses of the organization and provide recommendations to such problems. Furthermore, ISPPA 2006 of IIA stated that, the chief audit executive or audit director must prepare accurate audit reports which include significant risk exposures and control issues to

senior management administratively and the board functionally (IIA, 2016). Consequently, the audit report of internal auditor requires a lot of imagination and creativity with communicative ability in its writing. Therefore, internal audit report should basically include: detail of purpose and scope of audit; description of tools and procedures of audit; findings, suggestions and opinions; and recommendations (Kinfu and Bayou, 2009).

#### **2.1.4.5. Management's Perception towards Internal Audit Value**

Perception is the process of attaining awareness or understanding of sensory information or it is the mental image or intuitive recognition of experience when aware of the elements of the environment (Woodard III, 2002). To function effectively, internal auditors and the customers of audit services should possess a similar understanding of what makes internal auditing a value added activity. The failure to reach this understanding could result in the perception that internal audit is simply an obstacle to achieving production objectives. This can result in underutilized audit services and ignored audit recommendations (Flesher and Zanzig, 2000) which adversely influence the effectiveness of IA (Arena and Azzone, 2009).

When employees at all levels perceive that the top management assigns importance to the function of IA, they will cooperate and support these processes (Cohen and Sayag, 2010). This implies that internal audit staffs are more motivated and encouraged to perform audit activities given good management's awareness of IA values. Sarens and Beelde (2006) used a case study approach of five Belgian firms to explore the expectations and perception of both senior management and internal auditors with respect to the relationship between these two parties. They find that, when internal audit operates primarily in a management support role, there is a lack of perceived objectivity and the relationship the audit committee is weak. However, senior management's expectations significantly influence internal audit and that the perception of senior management is critical to the acceptance and appreciation, to promote value added and to the maturity of internal audit function with the organization.

#### **2.1.4.6. Organizational Setting**

Organizational setting refers to the organizational profile, internal organization and includes the status of internal audit in the organizational structure; the goodness of internal audit office's internal organization; budgetary status of the internal audit office; and the existence of sound established criteria to evaluate auditees' practices and also the organizational policies and

procedures that guide operation of auditees. The International Standards for the Professional Practice of Internal Auditing (ISPPPIA) has laid down the standards of attribute of Standard 1000. The purpose, authority, and responsibility of the internal audit activity must be formally defined in an internal audit charter. It provides the context in which internal audit operates their activities to regulate the internal audit to make it effectiveness to provide service for the management (Cohen and Sayag, 2010).

The internal audit function of an organization should be given a sufficiently high status in the organizational structure to enable better communication with senior management and to ensure independence of internal audit from the auditees. Independence is of paramount value in providing effective internal audit service to the management, for it affords an atmosphere of objective and uninhibited appraisal and reporting of findings without influence from the units being audited. Extending the scope of services by widening the range of systems and activities audited, with appropriate risk analysis, would improve audit effectiveness. Thus, organizational setting can exert influence on the level of effectiveness that internal audit could achieve (Mihret and Yismew, 2007). Medanit, (2016); Hawa (2016) found that organizational setting has an effect on the effectiveness of internal audit.

## **2.2. The Risk Assessment Process**

Risk assessment is a continuous process requiring regular review as internal and external changes influence the company's strategies and objectives. The risk assessment process includes the identification of auditable units, the identification of relevant risk variables and an assessment of their relative significance. The following are risk variables.

### **Materiality**

To determine the risk ranking criteria for materiality, the goal is to ensure that a simple and systematic method is developed for assigning the appropriate rank to the risk values. The materiality of an auditable unit reflects the associated inherent risk and may be determined by the following factors:

- Size
- Number of transactions
- Financial exposure
- Regulatory exposure

➤ Budget information

- Values that are determined as insignificant are assigned a value of one (Low Risk); average a value of three (Medium Risk); and significant a value of five (High Risk) (Wendy and Alfonso, 2009; Mohammad, 2018).

### **Assessment at Last Audit**

The significance of the issues noted at the time of the last audit is used to determine the risk ranking. This risk variable represents the results of the findings (i.e., issues) during the last audit performed on an auditable unit, while ranking the audit results, consideration should be given for the severity of issue, repetitive findings and the indication of theft or fraud.

To determine the rank, the following criteria are developed:

- Audits which had two or more “A” issues are assigned a five (High Risk);
- Four or more “B” issues are assigned a three (Medium Risk);
- And the auditable units with “C” issues or no audits are assigned a one (Low Risk) (Wendy and Alfonso, 2009; Mohammad, 2018).

### **Personnel and Management**

- This risk variable reflects the confidence in personnel and management of the auditable unit. Auditable units that are determined to have experienced management and personnel, low turnover and control awareness are valued a one (Low Risk). Consequently, the opposite situation will be valued at a five (High Risk), and varying degrees between the two will be valued accordingly (Wendy and Alfonso, 2009; Mohammad, 2018).

### **Management Discretion**

This variable may be used when the Audit Committee and/or management have requested that a certain auditable unit of high concern be reviewed or in their opinion, qualifies for a higher risk score. This may also be used by the Director of Internal Audit based on his knowledge of the auditable units (Wendy and Alfonso, 2009; Mohammad, 2018).

### **Organizational Events**

This can be defined as any event, which will significantly impact the perceived level of risk to the auditable unit. The assessment can be accomplished through discussion or other forms of communication with management and includes:

- ✓ Information Systems (e.g., new implementations or changes to current systems, etc.);
- ✓ Organizational/Operational/Technological developments;
- ✓ New legislation and regulations;
- ✓ Natural catastrophes;
- ✓ Financial and Economic conditions;
- ✓ Rapid growth

Auditable Units with no changes equals a value of one; moderate changes, a value of three, and significant changes, a value of five In general, risk based auditing involves the following stages(Wendy and Alfonso, 2009; Mohammad, 2018).

1. **Policy formulation:** organizations are required to bring out clear-cut policy on adoption of risk based approach towards internal audit. Such a policy, approved by the Board of Directors, should contain the methodology for risk and functions which should be subjected to risk based assessment(Wendy and Alfonso, 2009; Mohammad, 2018).
2. **Conduct of Risk Based Audit:** Once the policy is in place, organization should draw up a roadmap for implementation of conduct of risk based audit. The roadmap should outline the arrangements for developing the risk profile and the sources thereof, classification of the branch / function into low, medium and high risk and the periodicity of audit and the quantum of transaction testing. The risk profile prepared earlier should be subject to periodical updating incorporating the findings of audit(Wendy and Alfonso, 2009; Mohammad, 2018).
3. **Audit report - preparation and follow-up:** Risk based internal audit findings are to be recorded in a specific format to enable the responsible persons to follow-up the findings in order to correct any deviations.
4. **Organizational aspects:** For implementation of the road map for risk based audit, there should be a proper organizational set up, which may consist of a Task Force of senior officers. The Task Force should identify the transitional and change management issues. The

availability of skilled auditors / inspectors has to be assessed on an ongoing basis(Wendy and Alfonso, 2009; Mohammad, 2018).

### **2.3. Review of Empirical Studies**

Many researchers have been studied on issues related to determinants of internal audit effectiveness in different ways in government sectors, public sectors, private companies, etc. In this study some of the empirical studies are presented.

On determinants of internal audit effectiveness in Ethiopia: in the case of selected budgetary public sectors:

Alemzewed (2019) employing explanatory research design along with mixed research method - quantitative and qualitative on internal audit work quality, management support, independence of internal audit, and competence of IA team, employing purposive sampling technique considering selected budgetary public sectors using questionnaire and document review found out that internal audit work quality and management supports have statistically significant positive relation with the effectiveness of internal audit, but independence of internal audit and competence of internal audit staffs have statistically insignificant relation with the effectiveness of internal audit.

Sisay(2018), in public sector offices of East Shewa Zone, Ethiopia, using a cross-sectional descriptive research design along with quantitative method and implementing purposive sampling technique to select 15 sectors out of 75 public sectors and employed self – administered questionnaire on 75 participants, the findings indicated that the four factors such as; independence, competency, management support and availability of information technology resource have influence on effectiveness of internal audit in public sectors. The study recommended that the concerned government body and stake holders should work to make effective the independence, the competence, the management support, and availability of IT resources of internal audit to help them to perform their professional duties and responsibilities.

Ayitenew (2018), in Guraghe Zone local Administrations, using descriptive and explanatory research design using primary data collected through close – ended questionnaire on 60 respondents who were selected from simple random sampling from eight woredas and employing descriptive statistics, correlation statistics and econometrics model on a total of five explanatory variables, he found out that quality of internal audit work, independency of internal audit and

proficiency of internal auditors were positively affected internal audit effectiveness. He recommended that the Office of Finance and Economic Development has to maintain the investigative and reporting independence of internal auditors. Besides, the internal audit offices have to do for the development of internal auditors through continuous education and short term training so as to enhance the level of internal audit effectiveness.

Mwangi (2017) on Determinants of Internal Audit Effectiveness in Decentralized Governments in Kenya: A Case of Selected Counties employing a descriptive survey investigation design where the target population was 94 respondents comprising of 89 internal auditors and heads of finance in the study counties and used census approach and questionnaire (both structured and semi – structured), the study established that all the variables: top management support, organizational independence, staff adequacy and competence and audit committee were serious determinant factors. Further, the study also established that the variable with major influences were the staff adequacy and competence followed by the top management support.

George & Edward (2016) on Determinants of Internal Audit Effectiveness in Decentralized Local Government Administrative Systems in Ashanti Region of Ghana employing causal survey research design and using a descriptive survey, through the use of questionnaire, revealed that majority of the internal audit staff in the region possessed the requisite professional proficiency. Contrary to the perception that audit quality in the public sector is usually compromised, the study revealed that there exists high quality of audit work due to compliance with the international standards on auditing and local audit legislations. Professional proficiency, organizational independence, and career advancement were found to have statistically significant positive relationship with internal audit effectiveness, while top management support was found to have no effect on internal audit effectiveness.

Tarekegn (2015), to investigate determinants of internal auditors' effectiveness in public sectors, purposively selected sectors and used primary data from managers and internal auditors by administering Likert-Scale type questionnaire in 30 public sectors with a total of 120 respondents. Employing Ordinary Least Square (OLS) linear regression model on the five determinants of internal audit effectiveness such as perception of managements towards internal audit value, management support, organizational independence, adequate competent internal audit staff, and internal audit charter, the findings of the study revealed that organizational independence of internal auditors was the most dominate determinant of internal auditors'

effectiveness with positive significant effect. The presence of internal audit charter in public sectors has also positive effect on internal auditors' effectiveness. Thus, recommended that the management of public sectors should work aggressively on the means of assuring organizational independence of internal auditors and the presence of internal audit charter in each sector.

Shewamene (2014) conducted a study to investigate on the determinants of internal audit effectiveness on 15 purposely selected public sector offices and used questionnaire for data collection tool. He attempted to show the direct relation effects of management perception, management support, and organizational independence of internal auditors, adequate and competent internal auditor's staff and the presence of approved internal audit charter with the internal audit effectiveness on the public sector management applying regression model. He found out that the management support, the existence of adequate and competent IA staff, and the availability of approved IA charter were contributed for the internal audit effectiveness in the public sector significantly and positively. The remaining two variable; the managements' perception for the IA value and the organizational independent of internal auditors were positively related with the IAE but their contribution for the IAE were statistically not significance. All of these five independent variables were made 55.1% of the contributions for internal audit effectiveness in the public sector offices. Finally, recommended that the public sector offices should understand that the contributions of these variables were collectively significant to identify any noncompliance activities in their office and to add values for the IAE in the public sector offices.

Mihret and Yismaw (2007), based on a case study of a large public sector higher educational institution in Ethiopia with a population of more than 25,000 students, they examined how internal audit quality, management support, organizational setting, auditee attributes, and the interplay among these factors, influence internal audit effectiveness. The findings of their study highlighted that internal audit effectiveness was strongly influenced by internal audit quality and management support, whereas organizational setting and auditee attributes did not have a strong impact on internal audit effectiveness. Finally, the study highlighted the areas requiring improvement.

On the other hand areas related to factors/ determinants affecting internal audit effectiveness: the case of private sectors of Ethiopia:

Arefayne (2019), on all Ethiopian private 16 insurance companies, to examine the factors determining the effectiveness of internal audit, and explanatory research design has been used with primary and secondary data by using mixed research method by employing quantitative and qualitative research methods. The quantitative research method used through 91 usable self-administered questionnaires. He used Ordinary Least Square (OLS) linear regression model to analysis the collected data and examined the association between IAE and four study's variables: competence of IA teams, quality of IA, management support, and independence of IA. The result of his study revealed that; competence of IA teams, quality of IA, and management support had strong but did not have significant effect on the effectiveness of internal audit regarding on value adding role, enhance department performance, and enhance organizational performance. However, independence of IA was the sole factor determining effectiveness of internal audit in Ethiopian insurance companies.

On the other hand, Wondwosen (2019), on Ethiopian private commercial banks used a cross – sectional survey design and implemented purposive sampling method on a total of 147 participants to assess factors such as independence of internal auditors, objectivity of IAs, competency of internal audit staff, organizational settings, and management support affecting internal audit effectiveness. His finding revealed that 60% of the variations in the internal audit effectiveness were jointly accounted by all of the five independent variables. Moreover, the study found out that there were significant and positive relationships between the factors (Independence and objectivity of internal auditors, Competency of internal audit staffs, Existence of audit committees) and internal audit effectiveness. However, Organizational Setting and management support have no significant effect on internal audit effectiveness.

Furthermore, on Ethiopian commercial banks, Tadiwos (2016) using explanatory research design and adopted mixed research method by employing quantitative and qualitative research methods on 147 participants found out that independence of internal audit, competence of internal audit team, and management supports were strong and statistically significant effect on the effectiveness of internal audit regarding on value adding role, enhance department performance, and enhance organizational performance. In this regard, independence of internal audit, competence of internal audit teams and management supports were the factors that determined effectiveness of internal audit in Ethiopian commercial banks. Finally, the researcher mainly recommended that attention should be given on the development of certified personnel, top

management and IA team work collaboratively in changing audit culture, and to work in using IA software's.

## **2.4. Summary of Empirical Studies and Research Gaps**

From the empirical studies reviewed above, it could be noticed that most of the researchers have studied on issues related to determinants of internal audit effectiveness in different research designs on government sectors/ public sectors and implementing different settings: Alemzewed (2019), Sisay(2018), Ayitenew (2018), Mwangi(2017), George & Edward (2016), Tarekegn (2015), Shewamene (2014), and Mihret&Yismaw (2007) – the only researchers who studied in case of university. Some of them studied on private sector: Arefayne (2019), Wondwosen (2019), Tadiwos (2016). Concerning data sources and collection techniques, most of the studies mentioned above made their studies through primary collecting data tool – questionnaire using purposive sampling technique.

As to independent variables selection, out of the eleven reviewed empirical studies, all of them were included competency of internal auditors in their studies indicating that how this variable drew the attention of the researchers and imperative for studying the effectiveness of IA in any sector. On the other hand, at least nine of them included internal audit work quality, management support, and independence of internal auditors while conducting their research. But little studies have paid their attention on organizational setting and perception of managers towards internal audit's value which was seen by only one researcher.

It can be seen that from the aforementioned empirical evidences, there have been different results on the determinants or factors influencing IA effectiveness, for instance, along with the findings of different scholars on the internal audit effectiveness little has been done on the actual factors that lead to the effectiveness of internal audit in government universities.

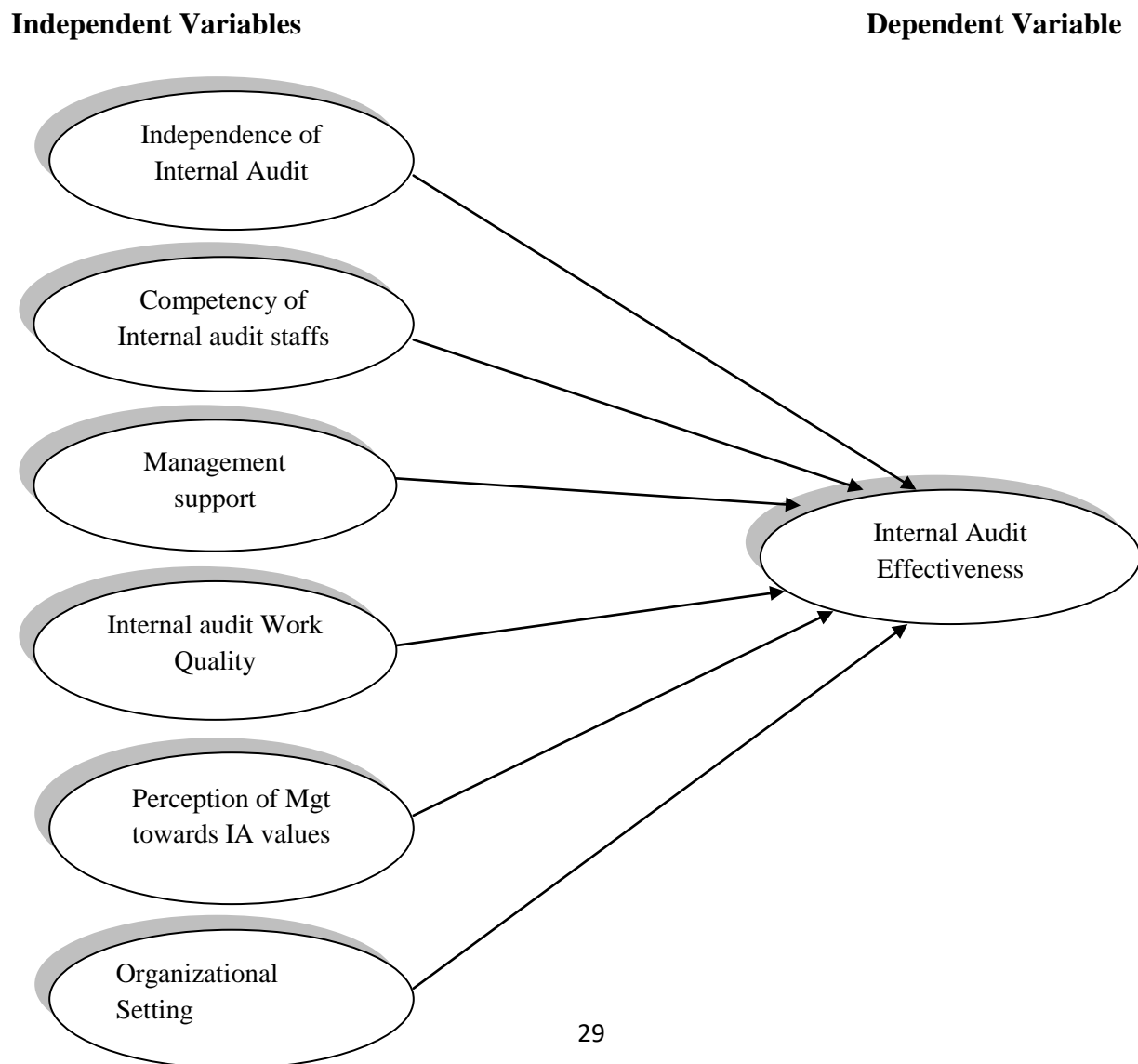
Therefore, from the above review, it can be noticed the existence of gaps in setting the appropriate research design, on the ways in using data collection methods, and most importantly in choosing suitable and insightful method of data analysis. Hence, even though the researcher was not in a position to search and cover additional local and foreign literatures, based on the above empirical studies review, this study attempted to fill the gap. Thus, in order to achieve the objectives of the study, the study employed explanatory survey research design along with mixed – approach. Descriptive statistics such as percentages, frequencies, mean, and standard deviation

were used. In addition, inferential statistics – multiple linear regression analysis also employed in order to see the extent in which determinants of internal audit effectiveness such as independence of auditors, competence of internal auditors, management support, internal audit work quality, organizational setting, and managements’ perception towards the internal audit’s value affected significantly the effectiveness of internal audit in the selected government universities of Ethiopia.

## 2.5. Conceptual Framework of the Study

Based on the overall review literatures, empirical reviews, and the prior studies: Wondwosen (2019); Arefayne (2019); Alemzewed (2019); Sisay (2018); and Ayitenew (2018), the following conceptual framework was formulated by the researcher which has seven determinant factors influencing effectiveness of internal audit.

**Figure 2.1: Conceptual Framework of the Dependent and Independent Variables**



Source: Adapted from Tadiwos (2016); Mwangi (2017); Alemzewed (2018)

## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

This section discusses the methodology that was employed in carrying out the study. The following subsections are included; research design and approach; target population; methods of data collection and instruments; sampling techniques and sample size determination; validity and reliability; variables and measurements; methods of data analysis; regression model assumptions test and ethical considerations.

#### 3.1. Research Design

Explanatory survey research design was employed in order to investigate the impact of determinant factor variables on the effectiveness of internal audits in the selected universities of Ethiopia, because, it captures the causal relationship between variables (Saunders et al., 2007). In explanatory study a situation or problem leads to the explanation of the relationship between variables, i.e., it seeks answers to why and how types of questions by identifying causal factors and outcomes of the target phenomenon (Bhattacharjee, 2012). This design is chosen because it is one of the correlational research designs that are used in social science research (Creswell, 2012). More specifically, it enables the researcher to describe what type of relationship that has been existed among different variables related to the topic under investigation. For instance, to examine the extent to which two variables co – vary, i.e, where changes in one independent variable is reflected in changes on the dependent variable. It is also convenient to gather data from a relatively large sample of respondents at one point in time. Moreover, it helps to investigate the current situation of the effectiveness of internal audit in the selected government of Ethiopian university and more importantly, it is useful to describe the effect of the independent variables on the outcome variable using the correlation statistical test including the strength and the direction of the relationship between them so as to provide more information about effect relationship. Finally, it helps to make interpretations or drawing conclusions from the statistical test results. Therefore, based on the above scenario the researcher has attempted to investigate the determinants of internal audit effectiveness in selected government universities of Ethiopia using the stated design.

Survey was conducted to obtain information from sample by means of self-report questionnaire, which was participants' response to a series of questions posed by the researcher concerning on the determinants of internal audit effectiveness, because, it provides information on large groups of people, with very little effort, and in a cost-effective manner, survey allows a researcher to assess a wider variety of behaviors and other phenomena than that can be studied in a typical naturalistic observation study (Creswell, 2006), and secure information concerning an existing phenomenon from all or selected number of respondents of the concerned population (Kothari, 2004).

### **3.2. Research Approach: Quantitative and Qualitative**

This study employed mixed method approaches, through collecting and analyzing both quantitative and qualitative data on the basis of a concurrent embodied strategy of data collection and interpretation procedures. This has been done using field survey method. Field surveys are non-experimental designs that do not involve controlling for or manipulating independent variables or treatments. Field surveys capture snapshots of practices, beliefs, or situations from a random sample of subjects in field settings through a survey questionnaire or through a structured interview. In the field surveys, independent and dependent variables were collected at the same point in time (e.g., using a single questionnaire)(Bhattacharjee , 2012).

Moreover, mixed approach, according to (Creswell, 2003) helps to minimize the risk of validity, reliability and subjective issues. Moreover, it can capitalize strength of each approach and offset their different weakness and provides a better understanding of research problem than either approach alone. It could also provide more comprehensive answer to research questions going beyond the limitation of a single approach (Creed et al., 2004).

### **3.3. Methods of Data Collection and Instruments**

#### **3.3.1. Sources of Data**

Both primary and secondary sources of data were used.

##### **i. Primary Sources**

This study employed primary source of data which were collected through questionnaires from middle level and top management body; internal auditors and interview from internal audit directorate directors in each of the selected universities found in Ethiopia.

## **ii. Secondary Sources**

In this study, as it has been used by prior internal audit researchers (Tadiwos, 2016 and Alemzewed, 2019), document review method of data collection was adapted to gather relevant information from documents held in the selected government universities in relation to internal audit. Therefore, internal audit report, external audit report, plans, programs, working papers, manuals, organizational chart, internal audit chart, and legislation rule documents have been reviewed.

### **3.3.2. Data Collection Instruments**

The tools of data collection depend on the nature, the objective, and the method of data analysis and the scope of the study. The availability of data, time, personnel and other facility also influence the selection of tools used for the study. In order to get valid data regarding the determinants of internal audit effectiveness in the selected government universities of Ethiopia questionnaires, semi – structured interview and document review served as data collection instruments.

#### **3.3.2.1. Questionnaire**

In this study, the researcher used self – administered questionnaires. Because of its advantages such as its lowest cost options, it is a rapid data collection technique, and it allows participants to think more about the questions and their reply (Cooper and Schindler, 2006). Therefore, survey questionnaire was conducted to gather information on the determinants of IA effectiveness with regard to independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards the internal audit's values, and organizational settings. Even though, there are three ways of administering self – administered questionnaire such as face to face, telephone, and mail (Marczyk et al., 2005) and since the return rate and objectivity in filling questionnaire is high in face to face method (Marczyk et al., 2005). The researcher used the later method to administer the questionnaires.

For this study, the self – administered questionnaire adapted and prepared that was developed by Tadiwos (2016) and Alemzewed (2019), because Tadiwos conducted his study on factors determining effectiveness of internal audit in Ethiopian commercial banks, whereas, Alemzewed determinants of internal audit effectiveness in Ethiopia: the case of selected budgetary public sectors. The questionnaire was designed in relation with the research hypotheses and objectives

of the study. Two types of questionnaires have been prepared one for internal audit department staffs and the other for middle and top level management staffs. These two questionnaires were organized in to two sections; the first part dealt about the respondents' general information. It includes questions related with the respondents' gender, age, educational status, working experiences, and current status. The second part dealt about the six independent variables on the determinants of internal audit effectiveness which have been mentioned in the earlier sections.

Moreover, the second part of the questionnaire for internal auditors was prepared using 1 – 5 point Likert Scales such as 1 for Strongly disagree, 2 for disagree, 3 for Neutral, 4 for agree, and 5 for Strongly agree (Alemzewed, 2019). The numbers indicate in the questions provided to feed interval/ratio scale measurement and to generate data suitable for quantitative analysis (Boone and Boone, 2012). In this regard, as adapted from Boone and Boone (2012), the mean scores values from 1 – 5 was used, with mean score of 1.00 – 1.50 indicating very low practice/implementation, 1.51 – 2.50 indicating low level implementation, 2.51 – 3.50 indicating moderate level implementation, 3.51 – 4.50 indicating high level implementation, and 4.51 – 5.00 indicating very high level practice. In addition, the standard deviation results of less than 1.0 indicated that the respondent's perceptions close to one another. But the standard deviation results of greater than 1.0 indicated that the respondent's perceptions vary each other (Shewhart and Wilks, 2004).

As to the second part of the questionnaire for middle and top level managements, both questionnaires were prepared in English Language.

### **3.3.2.2. Interview**

In this study, interviews were conducted with internal audit directorate directors of the ten selected government universities who are one of the subjects of the study on whether the internal auditors were effective or not in performing their tasks and on the overall process of the internal audit works. This tool was chosen, because interviewing is essentially in a qualitative research methodology (Creswell, 2006). It offers an opportunity to gather information upon respondents' attitudes, perceptions, opinions, and experiences systematically and simultaneously for a certain purposes. This approach helps the interviewer to have more opportunity to explore beyond the answer and so as to enter into discussion with the interviewee to get valid information for cross checking and supplementing quantitative data.

### **3.3.2.3. Document Review**

In this study documents which are related to internal audit has been reviewed. Because, document review provide numerous types of data needed in a research to elicit preliminary information about subject being investigated. Moreover, it is relevant to enhance the quality of findings through quantitative methods. Therefore, internal audit report, external audit report, plans, programs, working papers, manuals, organizational chart, internal audit chart, and legislation rule documents were reviewed.

### **3.4. Target Population**

In this study, the target population was the internal auditors of the 49 budgetary government universities in Ethiopia. Because, defining the target population is the first step in designing the sample (Creswell, 2006). But for triangulation purpose middle level managements such as internal audit directorate directors, finance head, human resource, procurement and property director, plan and program director, and facility director; top level managements such as president, academic vice president, administrative vice president, research and community service vice president, and internal revenue and good governance managements of the universities were included.

### **3.5. Sampling Technique and Sample Size Determination**

#### **3.5.1. Sampling Technique**

The study used non – probabilistic sampling technique that was purposive sampling technique, because, purposive sampling method enables a researcher to generate meaningful insights that can help to gain a deeper understanding of the research phenomena by selecting the most informative participants.

The study was conducted on purposively selected samples of ten budgetary government universities out of the 49 universities. From the total population of internal audit staff and related sub – ordinate departments it covers 20.4% at the universities level. These sampled universities were selected from the first, second and third generations of the recent four category of Ethiopian universities –first generation (the oldest universities); second generation (the youngest universities); and the third generation (recently established universities).

These sampled universities were selected based on their budget size, number of students' and the number of IAD staffs. It is believed that since the structure and regulation of the universities are more or less the same since they are under the control of MoFED, all IAD staffs of the selected universities were included.

### 3.5.2. Sample Size Determination

In this study as it has been mentioned in the previous section, the sampling technique was purposive. Accordingly, four from the first generation, three from the second generation and three from the third generation were selected. This was done in order to facilitate data collection managements. Since in each university audit staffs were few in number, the inclusion of all IAD staffs, internal audit directorate directors, and middle and top level managements of the selected universities justified the overall objectives of the study. Therefore, in this study the sample size was 95 internal auditors, 7 internal audit directorate directors; 45 middle level managements, of which 10 finance directors, 8 human resource management, 9 procurement and property directors, 9 plan and program directors, and 9 facility directors. In addition, 36 top level managements also involved, of which 5 were presidents, 6 were academic vice presidents, 8 were research and community service vice presidents, 9 were administrative vice presidents and 8 were internal revenue and good governance vice presidents. In general, in this study a total of 183 respondents were included. The sample and its distribution are summarized in Table 3.1 below.

**Table 3.1: Sample Size and Its Distributions**

N O	Participants		Universities and their Grades									Total		
			1 <sup>st</sup> Generation[4]			2 <sup>nd</sup> Generation[3]			3 <sup>rd</sup> Generation[3]					
			M	F	T	M	F	T	M	F	T	M	F	T
1.	Internal auditor		27	11	38	25	4	29	22	6	28	74	21	95
2.	Internal Audit Directorate Director		2	1	3	2	1	3	1	-	1	5	2	7
3.	M.	Finance Head	4	-	4	3	-	3	3	-	3	10	-	10
4.	L.	Human Resource	3	-	3	3	1	4	2	-	2	8	1	9
5.	M	Procurement & Prop. director	3	1	4	3	-	3	2	-	2	8	1	9
6.	g	Plan & Program director	2	1	3	2	1	3	3	-	3	7	2	9
7.	t.	Facility director	2	2	4	2	2	4	1	-	1	5	4	9
8.	T.	President	2	-	2	2	-	2	1	-	1	5	-	5
9.	L.	Academic Vice President	2	-	2	2	-	2	2	-	2	6	-	6
10.	M	Administrative Vice President	3	-	3	2	-	2	2	1	3	7	1	9
11.	t.	Research & Comm. Serv. Vice President	3	-	3	3	-	3	2	-	2	8	-	8

12		Internal Revenue & Good G.	3	-	3	2	-	2	2	1	3	7	1	8
<b>Grand Total</b>			56	16	72	51	9	60	43	8	51	150	33	183

Source: Author Construct from survey data, 2020

### 3.6. Variables and their Measurements

#### 3.6.1. Dependent Variable

The dependent variable is internal audit effectiveness which has been measured in terms of internal audit completeness in identifying non – compliance activities and value added by them to their sector. Compliance audit is a type of audit services mostly performed by internal auditors of an organization (Fadzil et al., 2005). Compliance audit ascertains whether a process or an activity is accomplished in adherence with established policies, plans, procedures, laws and regulations of an organization (MoFED, 2004; Mihiret and Woldeyohannis, 2008). Value creation or adding contribution to their sector is the other goal of internal auditors. Adding value can be described as playing a role in value creation (Cohen and Sayag, 2010).

#### 3.6.2. Independent Variables

In this study, the independent variables were determinants of internal audit effectiveness such as independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards the internal audit’s values and organizational settings. Moreover, demographic characteristics such as gender, age, field of study, level of education, years of experience as IA and as management body also taken as independent variables. All the items of the variables in the questionnaire have been measured according to their characteristics and their symbols, measurements and category/code are summarized in Table 3.2 below.

**Table 3.2: Study Variables and their Symbols, Measurements, and Codes**

No	Variable	Symbol	Measurement	Category & Code
1	Internal Audit Effectiveness	IAE	Interval: Likert scales	
2	Independent	IND	Interval, Nominal, Ordinal	
2.1	Independence of IA	INDIA	Interval: 1 – 5 pt. Likert	
2.2	Competence of IA Staffs	COMIAS	Interval: 1 – 5 pt. likert	
2.3	Management Support	MGTS	Interval: 1 – 5 pt. likert	
2.4	Internal Audit Work Quality	IAWQ	Interval: 1 – 5 pt. likert	
2.5	Perception of Management towards IA value	PMTIAV	Interval: 1 – 5 pt. likert	
2.6	Organizational Settings	ORGS	Interval: 1 – 5 pt. likert	
2.7	Gender	G	Nominal	Male =1, Female=0

2.8	Age	A	Continuous	20 – 29
				30 – 39
				40 – 49
				50 – 59
				Above 59
2.9	Field of Study	FD	Ordinal	Accounting = 1
				Management = 2
				Economics = 3
				Other = 4
2.10	Level of Education	LE	Ordinal	Diploma = 1
				BA/BSc. = 2
				MA/MSc = 3
				Other = 4
2.11	Years of experience as IA& as management	YEIA	Interval	Less than 2yrs
				From 2 to 5 yrs
				From 6 to 10yrs
				Above 10 yrs

Source: Author Construct from survey data, 2020

### 3.7. Validity and Reliability of the Instruments

#### 3.7.1. Validity

Validity is “the extent to which the measuring instrument measures the characteristics or dimensions that the researcher intends to measure” (Tavakol and Dennick, 2011). Data collection instruments, questionnaire and document review have been designed by taking in to consideration of the basic research questions and all items included in the questionnaire and document review were directly derived from review literatures and consistent with the objectives of the study. Based on the definition and different perspectives of validity, the items in the questionnaire were reviewed by the advisors. Finally, before the collection of the actual data, pilot study has been conducted for the questionnaire.

#### 3.7.2. Reliability

The reliability of an instrument, as defined by Twycross and Shields (2004), is “the consistency, stability and repeatability of results, i.e. measurements are free from random error and provide consistent data”. Therefore, the result of a researcher is considered reliable if consistent results have been obtained in identical situations but different circumstances. The researcher used this test to ensure the internal consistency of the items in the questionnaire. To measure the reliability as indicated in (Baharin et al., 2015), this study used the Cronbach alpha values. The Cronbach alpha provides a coefficient of inter-item correlations. This is a measure of the internal

consistency among the items in the tool. It is the average correlation among all the items in question, and is used for multi-item scales/questionnaire. The reliability test was conducted using the rule stated in (Baharin et al., 2015). That is, Cronbach's Alpha value that ranges from 0.9 – 1.0 taken as excellent, 0.8 - 0.89 as very good, 0.7 - 0.79 as acceptable, 0.6 - 0.69 questionable while 0.5 - 0.59 as a poor and the value less than 0.5 as unacceptable. According to (Baharin et al., 2015), the closer Cronbach's alpha is to 1.00, the higher the internal consistency reliability will be.

As it has been set in the earlier sections, the general objective of the study was to assess the determinants of internal audit effectiveness in selected government universities of Ethiopia. In order to achieve this objective, six specific objectives were designed to use questionnaire on which descriptive and inferential statistics analyses were employed. But, the validity of the inferences drawn from these statistical analyses using the items in the questionnaire depends on the consistency or dependability of the measuring instrument – each item. Therefore, the reliability of the items in the questionnaire was checked using pilot study before running the actual study and the reliability test result is given in chapter four.

### **3.8. Methods of Data Analysis**

After the collection of the data, necessary arrangements was made and organized according to their characteristics and items. The data was analyzed using the information gathered through questionnaires and document review. The data was analyzed on the basis of the research objectives and the stated hypotheses. Accordingly, descriptive statistics analysis, qualitative data analysis, and inferential statistics analysis were employed. All the collected quantitative data was analyzed using Statistical Packages for Social Science (SPSS) version 20.

#### **3.8.1. Qualitative Data Analysis**

The data gathered through interview and document review from the selected universities was summarized accordingly to support in the interpretation of the quantitative data. The content of the collected qualitative data was analyzed using inductive approach. Using this method, the researcher enabled to organize the data, break them into manageable units, and then supplement them for quantitative data analysis.

### 3.8.2. Quantitative Data Analysis

In this section the data collected through questionnaires, for internal auditors, middle and top managements, on the determinants of internal audit effectiveness were analyzed by using descriptive statistics such as frequency, mean, and standard deviation to determine to what extent do the determinants of IA effectiveness, independence of internal audit; adequate and competence of internal audit staff; management support; organizational settings; perception of managements towards the internal audit's values, and internal audit work quality affects using a 1 – 5 point likert scales. Moreover, the characteristics of the respondents in terms of gender, age, and educational level, work experience, educational background also analyzed using frequency counts and percentages.

### 3.8.3. Inferential Statistics

The study employed inferential analysis to test the correlation between the dependent and the independent variables. The study used multiple linear regression analysis to test the effect relationships. That is, to assess the extents of the effects of each independent variables on the dependent variable with a view to predict the casual relationship and importance between the study variables.

#### 3.8.3.1. Statistical Model: Multiple Linear Regression Model

In order to test the six research hypotheses ( $H_{0_1} - H_{0_6}$ ), the researcher used multiple linear regression model so as to determine the extent to which the six predictor variables have impact on the internal audit effectiveness in the universities. Multiple Linear Regression Models is a statistical tool that allows us to examine how multiple independent variables are related and have predictive effect to a dependent variable (Abdel - Salam, 2008). Moreover, regression analysis explores the necessary indicators of internal audit effectiveness using the variables identified in the model (Hair et al., 1998).

The model:

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + \beta_6x_6 + \varepsilon \quad (3.8.3.1)$$

is the Multiple Linear Regression Model with Y = Internal Audit Effectiveness (IAE) which is the dependent variable and the 6 – independent variables which were taken and intended to explore how these six explanatory variables:  $X_1$  = Independence of Internal Auditors (INDIA),

$X_2$  = Competence of Internal Audit Staffs (COMIAS),  $X_3$  = Management Support (MGTS),  $X_4$  = Internal Audit Work Quality (IAWQ),  $X_5$  = Perception of Managements towards the Internal Audit's Value (PMTIAV), and  $X_6$ = Organizational Settings (ORGS) have effects on the internal audit effectiveness.

### **Multiple Correlation Coefficients**

In multiple regressions, as in simple regression, the strength of the relationship between the independent variables and the dependent variable is measured by a correlation coefficient. This **multiple correlation coefficient** is symbolized by **R**. It can assume values between and including  $-1$  and  $+1$ . The closer the value of the correlation coefficient to  $+1$  or  $-1$ , the stronger the relationship is between the variables. A value of  $+1$  or  $-1$  indicates a perfect relationship. A positive relationship between two variables means as the independent variables increases the dependent variable also increases. A negative relationship between two variables means as the independent variables increases the dependent variable decreases. But a significant relationship between two variables doesn't necessarily mean that one variable is a direct cause of the other variable (Bluman, 1998). A multiple regression correlation, **R**, can also be computed to determine if a significant relationship exist between the independent variables and the dependent variable. On the other hand, multiple regression analysis is used when a statistician thinks there are several independent variables contributing to the variation of the dependent variable. This analysis then can be used to increase the accuracy of predictions for the dependent variable over one independent variable alone.

### **Coefficient of Multiple Determinations**

As with simple regression,  $R^2$  is the coefficient of multiple determinations and it is the amount of variation explained by the regression model.  $1 - R^2$  is the amount of unexplained variation, called the error or residual variation.  $R^2$  is a better indicator of the strength of relationship than the correlation coefficient. It is better because it identifies the percentage of variation of the dependent variable that is directly attributable by the independent variable.

#### **3.8.3.2. Model Assumptions**

##### ***Assumptions for Multiple Linear Regression Model:***

1. For any specific value of the independent variable, the values of the dependent variable are normally distributed. (This is called the *normality* assumption.)

2. The variances (or standard deviations) for the dependent variables are the same for each value of the independent variable. (This is called the *equal variance* assumption.)
3. There is a linear relationship between the dependent variable and the independent variables. (This is called the *linearity* assumption.)
4. The independent variables are not correlated. (This is called the *non-multicollinearity* assumption.)
5. The values for the dependent variables are independent. (This is called the *independence* assumption.)

As stated in (Pallant, 2005, p. 143, Abdel – Salam, 2008; Bluman, 1998, p. 503). These assumptions were tested before running the actual study interpretation.

### **3.10. Ethical Considerations**

Taking the severity of the ethical considerations in mind, this study has been done with the highest importance placed on ethics, confidentiality, and secrecy. Confidentiality and secrecy of the respondents emphasized to protect their privacy and dignity. Moreover, permission to administer questionnaires and conduct document review for research purposes obtained from the relevant authorities. Respondents were informed of privacy and confidentiality. Thus, the researcher clearly presented the purpose of the study and how confidentiality and anonymity of the participants was protected; informing them that involvement in the study was voluntary; and was free from any intended risk; and their names and the names of their places kept anonymous.

## **CHAPTER FOUR**

### **DATA ANALYSIS, INTERPRETATIONS AND DISCUSSIONS**

This chapter deals about the analysis, interpretations, and discussions of the data gathered via questionnaires, interview and document review from the selected universities. The results of the analyses obtained from internal auditors, middle and top managements and internal audit directorate directors of the selected universities. The discussion begins with demographic characteristics of the respondents followed by descriptive statistics on determinants of effectiveness of internal auditors, Pearson correlation coefficient analysis and regression analysis results on hypotheses test results are presented, interpreted and discussed. In doing so, interview and document review results also discussed to support the quantitative data analyses.

The total number of questionnaires distributed was 176, of which 95 for internal auditors in the selected universities and all were filled out and returned with 100% return rate. But 100 questionnaires were distributed for middle level and top level managements. From the distributed questionnaires, 81 were returned with 81.0% return rate. As to the interview, it was conducted with 7 internal audit directorate directors. In general, a total of 183 respondents were participated in the study. Analysis was done by making use of the data gathered through the three tools. These were questionnaires, interview and document review.

Therefore, based on the data obtained from the respondents' descriptive statistics, multiple linear regression, and document review, interview analyses are discussed and interpreted.

## 4.1. Demographic Characteristics of the Respondents

### 4.1.1. On Internal Auditors

**Table 4.3: Results on Internal Auditors' Demographic Characteristics**

No	Variables	Category	Internal Auditor	
			Frequency	Percent (%)
1	Gender	Male	74	77.9
		Female	21	22.1
		<b>Total</b>	<b>95</b>	<b>100.0</b>
2.	Age	20 – 29	25	26.3
		30 – 39	55	57.9
		40 – 49	12	12.6
		50 – 59	3	3.2
		<b>Total</b>	<b>95</b>	<b>100.0</b>
3.	Field of Study	Accounting	63	66.3
		Management	18	18.9
		Economics	14	14.7
		Other	-	-
		<b>Total</b>	<b>95</b>	<b>100.0</b>
4.	Educational level	BA/BSc	89	93.7
		MA/MSc	6	6.3
		Other	-	-
		<b>Total</b>	<b>95</b>	<b>100.0</b>
5.	Total Years of experience	< 2yrs	-	-
		2 – 5	35	36.8
		6 – 10	44	46.3
		> 10yrs	16	16.9
		<b>Total</b>	<b>95</b>	<b>100.0</b>

Source: Authors construct from survey data, 2020

Table 4.3 given above describes the demographic characteristics of the respondents. The respondents from the internal auditors 74 (77.9%) were males and 21 (22.1%) were females. From this data it is clearly observed that the number of male internal auditors dominate highly their female counterparts.

As to the age categories, the majority of the respondents of the internal auditors are fall under the age of 30 – 39 (57.9%), 20 – 29 (26.3%), and the rest falls in the age interval of 40 – 49 (12.6%) and 50 – 59 (3.2%). Therefore, from this data one can notice that majority of the respondents were in the age category of 20 – 39 (84.2%).

Concerning field of study, majority of the respondents in the internal auditors 63 (66.3%) were accounting, while 18 (18.9%) and 14 (14.7%) were management and economics respectively.

Since 32 (36.7%) of the internal auditors in the selected universities have other qualifications and from professional point of view at university level an auditor has at least first degree in accounting and finance.

In terms of the level of educational background, most internal auditors 89 (93.7%) have BA/BSc. and 6 (6.3%) have MA/MSc. These shows that majorities of the respondents were educated/or professional and can contribute more for the effectiveness of their intended work.

Finally, total years of experience, majority of the respondents of the internal auditors 44 (46.3%) have 6 – 10 years of experience, while 35 (36.8%) of internal auditors have 2 – 5 years of experience. But 16 (16.9%) have more than ten years of experience. No internal auditors having less than two years of experience. Therefore, from these data it can be noticed that majority of the respondents 79 (83.2%) have 2 – 10 years of experiences in their respective jobs and hence they were capable of responding the items in the questionnaires that dealt about determinants of internal audit effectiveness in their universities.

## 4.1.2. On Middle and Top Level Managements

### 4.1.2.1. Middle Level Management

**Table 4.4: Results on Middle Management Demographic Characteristics**

No	Variable	Category	Middle Level Management											
			Finance Head		Human Resource		Procurement & prop. director		Plan & Program director		Facility Director		Total	
			Fr.	%	Fr.	%	Fr.	%	Fr.	%	Fr.	%	Fr.	%
1	Gender	Male	10	22.2	8	17.8	8	17.8	7	15.6	5	11.1	38	84.4
		Female	-	-	-	-	1	2.2	2	4.4	4	8.9	7	15.6
		Total	10	22.2	8	17.8	9	20.0	9	20.0	9	20.0	45	100
2.	Age	20 – 29	-	-	-	-	1	2.2	-	-	-	-	1	2.2
		30 – 39	6	13.3	5	11.1	5	11.1	6	11.3	6	13.3	28	62.2
		40 – 49	4	8.9	-	-	3	6.7	3	6.7	1	2.2	11	24.4
		Above 49	-	-	3	6.7	-	-	-	-	2	4.4	5	11.1
		Total	10	22.2	8	17.8	9	20.0	9	20.0	9	20.0	45	100
3.	Field of Study	Account.	10	22.2	-	-	7	15.6	-	-	-	-	17	37.8
		Mgt.	-	-	8	17.8	-	-	-	-	3	6.7	11	24.4
		Econ.	-	-	-	-	2	4.4	7	15.6	-	-	9	20.0
		Other	-	-	-	-	-	-	2	4.4	6	13.3	8	17.8
		Total	10	22.2	8	17.8	9	20.0	9	20.0	9	20.0	45	100
4.	Educational level	BA/BSc	3	6.6	3	6.7	3	6.7	-	-	5	11.1	14	31.1
		MA/MSc	7	15.6	5	11.1	6	13.3	7	15.6	4	8.9	29	64.4
		Other	-	-	-	-	-	-	2	-	-	-	2	4.4
		Total	10	22.2	8	17.8	9	20.0	9	20.0	9	20.0	45	100
5.	Total Years of experience	< 2yrs	-	-	-	-	1	2.2	-	-	-	-	1	2.2
		2 – 5	-	-	2	4.4	3	6.7	3	6.7	1	2.2	9	20.0
		6 – 10	6	13.3	3	6.7	2	4.4	3	6.7	5	11.1	19	42.2
		> 10yrs	4	8.7	3	6.7	3	6.7	3	6.7	3	6.7	16	35.6
		Total												

Source: Authors construct from survey data, 2020

As depicted in Table 4.4 given above the demographic characteristics of the respondents of middle level management showed that majority of the participants 38 (84.4%) were males and only 7 (15.6%) were females. From this data it is clearly observed that the number of male middle level managements dominated highly their female counterparts.

As to the age categories, described in Table 4.4, majority of the respondents of the middle level managements in all of the five departments are fall under the age of 30 – 39 and accounted to 28(62.2%), followed by the age category 40 – 49 with 11(24.4%), and the rest 5 (11.1%) falls in the age interval of above 49 years of age. Therefore, from this data one can notice that majority of the respondents were in middle age stages and shows to some extent need more experiences to

cope up with different activities, in particular with the awareness and general knowledge about the overall activities of internal audit works and its effectiveness.

Concerning their field of study, all of the finance head participants 10 (22.2%) were accountant graduates; similarly all of the human resource department participants 8 (17.8%) were management graduates. In general, majority of the respondents in the middle level managements 17 (37.8%) of the selected universities were accounting, while 11 (24.4%); 9(20.0%) and 8 (17.8%) were management; economics and other qualification respectively. Since 37 (84.4%) of the middle level managements in the selected universities were qualified by accounting, management and economics and from internal audit point of view to some extent they have certain knowledge about the effectiveness of internal audit at the university level. Therefore, they could respond to the items in the data collection tool – questionnaire.

In terms of the level of educational background, most of the middle level managements 29 (64.4%) have MA/MSc., 14(31.1%) have BA/BSc., whereas, only 2 (4.4%) have other status which is above MA/MSc. These shows that since majorities of the respondents have MA/MSc they can provide relevant information about the internal audit works of their respective universities.

Finally, total years of experience, majority of the respondents of the middle level managements 19 (42.2%) have 6 – 10 years of experience, while 16 (35.6%) of the respondents have above 10 years of experience. But 9 (20.0%) have 2 – 5 years of experiences. Since majority of the respondents 35 (77.8%) have at least 6 years of experiences it can be inferred that they were capable of responding the items in the questionnaires that dealt about determinants of internal audit effectiveness in their universities.

#### 4.1.2.2. Top Level Management

**Table 4.5: Results on Top Management Demographic Characteristics**

No	Variable	Category	Top Level Management										Total	
			President		Acad.Vice		Res.&Com. Service Vice President		Administ. Vice president		Internal Rev.&Good Gov. VP		Total	
			Fr.	%	Fr.	%	Fr.	%	Fr.	%	Fr.	%	Fr.	%
1	Gender	Male	5	13.8	6	16.7	8	22.2	8	22.2	7	19.4	34	94.4
		Female	-	-	-	-	-	-	1	2.8	1	2.8	2	5.6
		Total	5	13.8	6	16.7	8	22.2	9	25.0	8	22.2	36	100
2.	Age	20 – 29	-	-	-	-	-	-	-	-	-	-	-	-
		30 – 39	-	-	2	5.5	1	2.7	-	-	3	8.3	6	16.7
		40 – 49	4	11.1	4	11.1	6	16.7	7	19.4	5	13.8	26	72.2
		Above 49	1	2.7	-	-	1	2.7	2	5.5	-	-	4	11.1
		Total	5	13.8	6	16.7	8	22.2	9	25.0	8	22.2	36	100
3.	Field of Study	Account.	-	-	-	-	-	-	1	2.8	-	-	1	2.8
		Mgt.	-	-	-	-	-	-	3	8.3	-	-	3	8.3
		Econ.	-	-	-	-	-	-	-	-	3	8.3	3	8.3
		Other	5	13.8	6	16.7	8	22.2	5	13.8	5	13.8	29	80.6
		Total	5	13.8	6	16.7	8	22.2	9	25.0	8	22.2	36	100
4.	Educational level	BA/BSc	-	-	-	-	-	-	-	-	-	-	-	-
		MA/MSc	-	-	-	-	-	-	1	2.8	-	-	1	2.8
		Other	5	13.8	6	16.7	8	22.2	8	22.2	8	22.2	35	97.2
		Total	5	13.8	6	16.7	8	22.2	9	25.0	8	22.2	36	100
5.	Total Years of experience	< 2yrs	-	-	-	-	-	-	-	-	-	-	-	-
		2 – 5	5	13.8	2	5.5	2	5.5	3	8.3	5	13.8	17	47.2
		6 – 10	-	-	4	11.1	3	8.3	3	8.3	1	2.7	11	30.6
		> 10yrs	-	-	-	-	3	8.3	3	8.3	2	5.5	8	22.2
		Total	5	13.8	6	16.7	8	22.2	9	25.0	8	22.2	36	100

Source: Authors construct from survey data, 2020

As it can be seen from Table 4.5 the demographic characteristics of the respondents of top level managements showed that majority of the participants 34 (94.4%) were males and only 2 (5.6%) were females. From this data it is clearly observed that the number of male top level managements dominated highly their female counterparts.

As to the age categories, depicted in Table 4.5, majority of the respondents of the top level managements in all of the five hierarchy are fall under the age of 40 – 49 and accounted to 26(72.2%), followed by the age category of 30 – 39 with 6(16.7%), and the rest 4 (11.1%) falls in the age interval of above 49 years of age. No age group of category 20 – 29. Therefore, from this analysis one can notice that majority of the respondents were in middle age stages and shows more experienced to cope up with different activities, in particular with the awareness and general knowledge about the overall activities of internal audit works and its effectiveness.

Concerning their field of study, majority of the respondents 29 (80.6%) field of study is other fields and only 8 (19.4%) of the respondents were qualified by accounting, management and economics. Since 29 (80.6%) of the participant top level managements in the selected universities were qualified by other subjects. Even though, from the internal audit works and its effectiveness point of view to some extent they may not have certain knowledge about the effectiveness of internal audit at the university level, since they have experiences in their different jobs and positions, they could respond to the items in the data collection tool – questionnaire.

In terms of the level of educational background, most of the top level managements 35 (97.2%) have status of above MA/MSc., only one participants (2.8%) has MA. These shows that since majorities of the respondents have beyond MA/MSc they can provide relevant information about the internal audit works of their respective universities.

Finally, total years of experience, majority of the respondents of the top level managements 17(47.2%) have 2 – 5 years of experience, while 11 (30.6%) of the respondents have 6 – 10 years of experience and 8 (22.2%) have the experience above 10 years. Since almost half of the respondents 19 (52.8%) have at least 6 years of experiences it can be inferred that they were capable of responding the items in the questionnaires that dealt about determinants of internal audit effectiveness in their universities.

## **4.2. Descriptive Statistics on Determinants of Internal Audit Effectiveness**

As indicated in the previous chapter, the objective of this study was to investigate determinants of internal audit effectiveness in the selected government universities of Ethiopia. Therefore, in this section, effectiveness of internal audit in terms of independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of

managements towards internal audit value, and organizational settings are presented, interpreted and discussed.

The interpretation of the items or statements in the closed – ended questionnaire parts are described accordingly. Based on the 1 - 5 point Likert scales, 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree, the researcher used the mean scores and weighted mean scores values to interpret the extent of the influence, proficiency, practice, and agreement accordingly for the six independent determinant factors items. As adapted from Boone and Boone(2012), the mean scores values from 1 – 5 was used, with mean score of 1.00 – 1.50 indicating very low level extent effect or practice or implementation, 1.51 – 2.49 indicating low extent effect or practice or implementation, 2.50 – 3.50 indicating moderate extent effect or practice or implementation, 3.51 – 4.50 indicating high extent effect or practice or implementation, and 4.51 – 5.00 indicating very high extent effect or practice or implementation of the stated item.

The mean indicates that to what level of agreement the response of all respondents was approached. Standard deviation measures variation of responses with respect to the mean. It shows us the extent of each response deviation from the mean.

#### 4.2.1. On Independence of Internal Auditors

**Table 4.6: Results on Independence of Internal Auditors as Perceived by Respondents**

<b>No</b>	<b>Items</b>		<b>SD</b>	<b>DA</b>	<b>UN</b>	<b>A</b>	<b>S A</b>	<b>M</b>	<b>SD</b>
1.	I am free from any intervention in performing my duties.	F.	2	79	8	6	-	2.19	.570
		P.	2.1	83.2	8.4	6.3	-		
2.	I feel free to include any audit findings in my audit work and report directly to the concerned body.	F.	1	72	17	5	-	2.27	.573
		P.	1.1	75.8	17.9	5.3	-		
3.	I can freely and unrestrictedly access to all operations, necessary documents, assets and transaction records of the university.	F.	-	61	32	2	-	2.38	.530
		P.	-	64.2	33.7	2.1	-		
4.	I objectively examine auditing issues with no management interest involved for adjustment beyond auditing standards & values.	F.	2	64	25	4	-	2.33	.591
		P.	2.1	67.4	26.3	4.2	-		
5.	I can freely decide the scope, time, and extent of auditing procedures based on auditing standards and offices policy.	F.	6	58	27	4	-	2.31	.654
		P.	6.3	61.1	28.4	4.2	-		
<b>Grand Mean</b>								<b>2.29</b>	<b>.169</b>

Source: Author construct from SPSS output, 2020

The descriptive statistics results of the items of independence of IAs are depicted in Table 4.6. In the first item the respondents were asked to rate on “I am free from any intervention in performing my duties”, accordingly majority of the participants 79 (83.2%) responded disagree, while 8 (8.4%) were indifferent and only 6(6.3%) responded with agree. The mean score of the ratings is 2.19 indicating low level extent of the effect on the effectiveness of internal audit. This result implies in most of the selected universities internal auditors were not free from intervention while performing their duties.

As to the second item of Table 4.6, the respondents were asked to respond on the “I feel free to include any audit findings in my audit work and report directly to the concerned body”, similar to the first item, majority of the respondents 72 (75.8%) replied with disagree, whereas 17(17.9%) participants were undecided to the stated item. The mean score of the overall responses is 2.27 indicating low level practices by the IAs. Therefore, this result implies that majority of the IAs in the selected universities did not include any audit findings in their audit work and report directly to the concerned body.

Concerning the third item that was designed to get responses on “I can freely and unrestrictedly access to all operations, necessary documents, assets and transaction records of the university”, from the participant IAs, accordingly, majority of the respondents 61 (64.2%) disagreed to the given statement, while 32 (33.7%) of the participants responded undecided. But in order to determine the perception of the whole respondents, the mean score value was calculated and resulted in 2.38 with less than one standard deviation value indicating that majority of the respondents responded with similar scale indicating very level practices on the stated item. Therefore, from this result one can notice that majority of the IAs in the selected universities did not have access to all operational activities, necessary documents, assets and transaction records freely and unrestrictedly.

Regarding the fourth item shown in Table 4.6, like the other items the respondents were inquired to give their perception on “I objectively examine auditing issues with no management interest involved, for adjustment beyond auditing standards and values”. According to their responses, majority of the respondents 64 (67.4%) replied with disagree, whereas 25(26.3%) respondents neither disagreed nor agreed to the stated item. The mean score of the responses is 2.33 indicating low level practice of the stated item. Therefore, this numerical value implies that

majority of internal auditors in the selected universities did not examine auditing issues without the managements interest involved for adjustment beyond auditing standards and values.

Finally, as depicted in Table 4.6, the respondents were asked to rate their perception on “I can freely decide the scope, time, and extent of auditing procedures based on auditing standards and offices policy”, accordingly majority of the respondents 58 (61.1%) responded disagree, while 27 (28.4%) responded with undecided. The mean score of their responses is 2.31 indicating low level implementation of the stated item. From this result one can notice that majority of internal auditors did not decide the scope, time, and extent of auditing procedures based on auditing standards and offices policy freely.

In general, the overall items mean score is 2.29 indicating that the stated items have low extent level of effects on the independency of internal auditors in majority of the selected universities. Therefore, from this mean score and the overall ratings, it can be inferred that independence of internal auditors was not deserved. This result is against with the George et al.(2016). Regards to the results obtained from middle level managements, majority of the respondents responded that internal auditors of the universities work things independently. In general, it is the Ethiopian internal auditors’ direction that universities’ internal auditors should have full independence to operate without undue pressures. In this way that they can bring accountability and transparency in the universities. Auditors have full operational independence, but they were not in a position to perform their tasks effectively due to the following reasons: scarcity of budgets, facilities, lack of access to audit evidence and leniency of auditee in providing relevant information. Moreover, auditors have no powers to take actions against malpractices, they just have to report audit findings to the management. They have to put forward their recommendations to rectify auditee organization. In this regard, as one of the internal audit directorate director pointed out that

*“Even though, the university top level managements have powers to execute actions against malpractices, but in practice most of the time necessary actions have not been taken by the concerned management bodies based on the internal audit findings.”*

Moreover, the responses gathered from most interviewees of the internal audit directorate directors showed that although there has been no direct intervention since the internal audit was accountable to the Ministry of Finance, there have been indirect impacts. Significant support is

not being provided to make internal audit work more effective. On the contrary, some of the interviewees stated that internal auditors work their tasks independently without any intervention by managements and concerned bodies.

#### 4.2.2. On Competence of Internal Audit Staffs

**Table 4.7: Results on Competence of Internal Audit Staffs as Perceived by Respondents**

	Items		SD	DA	UN	A	SA	M	SD
1.	Internal auditors have adequate professional knowledge on the overall activities of the IA department.	F.	-	67	26	2	-	2.32	.511
		P.	-	70.5	27.3	2.1	-		
2.	Internal auditors are proficient in planning on risk – based internal auditing.	F.	1	69	24	1	-	2.26	.488
		P.	1.1	72.6	25.3	1.1	-		
3.	Internal auditors are capable in techniques on control assessment and risk analysis.	F.	2	72	16	5	-	2.25	.583
		P.	2.1	75.8	16.8	5.3	-		
4.	Internal auditors undertake continuous professional development training per year.	F.	-	60	34	1	-	2.38	.509
		P.	-	63.2	35.5	1.1	-		
5.	Internal audit staffs possess sufficient knowledge and skill to understand the organizational structure/system of the university.	F.	1	68	22	4	-	2.31	.566
		P.	1.1	71.6	23.2	4.2	-		
<b>Grand Mean</b>								2.30	.170

Source: Author construct from SPSS output, 2020

The descriptive statistics result shown in Table 4.7 on the item “Internal auditors have adequate professional knowledge on the overall activities of the IA department” indicates majority of the respondents 67(70.5%) replied with disagree, while 26(27.4%) responded undecided to the stated item. On the other hand the mean score of their response, that decides the overall perception of the respondents, is 2.32 showing low level status of Internal auditors in having adequate professional knowledge on the overall activities of the IA. From this result one can notice that majority of the internal auditors in the selected universities did not have adequate professional knowledge on the overall activities in auditing.

Regarding the second item in Table 4.7, the respondents were asked to what extent did “Internal auditors are proficient in planning on risk – based internal auditing”, according to the results of the analysis majority of the respondents 69 (72.6%) replied with disagree, whereas 24 (25.3%) of the respondents replied with undecided to the stated item. The mean score of their response is 2.26 indicating that low level practice of the indicated item. This result implies that majority of the internal auditors in the selected universities did not have sufficient proficiency in planning on risk – based internal auditing. In this regard, as the reviewed document in most of the selected universities even though almost all of the selected universities have annual plan and other

necessary documents for internal audit works, their overall planning and implementation did not save the universities from the economic crisis, extravagant in using the resources.

As to the third item of Table 4.7, similar to the above two items responses, majority of the respondents 72 (75.8%) responded disagree to “Internal auditors are capable in techniques on control assessment and risk analysis”, while 16 (16.8%) respondents replied neither agreed nor disagreed to the stated item with the mean score of 2.25 indicating low level status of the internal auditors on the stated item. Therefore, this result shows that majority of the internal auditors did not have capabilities in techniques on control assessment and risk analysis.

Concerning the fourth item in the same table on “Internal auditors undertake continuous professional development training per year”, majority of the participants 60(63.2%) responded disagree, while 34 (35.5%) of the respondents neither disagreed nor agreed to the stated statement. The mean score of their responses is 2.38 indicating that low level implementation of the stated statement. Therefore, this result implies that in the majority of the selected universities internal auditors did not take continuous professional development training per year.

Finally, for the fifth item depicted in Table 4.7, the participants were asked to respond on “Internal audit staffs possess sufficient knowledge and skill to understand the organizational structure/system of the university”, similar to the above items majority of the respondents 68(71.6%) replied disagree, while 22 (23.2%) responded neither disagreed nor agreed to the stated item. The overall ratings mean score shown in Table 4.7 is 2.31 indicating low level status of the internal auditors for the stated item. This result implies that internal auditors in most of the selected universities have no sufficient knowledge and skill to understand the organizational system/structure. In this regard, most of the internal audit directorate directors participated in the interview responded that prior to being accountable to the Ministry of Finance, as one of the participants said that:

*“Internal auditors were assigned to a number of staff members who were incapable of performing internal audit due to a variety of factors including kinship and misconduct. These professionals are still working there, with the exception of a few who do not have sufficient knowledge in the field.*

Contrary to this, some of the interviewees pointed out that internal auditors are qualified because they have at least first degrees. As the result of their status they are competent to the effectiveness of internal audit works in the universities.

In general, as to the overall perception of the participants towards the different aspects of competence of internal auditors that can influence the effectiveness of the internal auditors working at the selected universities, Table 4.7 shows grand mean value of 2.30 which is low average and indicating that majority of the participants possessed the indicated items at low level status in the selected universities. From this result it can be inferred that internal auditors in the selected universities are not as such competent enough to understand the overall internal audit activities. This result also confirmed by the internal audit directorate directors who participated in the interview and the result revealed that internal auditors were assigned to a number of staff members who were incapable of performing internal audit due to a variety of factors including kinship and misconduct. These professionals are still working there, with the exception of a few who do not have sufficient knowledge in the field.

#### 4.2.3. On Management Support

**Table 4.8: Results on management support as Perceived by Respondents**

No	Items		SD	DA	UN	A	SA	M	SD
1.	Senior management supports internal audit to perform its duties and responsibilities.	F.	-	26	21	48	-	3.23	.767
		P.	-	27.4	22.1	50.5	-		
2.	Management takes corrective actions timely based on internal audit findings & recommendations.	F.	11	57	14	13	-	2.31	.742
		P.	11.6	60.0	14.7	13.7	-		
3.	Senior management response to internal audit reports reasonably.	F.	16	46	19	14	-	2.33	.823
		P.	16.9	48.4	20.0	14.7	-		
4.	Management supports IA by providing training in order to improve their skills and update with the field.	F.	-	34	19	38	4	3.13	.587
		P.	-	35.8	20.0	40.0	4.2		
<b>Grand Mean</b>								2.75	.275

Source: Author construct from SPSS output, 2020

As it can be seen in Table 4.8, item one deals about assessing whether “senior managements supports internal audit to perform its duties and responsibilities” or not. According to the result of the analysis, almost half of the respondents 48 (50.5%) responded agree, while 26 (27.4%) of the respondents replied disagree, but 21 (22.1%) of the respondents were undecided to the stated item. Considering the mean score of the whole ratings, 3.23, it indicates moderate level implementation of support from senior

managements. Meaning, majority of senior managements in the selected universities supported their internal audit to perform their duties and responsibilities moderately.

As it can be seen in Table 4.8, in the second item, the respondents were asked to reply to the statement “Management takes corrective actions timely based on internal audit findings and recommendations”, according to the analysis result, majority of the respondents 57 (60.0%) responded disagree and 11 (11.6%) responded with strongly disagree, while 13 (13.7%) respondents replied agree, but 14 (14.7%) respondents were indifferent relative to the other ratings. The mean score value that can determine the overall ratings of the whole respondents is 2.31 indicating low level implementation of the stated item by majority of the selected universities managements. This numerical result shows in majority of the selected universities managements did not take corrective actions timely based on internal audit findings and recommendations as expected from them.

Regarding the third item in the same table which was designed to assess whether “senior management response to internal audit reports reasonably” or not. According to the result of the analysis, nearly half of the respondents 46 (48.4%) responded disagree and 16(16.9%) of the respondents replied with strongly disagree, while 19 (20.0%) and 14 (14.7%) of the respondents replied with undecided and agreed to the stated item. The mean score of the whole ratings is 2.33 indicating low level extent implementation of the stated item by majority of the selected universities. So, this result implies majority of the senior managements in the selected universities did not response to internal audit report reasonably. In this regard, as the response gathered from almost all interviewees, although there have been some changes since the internal auditors were accountable to the Ministry of Finance, there has been no adequate support for the effectiveness of internal audit. For example, budget, various materials, vehicles, documents required for inspection purpose and etc.

Finally, in the fourth item of Table 4.8, the study was intended to get the perception of the respondents on the item “Management supports IA by providing training in order to improve their skills and update with the field.” Accordingly, the result of the survey data analysis indicated that 38 (40.0%); 34 (35.8%); 19 (20.0%) and few 4 (4.2%) of the respondents responded with agree; disagree; undecided and agree respectively to the stated item. But the mean value of these responses is 3.13 indicating that moderate implementation of the stated item in majority of the selected universities. Therefore, from this result one can noticed that in

majority of the selected universities managements do not support sufficiently the IA by providing trainings in order to improve their skills and update them.

In general, as depicted in Table 4.8, the mean score of the overall responses is 2.75, indicated that majority of the respondents confirmed that managements were supported the internal audit effectiveness at moderate level. Management support was supposed to influence the effectiveness of internal audit greatly. However, even though the support of the management bodies of most of the selected universities were at moderate level, according to the analysis result of the regression did not confirm this assumption in such a way that all of the items under this variable were not significantly affecting the effectiveness of internal audit. The result is inconsistent with the prior internal audit research works of (Shewamene, 2014; Cohen and Sayag, 2010; Mihret and Yismaw, 2007) who found and reported that top management support was the determinant factor for the effectiveness of internal audit. Therefore, the management can contribute for the effective result of the internal auditors through their support in terms of continuous training for their IA staff, fulfilling the necessary materials and facilities the IA staff needs.

#### 4.2.4. On Internal Audit Work Quality

**Table 4.9: Results on Internal Audit Work Quality as Perceived by Respondents**

No	Items		SD	DA	UN	A	SA	M	SD
1.	Internal Audit findings of your university are based on tangible evidence and reliable.	F.	7	57	20	11	-	2.37	.786
		P.	7.4	60.0	21.1	11.6	-		
2.	Internal audit findings of your university are supported by sufficient evidence.	F.	4	62	19	10	-	2.38	.580
		P.	4.2	65.3	20.0	10.5	-		
3.	Internal auditors assist the management by identifying risk exposures of the university.	F.	-	61	28	6	-	2.42	.612
		P.	-	64.2	29.5	6.3	-		
4.	Internal auditors ascertain compliance with its university's policy and procedures.	F.	8	48	29	10	-	2.43	.599
		P.	8.4	50.5	30.5	10.6	-		
5.	Internal auditors ascertain the government compliance with external contrasts, laws and regulations when applicable.	F.	6	59	29	1	-	2.26	.587
		P.	6.3	62.1	30.5	1.1	-		
6.	Internal auditors of your university check the adequacy of internal controlling system of the university.	F.	9	61	18	7	-	2.24	.544
		P.	9.5	64.2	18.9	7.4	-		
7.	Internal auditors report is balanced, constructive and supported by recommendations.	F.	-	65	25	5	-	2.37	.584
		P.	-	68.4	26.3	5.3	-		
<b>Grand Mean</b>								2.35	.168

Source: Author construct from SPSS output, 2020

The descriptive statistics result shown in Table 4.9 on the item “Internal Audit findings of your University are based on tangible evidence and reliable” indicates majority of the participants 64 (67.4%) responded disagree or strongly disagree, while 11 (11.6%) responded with agree, but 20(21.1%) were indifferent to the stated statement relative to the other ratings. The mean score of the whole ratings is 2.37 indicating that internal audit findings of the selected universities did not base on tangible evidence and was not reliable. This result implies in most of the selected universities internal audit findings do not follow the rules and regulations of internal audit.

As to the second item of Table 4.9, the respondents were asked to respond on the “Internal audit findings of your University are supported by sufficient evidence”, similar to the first item, majority of the respondents 62 (65.3%) replied with disagree, whereas 19(20.0%) of the participants responded neither agree nor disagree, but 10 (10.5%) were disagreed to the stated statement. The mean score of their response is 2.38 indicating the internal audit findings were supported by insufficient evidences. Therefore, this result implies most of the internal audit findings in the selected universities are not doing their audit activities as expected from them.

Concerning the third item that was designed to get responses on “Internal auditors assist the management by identifying risk exposures of the university”, accordingly, almost two third of the respondents 61 (64.2%) responded disagree to the given statement, while 28 (29.5%) of the respondents neither agreed nor disagreed, but only 6 (6.3%) of the participants responded agree. The mean score of the whole responses is 2.42 indicating internal auditors assisted the management by identifying risk exposures at low level status. Meaning, two third of the selected universities internal auditors did not assist their managements by identifying risk exposures of the universities.

Regarding the fourth item shown in Table 4.9, like the other items, the respondents were inquired to give their perception on “Internal auditors ascertain compliance with its university’s policy and procedures”. According to their responses, majority of the respondents 56 (58.9%) responded disagree or strongly disagree, whereas, 29 (30.5%) were neither agreed nor disagreed to the stated statement. But only 10 (10.5%) of the respondents were agreed. The mean score of the overall responses is 2.43 indicating that majority of internal auditors in the selected universities did not ascertain compliance with their universities’ policy and procedures.

As to the fifth item in the same table which was intended to assess whether “Internal auditors ascertain the government compliance with external contrasts, laws and regulations when

applicable” or not. So, according to the result of the analysis, similar to the above items, majority of the respondents 65 (68.4%) responded disagree or strongly disagree, while 29 (30.5%) of the respondents were neither agreed nor disagreed to the stated statement. When the mean score of the whole ratings are considered, it is 2.26 indicating in the majority of the selected universities internal auditors ascertained the government compliance with external contrasts, laws and regulations at low level extent when applicable. In this regard, as the result obtained from document reviews in all of the selected universities, even if all the universities followed government policies, rules and regulations concerning internal audit works, most of the selected universities did not ascertain the government compliance and they were not in a position to make the internal audit work quality effective as required.

The sixth item categorized in the internal audit quality work which is depicted in Table 4.9 was designed to assess the outlook of the respondents on “Internal auditors of your university check the adequacy of internal controlling system of the university”, according to the result of the analysis, like the above items, majority of the respondents 70(73.7%) responded disagree or strongly disagree, while 18 (18.9%) and 7 (7.4%) of the respondents replied neither agree nor disagree and agree respectively. The mean score of the responses is 2.24 indicating majority of internal auditors in the selected universities were not in a position to check the adequacy of internal controlling system of their universities.

As to the seventh item in the same table, the respondents were asked to rate “Internal auditors report is balanced, constructive and supported by recommendations”, according to the result of the analysis, majority of the respondents 65 (68.4%) responded disagree, while 25 (26.3%) of the respondents replied neither agree nor disagree, but only 5 (5.3%) of the respondents were agreed to the stated item. The mean score of the whole ratings is 2.37 indicating in most of the selected universities, internal auditors report was not balanced, constructive and supported by recommendations. In this regard, as the information gathered from interview sessions, majority of them responded that internal audit activities in their universities was not as effective as required, because it was not organized by professionals with sufficient knowledge of the profession. For instance, as one of the interviewees stressed and supplemented by the others:

*“There is a shortage of manpower; there is also very little support from the university for internal audit work; information required for investigation also is not available on time; qualified auditors are afraid to work hard and to engage*

*themselves fully in most of the audit works. As the result of this they do not boldly point out problems.”*

In general, the overall items mean score is 2.35 indicating that most of the internal audit work qualities were not in agreement with the fact that the level of internal audit work quality is sufficient and appropriate in most of the universities. Therefore, from this mean score and the overall ratings, it can be inferred that the internal audit work quality in most of the selected universities do not deserve the expected quality. This result was confirmed by the interviewees’ internal audit directorate directors and the result revealed majority of the internal auditors were not effective as required, because it was not organized by professionals with sufficient knowledge of the profession. For instance, there was a shortage of manpower; there was also very little support from the university for internal audit work; information required for investigation also was not available on time; qualified auditors are afraid to work hard and to engage themselves fully in most of the audit works. With this they do not boldly point out problems.

#### **4.2.5. On Perception of Managements towards the Internal Audit’s Value**

**Table 4.10: Results on Perception of Managements towards the Internal Audit’s Work Value as Perceived by Respondents**

No	Items		SD	DA	UN	A	SA	M	SD
1.	Managements have good perception about internal auditing roles.	F.	1	71	19	4	-	2.27	.554
		P.	1.1	74.7	20.0	4.2	-		
2.	Mgts consider internal auditing practices as a value – adding activity and I work smoothly and regularly with the management.	F.	-	57	33	5	-	2.45	.597
		P.	-	60.0	34.7	5.3	-		
3.	Mgts encourages me to implement recommendations, to promote value – added activities and to strength internal audit functions.	F.	-	66	23	6	-	2.43	.554
		P.	-	69.5	24.2	6.3	-		
4.	The position/status of internal audit is clearly recognized by the management in my department.	F.	1	56	26	10	2	2.54	.783
		P.	1.1	58.9	27.4	10.5	2.1		
5.	Your university’s see internal auditing as providing internal assurance through investigations, check & assessment, and consultants & advisers	F.	8	54	30	3	-	2.33	.632
		P.	8.4	56.8	31.6	3.2	-		
<b>Grand Mean</b>								2.40	.225

Source: Author construct from SPSS output, 2020

The descriptive statistics result shown in Table 4.10 on the item “Managements have good perception about internal auditing roles” indicates majority of the respondents 71(74.7%) replied with disagree, while 19(20.0%) responded neither agree nor disagree, but only 4(4.2%) of the respondents were agree to the stated item with respect to the other ratings. On the other hand the mean score of their response is 2.27 showing low level perceptions about internal auditing roles. From this result one can notice that majority of the managements did not have good perception about internal auditing roles.

Regarding the second item shown in Table 4.10, like the other items, the respondents were inquired to give their perception on “Managements consider internal auditing practices as a value – adding activity and I work smoothly and regularly with the management.” According to their responses, more than half of the respondents 57 (60.0%) replied with disagree, whereas, 33(34.7%) of the respondents were neither agreed nor disagreed to the stated item. The mean score of the responses is 2.45 indicating to some extent low level considerations of managements on internal audit practices as a value – adding activity. Therefore, as the result of this it could be said that IAs did not work smoothly and regularly with the managements.

Concerning the third item that was designed to get responses on “Managements encourages me to implement recommendations, to promote value – added activities and to strength internal audit functions”, from the participant, accordingly, more than two third of the respondents 66(69.5%) disagreed to the given statement, while only 23 (24.2%) of the participants responded undecided and only 6(6.3%) agreed. But the mean score of their responses is 2.43 indicating that managements encouraged internal auditors to implement recommendations, to promote value – added activities and to strength internal audit functions at low level status.

Regarding the fourth item shown in Table 4.10, like the other items, the respondents were inquired to give their perception on “The position/status of internal audit is clearly recognized by the management in my department”. According to their responses, more than half of the respondents 56(58.9%) replied with disagree, whereas, 10 (10.5%) respondents agreed, but 26 (27.4%) were indifferent to the stated item. The mean score of the responses is 2.54 indicating that in most of the selected universities the position/status of internal audit, to some extent, was clearly recognized by the management in their department.

Finally, as depicted in Table 4.10, the respondents were asked to rate their perception on “your university’s see internal auditing as providing internal assurance through investigations, check, assessment, consultants and advisers”, accordingly almost two third of the respondents 62 (65.2%) responded disagree or strongly disagree, and only 3 (3.2%) of the respondents agreed, while 30 (31.6%) of the participants responded undecided. The mean score of their responses is 2.33 indicating that in most of the selected universities internal auditing was seen as if they were not providing internal assurance through investigations, check, assessment, consultants and advisers. In this regard, majority of the interviewees, internal audit directorate directors, replied that the position of the management regarding the value of the internal audit was fluctuating (gives almost no considerable value), because as one of the interviewees pointed out and the other also replied in similar ways:

*“Lack of confidence in the internal audit work, most management bodies mostly classifies internal auditors as troublemakers. This is like blaming them for making so many mistakes, they take it as plaintiff.”*

In general, the overall items mean score is 2.40 indicating that most of the managements in the selected universities did not have positive perception towards the internal audit’s value.

#### 4.2.6. On Organizational Settings

**Table 4.11: Results on Organizational Settings as Perceived by Respondents**

No	Items		SD	DA	UN	A	SA	M	SD
1.	The purpose of internal audit is clearly defined.	F.	-	33	21	36	5	3.14	.696
		P.	-	34.7	22.1	37.9	5.3		
2.	Your university has Internal audit policy for training of internal audit staff.	F.	8	10	12	48	17	3.59	.831
		P.	8.4	10.5	12.6	50.5	17.9		
3.	There is a complete internal audit manual to guide internal audit works.	F.	-	44	16	27	8	2.99	.680
		P.	-	46.3	16.8	28.4	8.4		
4.	Internal audit department is well organized and large enough to carry out its duties successfully, for instance Human Resource.	F.	12	50	24	9	-	2.32	.816
		P.	12.6	52.6	25.3	9.5	-		
5.	Internal audit department sets and obtains sufficient budget to successfully carry out its duties.	F.	-	62	28	5	-	2.40	.591
		P.	-	65.3	29.5	5.3	-		
6.	Your university’s hiring and man power allocation of internal auditors follows government rules and regulations.	F.	12	55	21	7	-	2.31	.876
		P.	12.6	57.9	22.1	7.4	-		
<b>Grand Mean</b>								2.79	.247

Source: Author construct from SPSS output, 2020

As it can be seen in Table 4.11, the first item deals about “The purpose of internal audit is clearly defined”, accordingly 33 (34.7%) of the respondents responded with disagree; 36 (37.9%) responded agree, whereas 21 (22.1%) of the respondents were indifferent to the stated item. The mean score of their response is 3.14 indicating that the purpose of internal audit to some extent defined clearly in most of the selected universities. From this analysis one can infer that the purpose of internal audit is not clearly defined or there might be problem in setting the aim in accordance with the standards set by the government.

As to the second item depicted in Table 4.11, intended to examine the existence of internal audit policy for training of internal audit staffs or not. According to the information obtained from the respondents, two third of the respondents 65 (68.4%) responded with agree or strongly agree, while 10 (10.5%) and 8(8.4%) were disagree and strongly disagree respectively, but 12 (12.6%) of the respondents were undecided to the stated item. The mean score for this item is 3.59 indicating that most of the selected universities have internal audit policy for training of their internal audit staff. But lack of implementing their policy was their peculiar problem, because as the open – ended question result obtained from most of the respondents pointed out “*no problem of setting policy not only for the internal auditors but also for other departments. What matters is implementation.*”

Regarding the third item which is depicted in Table 4.11, it deals about the existence of a complete internal audit manual to guide internal audit works, 44 (46.3%) of the respondents responded disagree, while 35 (36.8%) were agreed or strongly agreed, but 16 (16.8%) were indifferent to the stated item. The mean score for this item is 2.99 indicating that majority of the internal auditors were aware of the existence of a complete manual. Therefore, from this result it can be inferred that no manual problem in most of the selected universities.

As to the fourth item, which was intended to assess whether “internal audit department is well organized and large enough to carry out its duties successfully, for instance in human resource” or not. So, according to the gathered information, almost two third of the respondents 62(65.2%) responded disagree or strongly disagree, while few respondents 9 (9.5%) and 24 (25.3%) responded agree and undecided to the stated item. The mean score of their response is 2.32 indicating that internal audit department was not well organized and large enough to carry out its duties successfully. In this regard, the results of the analyses on both middle and top level managements supported the above result in that in most of the selected universities hiring and

man power allocation of Internal Auditors followed government rules and regulations poorly. Moreover, the analyses of both middle and top level managements confirmed that in most of the selected universities the IA team members did not have sufficient technical and IT knowledge to perform their role effectively.

Even though, organizational setting refers to the organizational profile, internal organization and budgetary status of the internal audit office; and also the organizational policies and procedures that guide operation of audited organization. It provides the context in which internal audit operates. Thus, organizational setting can exert influence on the level of effectiveness that internal audit could achieve (Mihret and Yismaw, 2007). In this regard, as the responses that were obtained from the open – ended question in this part showed that internal audit department of most universities were not well organized particularly with respect to human resources. As most of the respondents stressed

Item five, in the same table, deals about the assessment of whether “Internal audit department sets and obtains sufficient budget to successfully carry out its duties” or not. According to the analysis result two third of the respondents 62 (65.3%) responded disagree, whereas 28 (29.5%) and 5 (5.3%) responded undecided and agree to the stated item. But the mean score of their responses is 2.40 indicating that in almost two third of the selected universities’ internal audit department did not set and obtain sufficient budget to carry out their duties successfully. In this regard due to this problem in setting and obtaining sufficient budget to carry out duties, the internal audit department did not accomplish its job and responsibilities as it has been expected. Such disparity was confirmed by the response from the open – ended question where most of the respondents pointed out internal audit department of their universities were not successful in most of their activities.

Finally, the last item was intended to assess on “Your university’s hiring and man power allocation of internal auditors follows government rules and regulations”, accordingly majority of the respondents 67 (70.5%) responded disagree or strongly disagree, while 21 (22.1%) of the respondents were indifferent to the stated item with respect to the other ratings. The mean score of their responses is 2.31 indicating that majority of the selected universities did not follow government rules and regulation when they were hiring and allocation of man power for internal auditors. This result also confirmed by most of the interviewees’ internal audit directorate directors that there is a gap in the organization and structure of internal audit, because people

who are knowledgeable but unskilled in the internal audit profession enter the profession and in terms of the work force allocated to universities by the Ministry of Finance, the number is not enough. Regarding this, most of the interviewees replied that there is a gap in the organization and structure of internal audit, because as one of the participants pointed out and supported by the others:

*“People who are knowledgeable and unskilled in the profession enter the profession for various reasons: after the internal audit is accountable to the Ministry of Finance, the previous ones remain the same; in terms of the workforce allocated to universities by the Ministry of Finance, the number is not enough.”*

In general, the mean score of the overall items of organizational setting is 2.79 indicating that the overall organizational settings of most of the universities were at moderate level.

#### 4.2.7. On Internal Audit Effectiveness (IAE)

**Table 4.12: Results on Internal Audit Effectiveness**

No	Items		SD	DA	UN	A	SA	M	SD
1.	IA perform their works in accordance with the IIA standards (ISPPIA)	F	10	37	23	25	-	2.66	.766
		P	10.5	38.9	24.3	26.3	-		
2.	IAs makes appropriate recommendations for improving the organizational process.	F	-	55	21	19	-	2.61	.816
		P	-	57.9	22.1	20.0			
3.	IA evaluates and improves the effectiveness of risk management and governance process.	F	2	63	9	21	-	2.52	.861
		P	2.1	66.3	9.5	22.1	-		
4.	IA reviews the effectiveness and efficiency of operations and programs.	F	4	54	18	19	-	2.55	.860
		P	4.2	56.8	18.9	20.0	-		
5.	IA establishes a follow – up process to ensure corrective actions to be effectively implemented.	F	5	51	30	9	-	2.46	.769
		P	5.3	53.7	31.6	9.5	-		
6.	IA evaluates the potential for the occurrence of fraud and how the organization manages fraud risk.	F	-	62	16	17	-	2.53	.797
		P	-	65.3	16.8	17.9	-		
7.	IA reviews the reliability and integrity of financial information.	F	-	63	29	3	-	2.37	.547
		P	-	66.3	30.5	3.2	-		
<b>Grand Mean</b>								2.53	.231

Source: Author construct from SPSS output, 2020

The descriptive statistics result shown in Table 4.12 on the item “IA perform their works in accordance with the IIA standards (ISPPIA)” indicates almost half of the respondents 47 (49.4%) responded disagree or strongly disagree, while 25 (26.3%) responded agree, but 23(24.3%) were indifferent to the stated statement. The mean score of the whole ratings is 2.66 indicating

moderate level implementation and implies in most of the selected universities internal auditors perform their works in accordance with the IIA standards (ISPPIA) at moderate level.

As to the second item of Table 4.12, the respondents were asked to respond on the “IAs makes appropriate recommendations for improving the organizational process.” according to the result of the analysis more than half of the respondents 55 (57.9%) replied disagree, whereas 19(20.0%) of the participants responded agree, but 21 (22.1%) were indifferent. The mean score of their response is 2.61 indicating moderate level practice of the indicated item by the IAs. Therefore, this result implies most of the internal auditors did not make appropriate recommendations in order to improve the organizational process.

Concerning the third item that was designed to get responses on “IA evaluates and improves the effectiveness of risk management and governance process.”, accordingly, almost two third of the respondents 63 (66.3%) responded disagree, while 21 (22.1%) of the respondents disagreed, but only 9 (9.5%) of the participants responded undecided. The mean score of their responses is 2.52 indicating that two third of the selected universities internal auditors evaluated and improved the effectiveness of risk management and governance process at moderate level.

Regarding the fourth item shown in Table 4.12, like the other items, the respondents were inquired to give their outlook on “IA reviews the effectiveness and efficiency of operations and programs.” According to their responses analysis, more than half of the respondents 54 (56.8%) responded disagree, whereas, 19 (20.0%) agreed and 18 (18.9%) were neither agreed nor disagreed to the stated statement. The mean score of the responses is 2.55 indicating that majority of internal auditors in the selected universities reviewed moderately the effectiveness and efficiency of operations and program as internal audit policies and procedures.

As to the fifth item in the same table which was intended to assess whether “IA establishes a follow – up process to ensure corrective actions to be effectively implemented.” or not. So, according to the result of the analysis, similar to the above item, more than half of the respondents 56 (58.9%) responded disagree, while only 9 (9.5%) of the respondents agreed and 30 (31.6%) were indifferent to the stated item. When the mean score of the whole ratings are considered, it is 2.46 indicating low level implementation of the stated item. Meaning, in the majority of the selected universities internal auditors did not establish a follow – up process to ensure corrective actions to be effectively implemented.

The sixth item which is depicted in Table 4.12 was designed to assess the outlook of the respondents on “IA evaluates the potential for the occurrence of fraud and how the organization manages fraud risk.”, according to the results of the analysis, like in the third item, almost two third of the respondents 62(65.3%) responded disagree, while 17 (17.9%) were agreed and 16 (16.8%) of the respondents replied neither agree nor disagree to the stated statement. The mean score of the responses is 2.53 indicating moderate level implementation of the stated item. Meaning, the evaluation of the occurrence of fraud and the organizational management of fraud risk by majority of internal auditors in the selected universities were at satisfactory level.

As to the seventh item in the same table, the respondents were asked to rate “IA reviews the reliability and integrity of financial information.” according to the results of the analysis, similar to the above item almost two third of the respondents 63 (66.3%) responded disagree, while 29 (30.5%) of the respondents replied neither agree nor disagree, but only 3 (3.2%) were agreed to the stated item. The mean score of the whole ratings is 2.37 indicating low level implementation of the stated statement and implying that in most of the selected universities internal auditors did not review the reliability and integrity of financial information.

In general, Table 4.12 shows the grand mean for the whole mean scores values of the seven items which is 2.53 with less than one standard deviation value indicating that majority of internal auditors implemented the different aspects of internal auditors’ activities that can influence their effectiveness at moderate level. The result implies that majority of the internal auditors were not as such established a follow – up process to ensure corrective actions to be effectively implemented; evaluated the potential for the occurrence of fraud and did not manage fraud risk effectively and did not make appropriate recommendations for improving the organizational process of the overall activities of internal auditors. In support of the quantitative analysis, in the interview sessions most of the participants replied that in the current context, internal audit is not effective. In accordance with the responses listed above, the lack of proper procedures and support for the internal audit, lack of organization of qualified professionals, small number of internal auditors, and so on were the most decisive factors in determining the effectiveness of internal auditors.

### 4.3. Results of Middle and Top Level Managements about the Effectiveness of Internal Audit

The interpretation of the items or statements in the closed – ended questionnaire parts are described accordingly. Based on the 1 – 5 point likert scales: poor, satisfactory, good, very good and excellent 1 - 5 point Likert scales, 1 = poor; 2 = satisfactory; 3 = good; 4 = very good; 5 = excellent, the researcher used the mean scores and weighted mean scores values to interpret the extent of the influence, proficiency, practice, and agreement accordingly for the six independent determinant factors items. As adopted from Sisay(2018), the mean scores values from 1 – 5 was used, with mean score of 1.00 – 1.50 indicating very low level extent effect or practice or implementation, 1.51 – 2.49 indicating low extent effect or practice or implementation, 2.50 – 3.50 indicating moderate extent effect or practice or implementation, 3.51 – 4.50 indicating high extent effect or practice or implementation, and 4.51 – 5.00 indicating very high extent effect or practice or implementation of the stated item.

The mean indicates that to what level of agreement the response of all respondents was approached. Standard deviation measures variation of responses with respect to the mean. It shows us the extent of each response deviation from the mean.

#### 4.3.1. Middle Level Managements

**Table 4.13: Responses of Middle level Management**

No	Items		P	S	G	VG	E	M	SD
1.	IA activities meet the requirements of the IIA's Code of Ethics.	F.	10	10	18	5	2	2.53	1.09
		P.	22.2	22.2	40.0	11.1	4.4		
2.	IA ensures the activity that is performed compliance with established policies, law, regulation and directives independently.	F.	5	19	13	7	1	2.46	.893
		P.	11.1	42.2	28.9	15.6	2.2		
3.	The audit reports provided by IAs of your university are reliable and significant.	F.	8	10	17	10	-	2.64	1.05
		P.	17.8	22.2	37.8	22.2	-		
4.	The IA team members have sufficient technical and IT knowledge to perform their role effectively.	F.	11	19	10	3	2	2.24	1.04
		P.	24.4	42.2	22.2	6.7	4.4		
5.	Internal auditors have the experience to address internal control and risk management problems within the university.	F.	8	18	12	6	1	2.42	1.00
		P.	17.8	40.0	26.7	13.3	2.2		
6.	The allocation of a sufficient budget to IA department to accomplish its IA plan is	F.	15	18	6	5	1	2.08	1.06
		P.	33.3	40.0	13.3	11.1	2.2		
7.	Internal auditors obtain unrestricted access to any information regarding your university is	F.	1	14	18	9	3	2.80	.949
		P.	2.2	31.1	40.0	20.0	6.7		
8.	Your university's mgt. follow-up and ensure	F.	5	13	19	6	2	2.71	1.03

	corrective actions to be taken timely based on internal audit findings.	P.	11.1	28.9	42.2	13.3	4.4		
9.	Your university's hiring and man power allocation of IAs follows government rules and regulations	F.	8	17	16	4	-	2.36	.87
		P.	17.8	37.8	35.5	8.9	-		
<b>Grand Mean</b>								<b>2.47</b>	<b>.372</b>

Source: Author construct from SPSS output, 2020

P = Poor, S = Satisfactory, G = Good, VG = Very Good, E = Excellent

As depicted in Table 4.13 above, the respondents were asked to rate their agreement on “IA activities meet the requirements of the IIA's Code of Ethics.” According to the results of the analysis nearly half of the respondents 20(44.4%) replied with either poor or satisfactory, while 7 (15.5%) responded with either very good or excellent, but 18 (40.0%) responded with good. However, when the mean score of their rating is considered it is 2.53 indicating moderate status in fulfilling the IIA’s code of ethics.

As to the second item which is indicated in Table 4.13, the respondents were asked to indicate their agreement on “IA ensures the activity that is performed compliance with established policies, law, regulation and directives independently.” accordingly majority of the participants 24 (53.3%) responded either poor or satisfactory, while 13 (28.9%) responded with good and 7 (15.6%) responded with very good. The mean score of the ratings is 2.46 indicating low level implementation of the indicated item. Since 24 (53.3%) of the participants responded poor and satisfactory this result implies in most of the selected universities internal auditors did not perform compliance with established policies, law, regulation and directives independently.

As to the third item of Table 4.13, the respondents were asked to respond on the “The audit reports provided by IAs of your university are reliable and significant.” So according to the result of the analysis 18 (40.0%) of the respondents responded poor or satisfactory, but 17 (37.8%) responded with good and 10 (22.2%) very good. The mean score of their response is 2.64 indicating to some extent moderate level of practice by the IAs. Therefore, according to the responses result it implies the audit reports provided by IAs is reliable and significant in most the selected universities.

Concerning the fourth item depicted in Table 4.13 was designed to get responses on “The IA team members have sufficient technical and IT knowledge to perform their role effectively.” from the participant middle level managements, accordingly, majority of the respondents 30 (66.6%) responded either poor or satisfactory to the given statement, while only 10 (22.2%) of

the participants responded good, whereas, only 5 (11.1%) responded with either very good or excellent. But the mean score of their responses is 2.24 indicating low level status of the IA team members in most of the selected universities. Therefore, from this result one can notice that most of the IA team members did not have sufficient technical and IT knowledge to perform their role effectively which is confirmed by most of top level management participants.

Regarding the fifth item shown in Table 4.13, like the other items the respondents were inquired to give their perception on “Internal auditors have the experience to address internal control and risk management problems within the university.” According to their responses, more than half of the respondents 26 (57.8%) replied with either poor or satisfactory, whereas, 12 (26.7%) replied with good and 6 (13.3%) of the respondents responded with “very good”. The mean score of the responses is 2.42 indicating low level practice of the stated item. Therefore, this numerical value implies internal auditors did not have the experience to address internal control and risk management problems within their university.

As to the sixth item described in Table 4.13, it was intended to ask the respondents to rate their agreement on “The allocation of a sufficient budget to IA department to accomplish its IA plan is” according to their responses, majority of the respondents 33 (73.3%) responded with either poor or satisfactory, while 6 (13.3%) responded “good” indicating that the allocation of budget was sufficient. But the mean score of the overall responses was 2.08 that show poor allocation of budget to IA department in most of the selected universities.

Regarding the seventh item which is stated in the same table, it was aimed at getting the response from the participant middle level managements on “Internal auditors obtain unrestricted access to any information regarding your university is” so according to their responses, majority of the respondents 30 (67.7%) replied with at least “good”, but 14 (31.1%) responded with satisfactory. However, the mean score of the responses was 2.80 which indicate internal auditors obtain unrestricted access to any information regarding their university.

In item eight of Table 4.13, it was intended to get the respondents outlook on “Your university’s management follow-up and ensure corrective actions to be taken timely based on internal audit findings” according to their responses, 18 (40.0%) of the respondents replied either poor or satisfactory and 19 (42.2%) responded with “good” and the rest 8 (17.7%) with either “very good” or “excellent”. But when the mean score of their responses were considered it was 2.71

indicating that managements of most of the selected universities follow – up and ensure corrective actions to be taken timely based on the internal audit findings at moderate state.

Finally, item nine as depicted in Table 4.13, the respondents were asked to rate their perception on “Your university’s hiring and man power allocation of IAs follows government rules and regulations”, accordingly more than half of the respondents 25 (55.6%) responded either by poor or satisfactory, while 16 (35.5%) responded with “good”. The mean score of their responses is 2.36 indicating low level implementation of the stated item. From this result one can notice in most of the selected universities hiring and man power allocation of IAs follows government rules and regulations poorly.

In general, from the overall items mean score 2.52, one can notice that in most of the selected universities the effectiveness of internal audit was not as such at its good condition.

### 4.3.2. Top Level Managements

**Table 4.14: Responses of Top Level Management**

No	Items		P	S	G	VG	E	M	SD
1.	IA activities meet the requirements of the IIA's Code of Ethics.	F.	7	9	14	5	1	2.55	.927
		P.	19.4	25.0	38.9	13.9	2.8		
2.	IA ensures the activity that is performed compliance with established policies, law, regulation and directives independently.	F.	2	9	14	9	2	3.00	.872
		P.	5.6	25.0	38.9	25.0	5.5		
3.	The audit reports provided by IAs of your university are reliable and significant.	F.	6	11	14	5	-	2.50	.831
		P.	16.6	30.6	38.9	13.9	-		
4.	The IA team members have sufficient technical and IT knowledge to perform their role effectively.	F.	9	14	9	4	-	2.22	.846
		P.	25.0	38.9	25.0	11.1	-		
5.	Internal auditors have the experience to address internal control and risk management problems within the university.	F.	8	10	14	4	-	2.38	.848
		P.	22.2	27.8	38.9	11.1	-		
6.	The allocation of a sufficient budget to IA department to accomplish its IA plan is	F.	1	16	13	6	-	2.66	.700
		P.	2.8	44.4	36.1	16.7	-		
7.	Internal auditors obtain unrestricted access to any information regarding your university is	F.	1	8	16	10	1	3.05	.754
		P.	2.8	22.2	44.4	27.8	2.8		
8.	Your university’s mgt. follow-up and ensure corrective actions to be taken timely based on internal audit findings.	F.	4	9	20	3	-	2.61	.707
		P.	11.1	25.0	55.6	8.3	-		
9.	Your university’s hiring and man power allocation of IAs follows government rules and regulations	F.	2	9	16	7	2	2.94	.836
		P.	5.6	25.0	44.4	19.4	5.6		
<b>Grand Mean</b>								<b>2.66</b>	<b>.270</b>

Source: Author construct from SPSS output, 2020

P = Poor, S = Satisfactory, G = Good, VG = Very Good, E = Excellent

As it can be seen in Table 4.14 above, the participant top level managements were asked to rate their agreement on “IA activities meet the requirements of the IIA's Code of Ethics.” According to the results of the analysis 16 (44.4%) of the respondents replied with either poor or satisfactory, while 5 (13.9%) responded with very good, but 14 (38.9%) responded with good. However, when the mean score of their rating is considered it is 2.55 indicating moderate status of the internal audit effectiveness in fulfilling the IIA’s code of ethics.

As to the second item which is indicated in Table 4.14, the respondents were asked to indicate their agreement on “IA ensures the activity that is performed compliance with established policies, law, regulation and directives independently.” accordingly majority of the participants 14 (38.9%) responded good, while 9 (25.0%) responded with satisfactory which is the same as to 9 (25.0%) who responded with either very good. The mean score of the ratings is 3.00 indicating moderate implementation of the indicated item. Since 25 (69.4%) of the participants responded at least “good” this result implies in most of the selected universities internal auditors perform compliance with established policies, law, regulation and directives independently.

As to the third item of Table 4.14, the respondents were asked to respond on the “The audit reports provided by IAs of your university are reliable and significant.” So according to the result of the analysis 17 (47.2%) of the respondents responded poor or satisfactory, but 14 (38.9%) responded with good and 5 (13.9%) very good. The mean score of their response is 2.50 indicating to some extent moderate level of practice by the IAs. Therefore, according to the responses result it implies the audit reports provided by IAs is reliable and significant in most the selected universities.

Concerning the fourth item depicted in Table 4.14 was designed to get responses on “The IA team members have sufficient technical and IT knowledge to perform their role effectively.” from the participant middle level managements, accordingly, majority of the respondents 23 (63.9%) responded either poor or satisfactory to the given statement, while only 9 (25.0%) of the participants responded good, whereas, only 4 (11.1%) responded with either very good or excellent. But the mean score of their responses is 2.22 indicating low level status of the IA team members in most of the selected universities. Therefore, from this result one can notice that most of the IA team members did not have sufficient technical and IT knowledge to perform their role effectively which is confirmed by most of top level management participants.

Regarding the fifth item shown in Table 4.14, like the other items the respondents were inquired to give their perception on “Internal auditors have the experience to address internal control and risk management problems within the university.” According to their responses, half of the respondents 23 (50.0%) replied with either poor or satisfactory, whereas, 14 (13.9%) replied with good and only 4(11.1%) of the respondents responded with “very good”. The mean score of the responses is 2.38 indicating low level practice of the stated item. Therefore, this numerical value implies internal auditors did not have the experience to address internal control and risk management problems within their university.

As to the sixth item described in Table 4.14, it was intended to ask the respondents to rate their agreement on “The allocation of a sufficient budget to IA department to accomplish its IA plan is” according to their responses, majority of the respondents 16 (44.4%) responded with satisfactory, while 13 (36.1%) responded “good”. But the mean score of the overall responses was 2.66 that show moderate allocation of budget to IA department in most of the selected universities.

Regarding the seventh item which is stated in the same table, it was aimed at getting the response from the participant middle level managements on “Internal auditors obtain unrestricted access to any information regarding your university is” so according to their responses, majority of the respondents 26 (72.2%) replied with at least “good”, but 8 (22.2%) responded with satisfactory. However, the mean score of the responses was 3.05 which indicate internal auditors obtain unrestricted access to any information regarding their university.

In item eight of Table 4.14, it was intended to get the respondents outlook on “Your university’s management follow-up and ensure corrective actions to be taken timely based on internal audit findings” according to their responses, 13 (36.1%) of the respondents replied either poor or satisfactory and 20 (55.6%) responded with “good” and the rest 3 (8.3%) with “very good”. But when the mean score of their responses were considered it was 2.61 indicating that managements of most of the selected universities follow – up and ensure corrective actions to be taken timely based on the internal audit findings at moderate state.

Finally, item nine as depicted in Table 4.14, the respondents were asked to rate their perception on “Your university’s hiring and man power allocation of IAs follows government rules and regulations”, accordingly 11 (30.6%) of the respondents responded either poor or satisfactory, while 16 (44.4%) responded with “good”, whereas, 9 (25.0%) responded either “very good” or

“excellent”. The mean score of their responses is 2.94 indicating moderate level implementation of the stated item. From this result one can notice in most of the selected universities hiring and man power allocation of IAs follows government rules and regulations poorly.

In general, from the overall items mean score 2.66, one can notice that in most of the selected universities the effectiveness of internal audit was not as such at its good condition.

#### 4.4. Diagnostic Test: Reliability and Multiple Linear Regression Model

##### 4.4.1. Reliability Test Result

The reliability of the items in the questionnaire was checked using pilot study before running the actual study. This was done by selecting 12 internal audit experts and 8 members of managements randomly from two universities. But, the selected experts and managements used for the pilot tests were excluded while the actual data collection process and analysis was conducted. The reliability test for the whole items in the questionnaire was done using SPSS version 20 software and the output attached in the Appendices part.

As indicated in Table 3.15 below, the Cronbach’s Alpha result shows that the reliability of the six variables in the questionnaire which were employed to assess the determinants of internal audit effectiveness in selected government universities of Ethiopia and filled by the sampled experts is at least 0.728. This implies that the reliability of the instrument is more than the acceptable standard.

**Table3.15: Reliability Test Results of the Variables**

<b>Variables</b>	<b>Descriptions</b>	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Dependent	Effectiveness of IA	.797	8
Independent	Independence of Internal Auditors	.761	5
	Competence of internal audit staffs	.748	5
	Management support	.728	4
	Internal audit work quality	.798	7
	Perception of mgttwds the IAs value	.752	5
	Organizational settings	.763	6

Source: SPSS output, 2020

Therefore, the above reliability test result indicates that all the items in the questionnaire are suitable and can be employed to conduct the actual study.

#### 4.4.2. Evaluation of Multiple Linear Regression

In order the analysis results of multiple linear regression is valid it should satisfy its model assumptions; model fitness test; significance of the independent variables as a whole. Therefore, the diagnostic test results are presented and interpreted.

##### 4.4.2.1. On Model Assumptions

The assumptions were checked before running the regression analysis using SPSS version 20 software. The diagnostic test for the whole regression model is attached in the Appendix part. In this section, the evaluations of the assumptions are given as follows using the outputs of the SPSS.

**Normality assumption:** For any specific value of the independent variable, the values of the dependent variable are normally distributed.

There are several methods of assessing whether data are normally distributed or not. They fall in to two categories: statistical and graphical. In this study, in order to test the normality of the dependent data, Kolmogorov – Smirnov and Shapiro – Wilk tests of normality were used and conducted on SPSS. According to Field (2009), when the test result is non – significant ( $p > 0.05$ ) it shows that the distribution of the sample is not significantly different from a normal distribution. Thus, to test the normality assumption regression Kolmogorov – Smirnov (K –S) test and the Shapiro Wilk test was used (Samuel, 2017) which are the prime test for normality. The test result from the SPSS output is presented in Table 4.16 below and followed by its interpretation.

**Table 4.16: Result of Tests of Normality**

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
IAEA	.198	95	.075	.946	95	.067

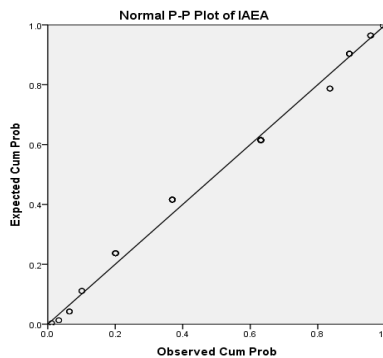
a. Lilliefors Significance Correction

Source: SPSS output, 2020

As it can be seen from Table 4.16, the p – values for both tests are greater than .05. This shows that the dependent variable – internal audit effectiveness values are normally distributed and hence normality assumption is met.

**Linearity assumption:** There is a linear relationship between the dependent variable and the independent variables. In other words, the value of Y is proportional to the independent variable X. Since the goodness of the model depends on how well it predicts Y, the linearity of the response(Y) and Predictors(X), p – p plot graph could be implemented. As indicated in (Torres – Reyna, 2007, p. 16), if the whole plots show 45° pattern, it indicates that the model seems to be doing a good job in predicting Y. As it can be seen in the graph given below, the plots go along the straight line, Figure 4.2, and the plots form 45° pattern. Therefore, the linearity assumption was met.

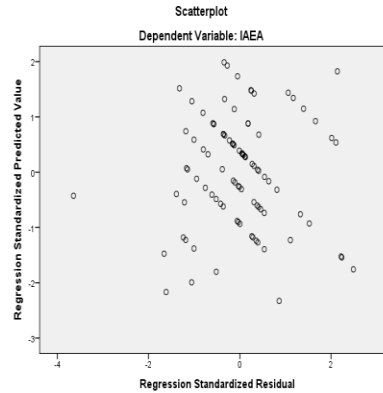
**Figure 4.2: Linearity p – p plot graph for IAE, Internal Audit Effectiveness**



Source: Survey Data of SPSS output, 2020

**Homoscedasticity (equal variance assumption):** For every value of the independent variable (X), the distribution of the dependent variables (Scores) must have approximately equal variability. To test this assumption regression standardized residuals and regression standardized predicted value plots were used, because, they detect model’s lack of fitness and unequal variances. As indicated in (Abdel – Salam, 2008, p. 16/42; Torres – Reyna, 2007), any trends or patterns in the plots indicated lack of fitness and unequal variances which lead to a potential problem in the model. The scatter plot for internal audit effectiveness is given below in Figure 4.3.

**Figure 4.3: Scatter plot for homogeneity of variance for IAE**



Source: Survey Data of SPSS output, 2020

As can be seen from the above scatter plot, Figure 4.3, even though most plots are concentrated towards the upper central part, they do not form a certain pattern and there are some plots dispersed out from the center. This dispersion can show to some extent the homogeneity of the variances. Meaning, nearly it satisfied the equal variance assumption.

**Non – multicollinearity assumption:** The independent variables are not very strongly correlated. That is, the predictor variables should not have a strong relationship with each other. Multicollinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is nearly linear combinations of the other independent variables (Keith, 2006 cited in plots, 2011).

**Table 4.17: Non – Multicollinearity test of the Independent Variables**

<b>Independent Variables</b>	<b>Tolerance</b>	<b>VIF</b>
Independence of internal auditors(INDIA)	.659	1.517
Competence of internal audit staffs(COMIAS)	.703	1.422
Management support(MGTS)	.478	2.092
Internal audit work quality(IAWQ)	.549	1.821
Perception of mgt towards the IAs value(PMTIAV)	.567	1.763
Organizational settings(ORGS)	.518	1.931

Source: Author construct from Survey Data of SPSS output, 2020

The six independent variables in the model should not be highly correlated. To test this assumption the researcher used the more precise approach, assessing the tolerance and its reciprocal values (VIF, variance inflation factor) in the output results of the regression analysis for model fitness. The tolerance value is the indication of the percent of variance in the predictor that can't be accounted for by the other predictors, very small value indicated that a predictor is redundant. If the tolerance value of each predictor is greater than 0.10, then it indicates the non – multicollinearity for each predictor if not it shows the existence of multicollinearity. As (Diem and Lapuente, 2012, p.9; Pallant, 2005, p. 150; Torres – Reyna, 2007, p.21) showed that, if the VIF value of each predictor is less than 10, then it indicates the non – multicollinearity of the predictors if not it suggested a problem. When such situation, tolerance less than 0.10 and VIF is greater than 10, is happened the regression model estimates of coefficients became unstable and the standard errors for the coefficients could get inflated. In other words the model loses its statistical validity. As it can be seen in the above Table 4.17, there was no multicollinearity amongst the independent variables INDIA, COMIAS, MGTS, IAWQ, PMTIAV, and ORGS in the model for the internal audit effectiveness. Therefore, the non – multicollinearity assumption was met.

Thus, as the four model assumptions test indicated in the above output results of the SPSS and discussion all assumptions were met and hence the multiple regression model for the internal audit effectiveness for the selected universities with the six independent variables was ready to be tested for model fitness test.

#### **4.4.2.2. Model fitness and Significance of the Independent Variables as a Whole**

For the purpose of determining the extent to which the explanatory variables explain the variance in the dependent variable, multiple linear regression model is useful. So, in order such model to be useful for prediction purposes, it should pass model fitness test. Thus, model evaluation and analysis was employed. Moreover, the coefficient of correlation and the test of its significance, i.e., to test whether there is a significant correlation between the explained variable (effectiveness of internal audit) and the six independent variables conducted. The results of the analyses are evaluated and narrated below.

##### **Model Fitness Test**

Model fitness test is a statistical test to check whether the regression model is fit for the data or not. To test this, the overall steps for testing multiple linear regression model, F – test analysis of

variance [ANOVA] for the overall model fitness test and t – test for the significance of an individual coefficients in the regression model with 5 % level of significance were used as (Alemzewed, 2019; Arefayne, 2019 and Mwangi, 2017) did. Therefore, the significance of the independent variables as a whole is summarized in Table 4.18 below.

**Significance test of the coefficients as a whole**

**Model Hypothesis to be tested:**

$H_0: \beta_i = 0$  Means all the six determinant factors of internal audit effectiveness  $X_i$  &  $Y$  are not linearly related.

$H_1: \beta_i \neq 0$  [At least one of the  $\beta_i$  's is different from zero for  $i = 1, 2, 3, 4, 5, 6$ ] – Means  $X_i$  &  $Y$  are linearly related with  $\alpha = 0.05$ , level of significance

**Decision Rule:** If  $1 - p > 0.95$ , then it shows at least one of the coefficients in the model is significant. Reject  $H_0$  and conclude that, the model fit the data (i.e. the model is useful for prediction purposes, where  $p =$  the sig. value in the output. If  $1 - p < 0.95$ , then this shows all the coefficients in the regression model are zero. In this case the null hypothesis should be accepted. Conclude the model does not fit.

Multiple linear regression model does a good job of describing the relationship between the dependent variable (internal audit effectiveness) and the independent variables (determinant factors), if large proportion for sample coefficient of determination,  $R^2$ , be ensured. Such a test is accomplished by the means of analysis of variance (ANOVA) which enables us to test the null hypothesis of no linear relationship between X and Y discussed as follows:

**Table 4.18: ANOVA output part I: IAE with the Six Variables**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.044	6	.674	31.943	.000 <sup>b</sup>
	Residual	1.853	88	.021		
	Total	5.897	94			
a. Dependent Variable: IAEA						
b. Predictors: (Constant), ORGSA, MGTSA, COMIASA, INDIAA, PMTIAVA, IAWQA						

Source: SPSS output, 2020

As it can be seen from the above Table 4.18, the F - calculated value with its degrees of freedom (6, 88) for internal audit effectiveness as a whole is  $.000 < 0.005$  implies that with the confidence interval  $(1 - \alpha)$  very close to 100%, where  $\alpha = \text{sig. value}$ . Therefore, it could be said that at least one of the coefficients  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$  was significant for the model – internal audit effectiveness. In other words, the variable Y (IAE) was better if it was a function of at least one of the variables  $X_1, X_2, X_3, X_4, X_5, X_6$  (the six determinant factors for the effectiveness of Internal Audit) rather than only with  $\beta_0$ . Therefore,  $X_i$  and Y were linearly related and that the model was fit the data. Hence, the regression model was fit and could predict the impact of the six determinant factors on the effectiveness of internal audit. Concerning the remaining significant tests and the results of the analysis discussion presented and discussed in chapter four.

#### 4.5. The Regression and Hypothesis Test Results

The regression result that are obtained by regressing the determinants of internal audit effectiveness on independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards internal audit value, and organizational settings are presented, interpreted and discussed. Finally, the hypotheses tests were undertaken based on the proposed hypotheses and the regression outputs.

##### 4.5.1. Regression Results on Determinants of Internal Audit Effectiveness

##### 4.5.1.1. Model Summary: Capacity of the six independent variables as a whole in explaining IAE

**Table 4.19: Model Summary of IAE on INDI, COMIAS, MGTS, IAWQ, PMTIAV, and ORGS**

Model Summary <sup>b</sup>							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.857 <sup>a</sup>	.735	.717	.14567	.735	31.943	.000

a. Predictors: (Constant), ORGSA, MG TSA, COMIASA, INDIAA, PMTIAVA, IAWQA

b. Dependent Variable: IAEA

Source: SPSS output, 2020

In the above Table 4.19, the R – value of the model indicates the multiple correlations which are the equivalent of Pearson’s r rather than representing the magnitude and direction of the relationship between two variables. It shows the strength of the relationship between the outcome variable (dependent) and the independent variables as a whole. It tells us how well the model predicts the outcomes (sometimes researchers call it how well the model fits the data). Therefore, the numerical value  $R = .857$  indicate the existence of strong positive relationship between the dependent variable – IAE and the six predictor variables.

In the same table, the R square value indicated that the percentage of the variation of the dependent variable (internal audit effectiveness) is directly attributable to the independent variables. As it can be seen from Table 4.19, the R square value is .735 which means the model explained 73.5% of the variance in the effectiveness of internal audit in the selected government universities in Ethiopia. Since R-squared value more than 25% can be respectable and good to fit Reisinger (1997) and Thompson (2002), and as Pallant (2005) indicated, the explaining capacity of the model with the six predictor variables was 73.5%, whereas, the remaining 26.5% of the variation was explaining by other variables which were not included in this study.

The Adjusted R square value, the most useful measure of the success of the model, which is better than the R square value. Because R square value tends to somewhat over – estimate the success of the model when applied to the real world, but the Adjusted R square value takes in to account the number of variables in the model and the number of observations (participants – in this study the selected universities) upon which the model was based on (Diem & Puente, 2012). Therefore, the largest adjusted R square value indicates the best fit of the model. Based on this, the adjusted R square value for the effectiveness of internal audit is .659. So, one can say that the internal audit effectiveness model, with the six determinant factors, had accounted for 71.7% of the variance in explaining the internal audit effectiveness.

In general, from the above analysis and its interpretation one can infer that the six independent variables: competence of internal auditors, management support, internal audit work quality, perception of managements towards internal audit value, and organizational settings inevitable and fit the model and the model is capable to explain the effect relation between the predictor variables and the outcome variable – IAE.

#### 4.5.1.2. Effects and Significance of each of the six independent variables on IAE

In order to identify which regression coefficient (or independent variable) has significant effect for the model (for the dependent variable), the output of the coefficients table of the SPSS was used. The test of significance was conducted by the  $t - p - \text{value}$ .

#### Significance Test of each Regression Coefficient

To identify which regression coefficient was significant and had greater/est contribution for the model, the output of the coefficients table was used. The test of significance was conducted by the  $t - p - \text{value}$ .

**Table 4.20: Results of the Significance Test of each Regression Coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations Zero – order
		B	Std. Error	Beta			
1	(Constant)	-.465	.372		-.976	.476	
	INDIA	.356	.065	.351	4.938	.000	.654
	COMIAS	.301	.096	.233	3.213	.004	.617
	MGTS	.083	.054	.152	1.293	.201	.518
	IAWQ	.211	.047	.257	3.131	.001	.459
	PMTIAV	.235	.077	.239	2.848	.005	.441
	ORGS	.079	.093	.119	1.357	.383	.498

Source: Author construct from Survey Data of SPSS output, 2020

#### Effect and Model Interpretation

According to the result obtained from the SPSS, in Table 4.20 above, under the Sig. column, the  $p - \text{values}$  of all the independent variables, except MGT and PMTIAV, are less than 0.05, indicated that they are statistically significant for the model, because their level of confidence are greater than 95% [  $(1 - p)100\%$  ]. For instance, for COMIAS,  $p - \text{value} = .004$  which leads to have a confidence level of  $(1 - .004)100\% = 99.6\%$  which is greater than 95%. Meaning, the four independent variables – INDIA, COMIAS, IAWQ, and PMTIAV had significant effect on the effectiveness of internal audit in the selected government universities.

In general, the information contained and discussed in section 4.5.1.1 characterized the goodness and the usefulness of the model to predict the impacts on the effectiveness of internal audit based

on independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards internal audit value, and organizational settings. Therefore, the proposed regression model becomes the predictor model (forecast model) with equation:

**Predictor model:**

$$\hat{Y}(\text{IAE}) = - .465 + .356\text{INDIA} + .301\text{COMIAS} + .083\text{MGTS} + .211\text{IAWQ} \\ + .235\text{PMTIAV} + .079\text{ORGS}$$

Forecasting the effect is using regression involves making predictions about the dependent variable based on the relationships observed in the estimated regression. Therefore, the above predictor model is interpreted in terms of unstandardized coefficients and presented below.

***Predictor Model Interpretation***

The predictor model,  $\beta_i$ 's, the unstandardized beta coefficients tell us about the causal (effect) relationships between the outcomes, internal audit effectiveness and the six independent variables. Since all the beta coefficients are positive, so are their relationships with the dependent variable. That is, as the mean score of each independent variable increases, the mean score of the effectiveness of internal audit also increases. Meaning the internal audit improves its effectiveness. In addition, these  $\beta$  values give us also an idea of influence each independent variables has on the effectiveness of internal audit if the effect of the other variables are held constant. For example,  $\beta(\text{INDIA}) = .356$ : as the mean score of INDIA increases by one unit, holding the other independent variables constant, the mean score of effectiveness of internal audit increases by .356 units. Meaning, as the internal auditors in the selected government universities are more independent, internal auditing becomes more effective.

**Contribution of each of the six predictor Variables for IAE Model**

In order to identify and compare the extent of the impact of each of the six predictor variables on the effectiveness of internal audit, standardized coefficients, Beta values were used (Table 4.20), because, it gives the measure of the contribution of each independent variable. A large value

indicates that a unit change in this predictor variable has a large impact on the dependent variable. For instance, a unit change in the INDIA can bring a .351 change on the dependent variable – IAE, provided that the other independent variables kept constant. The percent of the effect of each of the six independent variables, INDIA, COMIAS, MGTS, IAWQA, PMTIIV, and ORGS was obtained by the equation that links  $R^2 = 0.735$  as indicated in (Beaumont, 2010) analysis:

$$R^2_{(INDIA)(COMIAS)(MGTS)(IAWQ)(PMTIIV)(ORGS)} = \beta_{INDIA}r_{0INDIA} + \beta_{COMIAS}r_{0COMIAS} + \beta_{MGTS}r_{0MGTS} + \beta_{IAWQ}r_{0IAWQ} + \beta_{PMTIIV}r_{0PMTIIV} + \beta_{ORGS}r_{0ORGS}$$

Where,  $\beta$ s are the coefficients (standardized) of the independent variables,  $r_s$  are the zero order correlations which had been taken from the output of the coefficients' Table 4.20, Zero order is the Pearson correlation between each predictor and dependent variable (Brooks, 2008, p.6). The value of  $R^2$  could be expressed as the sum of the product of each of the independent variables standardized Beta values by their respective zero order correlation coefficient values as:

$$.735 \times 100\% = (.351 \times .654 + .233 \times .617 + .152 \times .518 + .257 \times .459 + .239 \times .441 + .119 \times .498) \times 100\%$$

$$73.5\% \approx 23.0\% + 14.4\% + 7.9\% + 11.8\% + 10.5\% + 5.9\%$$

Therefore, the contribution or the impact of INDIA (independence of internal auditors) increased the effectiveness of internal audit by 23.0% which has the highest impact, whereas COMIAS, IAWQ, PMTIIV, MGTS, and ORGS in that order uplifted the IEA by 14.4%, 11.8%, 10.5%, 7.9%, and 5.9% respectively. From these percentages one can infer that independence of internal auditors is the most decisive determinant factor for the effectiveness of internal audit.

Thus the model was at best fit to predict the effectiveness of internal auditing. The composite contributions of independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards internal audit value, and organizational settings accounted for 73.5% ( $R^2 = 0.735$ ) of the variation in internal auditor's effectiveness.

#### 4.5.2. Results of Hypotheses Tests

The objectives of this study were to assess whether there is statistically significant impact of each of the six independent variables on the internal audit effectiveness in the selected

government universities in Ethiopia or not. That is, to test the stated six hypotheses, the researcher used the SPSS outputs Table 4.19 and 4.20. The regression outcomes presented in these tables provided comprehensive results for examination of the research hypotheses. Therefore, the regression results obtained from the model was utilized to test these hypotheses. The hypotheses sought to test for a significance influence of each of the six variables on internal auditing effectiveness.

#### **4.5.2.1. Hypothesis Test Result on Independence of Internal Auditors (INDIA)**

$H_{01}$ : Independence of internal auditors has no significant effect on the internal audit effectiveness in the selected government universities of Ethiopia.

This was the first proposed hypothesis in this research. As per the regression analysis results described in Table 4.20 indicates independence of internal auditors has statistically significant and positive impact on internal audit effectiveness ( $\beta = .356$ ,  $t$  – value =  $4.938 > 2$  with sig. value =  $.000 < 0.05$ ). Since the positive magnitude sign and  $t$ -value of more than two indicate a strong relationship between the independence of internal auditors and the outcome variable – IAE (Hair et al., 1998). This result led to reject the stated null hypothesis on this variable. Therefore, it can be inferred that independence of internal auditors has significant and positive impact on the effectiveness of internal audit. As far as public and government sectors are concerned, there are commonalities in policies, procedures and organizational contexts of most public sector entities in Ethiopia and have the same internal audit manual is used by all public bodies in Ethiopia (Ministry of Finance and Economic Development, 2004). This result is consistent with the previous internal auditing researches conducted by Wondwosen (2019); Arefayne (2019); Ayitew (2018); Tadiwos (2016); George et al.(2016); Tarekegn (2015); and Shewamene (2014) who found out independence of internal auditors was the most dominant determinant of internal audit effectiveness with positive and significant effect. Moreover, the result of this study is concurred with the findings of (George et al., 2016); this implies that internal auditors become more effective, when they are permitted to freely auditing activities.

Internal auditors' organizational independence has unique characteristic than other internal auditors' effectiveness determinants. In this study, independence of internal auditors is the only factor that has the greatest positive significant effect on internal auditors' effectiveness as of Tarekegn's finding which has the greatest influence in determining of the effectiveness of internal audit in 30 selected public sectors. Therefore, from the analysis result it can be

concluded that without assurance of independency adds the efforts of auditors to zero by impairing internal audit objectives and internal auditors become more effective, when they are permitted to freely auditing activities. Hence, every management of government universities should work aggressively on assurance of internal auditor's independence.

#### **4.5.2.2. Hypothesis Test Result on Competence of Internal Audit Staff (COMPIA)**

$H_{0_2}$ : Competence of internal audit staffs has no significant effect on the internal audit effectiveness in the selected government universities of Ethiopia.

According to the result obtained from the SPSS, in Table 4.20 above, the unstandardized beta coefficient, t - value and p - value of COMPIA are  $\beta = .301$ ,  $t = 3.213 > 2$  and  $.004 < .05$  indicating that competence of internal audit staff has significant and positive impact on internal audit effectiveness. This result led to reject the stated null hypothesis on this variable. This implies that competence of internal audit staff has significant and positive impact on the effectiveness of internal audit in the selected government universities. Moreover, competency of internal audit staff significantly helped the internal audit unit to identify non-compliance activities and to add more values to its university. This result is concurred with the prior researches conducted by Wondwosen (2019); Ayitenew (2018); Tadiwos (2016); and Shewamene (2014) who found out that competence of internal auditors have strong and positive relationship with the internal audit effectiveness. However, the result of this study is in contrast with the prior internal auditing researches. For instance, Arefayne (2019) argued that there was no significant determinant effect of competence of internal auditors (or professional certification) on IAE. In addition, Alemzewed (2019); Mwangi (2017); Tarekegn (2015); Cohen and Sayag (2010) concluded that there was positive but no significant relation between professional proficiency and IAE. Moreover, George et al. (2016) found out negative but significant determinant effects of competence of internal auditors on IAE.

#### **4.5.2.3. Hypothesis Test results on Management Support (MGTS)**

$H_{0_3}$ : Support from management has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

As it can be seen in Table 4.20, the regression analysis result revealed that the unstandardized beta coefficient, t - value and p - value of MGTS are  $\beta = .083$ ,  $t = 1.293 < 2$  and  $.201 > .05$  indicating that management support has no significant impact on internal audit effectiveness.

Therefore, the hypothesis of this research was accepted. Hence, from this result it can be inferred that management support has no significant impact on the effectiveness of internal audit. The result of this study is in line with the findings of wondwosen (2019); Arefayne (2019); Mwangi (2017); George et al.(2016); Tarekegn (2015); who found out that top management support was found to have no effect on internal audit effectiveness. However, the result was inconsistent with the prior studies on IAE by Mihret and Yismaw (2007); Cohen and Sayag (2010); Shewamene(2014); Tadiwos (2016); Mwangi(2017); Sisay(2018); and Alemzewed (2019) who found out that the top management support was the critical determinant of internal auditor effectiveness. This inconsistency was occurred might be due to differences in understanding and interpreting the concept of management support. According to Mihret and Yismaw (2007) management support was understood as the extent of the top level management's responsiveness to audit findings and commitment to strength internal audit by hiring proficient auditors, developing career channels for internal audit staff, and providing internal audit work independence. However, in this study, even though the management support was conceptualized as the extent of facilities and resources internal audit has received in order to perform audit activities. These resources include the extent of providing training in order to improve internal auditors' skill and update with the field; introducing them with new technology, policy or procedures when it is necessary, and the commitment to budget funds for certification to have relevant education in auditing that allows them to audit all of the organization's/sector's systems. But, the descriptive statistics analysis results on respondents in internal auditors and in senior managements confirmed that most of the internal audit works in most of the selected universities was not supported by the senior managements.

#### **4.5.2.4. Hypothesis Test Results on Internal Audit Work Quality (IAWQ)**

**$H_{0_4}$** : Internal audit work quality has no significant effect on the internal audit effectiveness in the selected government universities of Ethiopia.

The regression analysis result described in Table 4.20 revealed that the unstandardized beta coefficient, t - value and p - value of IAWQ are  $\beta = .211$ ,  $t = 3.131 > 2$  and  $.001 < .05$  indicate a positive, strong and significant relationship with IAE. This result implies rejection of the stated hypothesis on this variable. Therefore, from this result it can be inferred that IAWQ has positive and significant determinant effects on IAE in most of the selected government universities in Ethiopia. The result of this study is in line with the prior studies on internal auditing

effectiveness by Ayitenew (2018); George et al.(2016) and Cohen & Sayag(2010) who found out that internal audit work quality has a direct and positive impact on IAE. In this regard, the researcher also review necessary documents to examine the existence and the extent of audit manual, comprehensive audit plan, format and content of audit report of the selected universities. During the document review the researcher has been observed the following:

- Three sample audit reports from 2019 fiscal year were examined for this study. Overall, a review shows that the audit reports are prepared by auditors and reviewed & issued by IA head. The content of issued reports are not consistent, is comprehensive basic elements of audit report and unstandardized audit format. If the companies provide proper attention for caption problem could help enhance the quality of audit communications.
- Annual plans for its operations and approved by BOD but company's IAD does not develop a strategic plan, this would not have enabled the audit staff to evaluate risk and identify high risk areas that deserve audit attention. It could also have been an exercise by which the head of internal audit ensures the appropriateness of resources by projecting requirements in a timely fashion. The study reviewed the annual audit plan of the 2019/2020 budget year as a sample and observed that the plan was not comprehensive enough in terms of audit scope and the approach to identify auditable area.
- Few universities BOD does not approve and up to date internal audit manual.

However, the result of this study is not concurred with the findings of Arefayne (2019); Alemzewed (2019); and Tadiwos (2016) who have found no significant impact of IAWQ on the effectiveness of internal audit.

#### **4.5.2.5. Hypothesis Test Results on Perception of Managements (PMTIAV)**

**$H_{05}$ :** Perception of managements towards the internal audit's values has no significant effect on the internal audit effectiveness in the selected universities of Ethiopia.

As it can be seen from Table 4.20, the regression analysis result on the tests of the fifth hypothesis revealed the unstandardized  $\beta$  coefficient, t – value, and p – value of PMTIAV are  $\beta = .235$ ,  $t = 2.848 > 2$  and  $\text{sig.} = .005 < .05$  which indicates that positive and significant relation of perception of managements towards the internal audit's value with IAE. Since positive

magnitude ( $\beta$ ) with  $t$  – value greater than 2 indicates strong and positive relationship between the independent and dependent variable (Hair et al., 1998). This result implies rejection of the stated hypothesis in this variable and hence it can be inferred that perception of managements towards the internal audit's value has significant effect on the internal auditors ability in identifying the noncompliance activities and their added contribution to the end objective of effective internal audit activities in most of the selected government universities in Ethiopia. Therefore, the spirit of good perception of the management to the effectiveness of internal audit function in identifying the noncompliance activities and their ability to add value to their office were nothing without the appropriate management support to the internal audit functions and without the existence of adequate and approved IA staffs in the office. Therefore, the existence of competent IA staff may overshadow the determinants of the management's perception for the internal auditor's value. The result of this study is not in line with (Shewamene, 2014) who found out that managements' perception towards the internal audit values has positive but no significant impact on the effectiveness of internal audit. On the other hand, the result of this study also not in line with the finding of Tarekegn (2015) in terms of no significant impact, but different in terms of the relation, because it was negative relation with that of IAE.

Thus, from this result one can inferred that the hypothesis test result show significant relationship between managements' perception towards the internal audit's values and internal audit effectiveness. This means that the level of managements' awareness about the roles of internal audit in government universities influence the completeness of internal auditors to identify non – compliance activities and to add more values to the universities.

#### **4.5.2.6. Hypothesis Test Results on Organizational Settings (ORGS)**

$H_{0_6}$ : Organizational setting has no significant effect on the internal audit effectiveness in the selected government universities of Ethiopia.

The six hypothesis test result depicted in Table 4.20 revealed no significant and positive relationship between the organizational settings and the effectiveness of internal audit. Because its  $p$  – value = .383 which is greater than the level of significance 0.05. The magnitude ( $\beta$ ) value and its sign that shows the effect of this variable on the effectiveness of IA was .119 with the  $t$  – value of 1.357. The positive sign of the magnitude of the  $t$ -value of less than 2 indicate weak relationship between the organizational settings and the outcome variable – IAE (Hair et al., 1998). Therefore, the stated hypothesis on this variable was accepted and hence organizational

setting has no significant but positive effect on the internal audit effectiveness in the selected government universities of Ethiopia. But, in this regard one has to notice that non significance did not necessarily mean that it does not completely contribute to the effectiveness of IA. This result might be happened due to the existence of proper organizational settings of majority of the universities have a certain contribution for the IAE in the universities. This makes the contribution of the MP to the IAE insignificance. This result is in line with the previous study by Mihret and Yismaw (2007) on government universities who found out that organizational setting did not have a significant effect on internal audit effectiveness. Moreover, in different sectors, the finding of this study is consistent with previous internal audit studies conducted by (Wondwosen, 2019; Ayitenew, 2018).

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter is the final section that presents summary of the findings, conclusions, and recommendations of the study. It reported summary of the main findings of the study as presented in results and discussion section. Then conclusion and recommendations were made based on the findings. Finally, as a result of limitation of the study, the researcher provided suggestion for future study.

#### **5.1. Summary of Major Findings**

This study was conducted with the prime intent of assessing the determinants of internal audit effectiveness in selected government universities of Ethiopia. That is, the main theme of this paper was to examine the extent of the effect of the factors on internal audit effectiveness: independence of internal auditors, competence of internal auditors, management support, internal audit work quality, perception of managements towards internal audit value, and organizational settings as well as their relationship and impact on IAE.

The study employed explanatory survey research design with quantitative and qualitative approaches. Two structured questionnaires were distributed to 95 IAs, 10 internal audit directorate directors, 45 middle level and 36 top managements from the ten government universities. Then, analysis was made based on descriptive statistics and multiple linear regression analysis.

The major findings of the study are summarized as follows:

#### **5.1.1.Descriptive and inferential Statistics on Determinants of Internal Audit Effectiveness**

##### **5.1.1.1. On Independence of Internal Auditors**

This result implies in most of the selected universities internal auditors were not free from intervention while performing their duties; did not include any audit findings in their audit work and report directly to the concerned body; did not have access to all operational activities,

necessary documents, assets and transaction records freely and unrestrictedly; examined auditing issues with no management interest involved for adjustment beyond auditing standards and values; did not decide the scope, time, and extent of auditing procedures based on auditing standards and offices policy freely. In general, the overall items mean score is 2.29 indicating internal auditors of most of the selected universities implemented the independency of internal auditors' items at low level status. Therefore, from this mean score and the overall ratings, majority of the internal auditors did not implement their tasks independently.

#### **5.1.1.2. On Competence of Internal Audit Staffs**

The descriptive statistics result shown that majority of internal auditors of the selected universities to some extent did not have adequate professional knowledge on the overall activities in auditing; did not have sufficient proficiency in planning on risk – based internal auditing; to some extent moderate level of capability of internal auditors in techniques on control assessment and risk analysis; did not take continuous professional development training per year; have no sufficient knowledge and skill to understand the organizational system/structure. In general, the mean score of the whole items is 2.30 indicating that majority of the participants possessed the indicated items at low level status in the selected universities.

#### **5.1.1.3. On Management Support**

result shows in most of the selected universities two third of senior managements in the selected universities supported their internal audit to perform their duties and responsibilities; managements did not take corrective actions timely based on internal audit findings and recommendations; did not response to internal audit report reasonably. In general, the mean score of the overall responses was 2.75, indicated that majority of the respondents confirmed that managements were supported the internal audit effectiveness at moderate level.

#### **5.1.1.4. On Internal Audit Work Quality**

The descriptive statistics results shown that most of the selected universities internal audit findings were not based on tangible evidence and reliable; were not supported by sufficient evidence; two third of the selected universities internal auditors did not assist their managements by identifying risk exposures of the universities; did not ascertain compliance with their universities' policy and procedures and also with external contrasts, laws and regulations when applicable; were not in a position to check the adequacy of internal controlling system of their

universities; and internal auditors report was not balanced, constructive and supported by recommendations. In general, the overall items mean score is 2.35 indicating that most of the internal audit work qualities were at low level status.

#### **5.1.1.5. On Perception of Managements towards the Internal Audit's Value**

The descriptive statistics result shown that in most of the selected universities' managements have no good perception about internal auditing roles; did not consider internal auditing practices as a value – adding activity and as a result IAs did not work smoothly and regularly with the managements; did not encourage IAs to implement recommendations, to promote value – added activities and to strength internal audit functions; the position/status of internal audit was not clearly recognized by the management in their department; internal auditing was seen as if they were not providing internal assurance through investigations, check, assessment, consultants and advisers. In general, the overall items mean score is 2.40 indicating that most of the managements in the selected universities did not have positive perception towards the internal audit's value.

#### **5.1.1.6. On Organizational Settings**

The descriptive statistics results shown that in most of the selected universities the purpose of internal audit is not clearly defined or there might be problem in setting the aim in accordance with the standards set by the government; have internal audit policy for training for their internal audit staff. But lack of implementing their policy was their peculiar problem; no manual problem in almost all of the selected universities; internal audit department was not well organized and large enough to carry out its duties successfully; internal audit department sets and obtains sufficient budget to carry out their duties successfully, but they were not successful in most of their activities; majority of the selected universities did not follow government rules and regulation when they were hiring and allocation of man power for internal auditors; In general, the mean score of the overall items of organizational setting is 2.79 indicating moderate level extent effect and the organizational setting of most of the selected universities were not as such at good condition.

#### **5.1.1.7. On Internal Audit Effectiveness**

The descriptive statistics result shown that in most of the selected universities' the effectiveness of internal audit was poor; most of the internal auditors did not make appropriate

recommendations in order to improve the organizational process; internal auditors did not evaluate and improve the effectiveness of risk management and governance process as required; internal auditors in the selected universities did not review the effectiveness and efficiency of operations and program as internal audit policies and procedures; majority of the internal auditors did not establish a follow – up process to ensure corrective actions to be effectively implemented; majority of internal auditors were not in a position to evaluate the potential for the occurrence of fraud and how the organization manages fraud risk as expected; in most of the selected universities internal auditors to some extent reviews the reliability and integrity of financial information. In general, the overall items mean score is 2.53 indicating internal audit effectiveness status was at moderate level. Therefore, from this mean score and the overall ratings, it can be inferred that the internal audit in most of the selected universities do not deserve the expected effectiveness.

#### **5.1.1.8. On Regression Analysis**

According to the regression output, despite the contribution differences among the six predictors, all these predictors have positive contribution for the effectiveness of internal audit functions in the selected government universities of Ethiopia. However, among the six predictor variables, only four have positive and significant impact on IAE. These were independence of internal auditors, competency of internal audit staff, internal audit work quality, and managements' perception towards the internal audit work values. Of these predictor variables, independence of internal auditors was the major effect factor on the effectiveness of internal auditors in most of the selected universities. However, organizational setting and management support were not significantly important for the IAE of the universities as of the above four variables.

This study found that the composite measure of independence of internal auditors, competency of internal audit staff, management support, internal audit work quality, perception of managements towards the internal audit's work values, and organizational setting accounts for 73.5% variance for the IA effectiveness in identifying noncompliance activities and added contributions to the universities. That means, the impact of these six independent variables contributed for the dependent variable IAE were 73.5%, but the remaining percentage 26.5% was explained by the variables which were not included in this study.

## 5.2. Conclusions

Due to its important role it plays for the overall management system internal audit is the major mechanism to ensure sound corporate governance. The existence of effective internal audit in the offices links with internal control risk management system improves organizational efficiency and effectiveness, reduces information asymmetry during decision – making, and ensures internal reliability of financial reporting process. By taking this into considerations the study sought to determine the extent of the determinant factors of IA on its effectiveness in the selected government universities of Ethiopia. According to the findings of the study except management support and perception of managements towards the internal audit work quality, the other four determinant factors such as internal audit independence, competence, audit work quality and organizational settings have positive and significant influences on the effectiveness of internal audit in most of the selected government universities of Ethiopia. Therefore, based on the findings of the study the following conclusions were drawn:

**On Independence of Internal Auditors:** As the analyses from all data collection tools of the study revealed independence of internal auditors has the greatest impact on the effectiveness of internal audit in most of the selected universities. Therefore, from the results of the analysis it can be inferred that managements of each university did not give recognition to independence of internal auditors as required and their independence also was not assured by allowing them to freely perform auditing activities without management interference. Moreover, they did not also allowed to freely decide the scope, time and extent of auditing procedures; objectively examine auditing issues; freely access documents; feel free to include any audit findings in audit report; and directly report to responsible body in their universities.

**On Competency of Internal Auditors:** The descriptive statistics analysis results which was supported by middle and top level managements as well as internal audit directorate directors' interview results indicated the incompetency of majority of internal auditors in most of the selected universities. Moreover, the regression analysis results also indicated that competence of internal audit staffs have positive and significant effect on the internal audit effectiveness in most of the selected government universities of Ethiopia. Therefore, from these results it can be inferred that the majority of the internal auditors did not possess the appropriate professional skills, qualifications and experiences and participate in continuing professional development.

On Internal Audit Work Quality: as the descriptive statistics and regression analyses result showed that internal audit work quality was the third variable to have significant and positive influence on the effectiveness of internal audit in most of the selected universities. Therefore, from the overall data gathering tools analysis result one can infer that to some extent most of the internal auditors did not based on tangible evidence and reliable; were not supported by sufficient evidence; did not assist their managements by identifying risk exposures of the universities; did not ascertain compliance with their universities' policy and procedures and also with external contrasts, laws and regulations when applicable; were not in a position to check the adequacy of internal controlling system of their universities; and internal auditors report was not also balanced, constructive and supported by recommendations. In general, the internal audit work quality in most of the selected universities was at low status.

On Perception of managements towards the internal audit's value: from the findings of the study revealed that perception of managements towards the internal audit's value has significant effect on the effectiveness of internal audit. Therefore, from the whole analyses of the study result it can be inferred that even though the position/status of internal audit is clearly recognized by the management of most of the selected universities, managements have no good perception about internal auditing roles, managements did not consider internal auditing practices as a value – adding activity, managements did not encourage auditors to implement recommendations, to promote value – added activities and to strength internal audit functions. Moreover, most universities did not see internal auditing as providing internal assurance through investigations, check and assessment, and consultants and advisers.

Regarding the management support and organizational settings, even though, the regression analysis result revealed no significant effect of both independent variables, it does not mean that they have no contribution to the effectiveness of internal audit at the university level, because the better the managements' perceptions of internal audit values, the higher the internal auditors' ability in identifying non – compliance activities and the more added contributions. Therefore, from the overall analysis results concerning management support and organizational settings it can be inferred that despite the result, most universities were not in a position to work as expected on the stated issues.

In general, it can be inferred that the effectiveness of internal audit in government universities will be under question, unless these determinant factors are appropriately pledged in the government universities.

### **5.3. Recommendations**

The objective of the study was to assess determinants of internal audit effectiveness in selected government universities of Ethiopia. In relation to this, data analyses were made using quantitative and qualitative methods. According to the research objective and based on the analyzed data results and conclusions, the researcher provides the following recommendations to the management of each Government University and concerned bodies:

**On Independence of internal Audit:** To improve internal auditors' effectiveness in the government universities, the management of each university should give recognition to independence of internal auditors. Internal auditors' independence can be assured by allowing them to freely perform auditing activities without management interference. Internal auditors' adequacy would be assured when they are allowed to freely decide the scope, time and extent of auditing procedures; objectively examine auditing issues; freely access necessary documents; feel free to include any audit report; and directly report to responsible body, for instance, to audit committee and board of directors in their universities.

**On Internal Audit Work Quality:** based on the fact that the greater quality of internal audit work understands in terms of compliance with formal standards as well as a high level of efficiency in the audit's planning and execution improve the auditor's effectiveness. When internal audit demonstrate professionalism and an objective approach in their work, report balanced and constructive audit, the effectiveness of an internal audit can be increased. According to the regression output, despite the contribution differences among the six predictors, all these predictors were positively contributed for the effectiveness of internal audit functions in the selected government universities of Ethiopia. Therefore, government universities are better to give more emphasis on those which had positive and significant impact on IAE to use these determinant variables to make their service delivery effective, efficient and economical throughout their offices.

**On Competency of Internal Auditors:** The descriptive statistics analysis results which was supported by middle and top level managements as well as internal audit directorate directors'

interview results indicated the incompetency of majority of internal auditors in most of the selected universities. Moreover, the regression analysis results also indicated that competence of internal audit staffs have positive and significant effect on the internal audit effectiveness in most of the selected government universities of Ethiopia. Therefore, from these results it can be inferred that the majority of the internal auditors did not possess the appropriate professional skills. Qualifications and experiences and participate in continuing professional development.

On Perception of managements towards the internal audit's values: since the better the management's perceptions of internal audit values, the higher internal auditors' completeness in identifying noncompliance activities and the more added contributions. The spirit of good perception of the management to the effectiveness of internal audit function can play a great role in identifying the noncompliance activities and their ability to add value to their office. Therefore, management bodies of government universities are better to improve their perception towards the internal audit's values.

On management support and organizational settings: even though according to the findings of the study, both management support and organizational settings have no significant effect on the internal audit effectiveness in the selected universities of Ethiopia, managements should not undermine the contributions of these factors to the effectiveness of internal auditors. Moreover, the management should continue supporting internal audit work by employing adequate and competent internal auditors and should work more to increase the number of competent internal auditors.

Finally, the Ethiopian higher education institutions should contribute for the internal audit effectiveness by working in collaboration with the Ethiopian Finance and Economic Ministry and other concerned bodies to accomplish effective internal audit works by supplying adequate and competent internal audit staffs and also to set strategies and policies on continuous professional development trainings to upgrade the existing internal auditor staffs proficiency in line with the institute of internal audit standards.

#### **5.4. Suggestions for Further Study**

Based on the scope and limitations of this study, the following suggestions are recommended for future studies:

- It is recommended if the future research add other determinant factors such as internal audit charter, internal audit committee, and availability of information technology.
- It is better if the future research can use probabilistic sampling techniques including private universities to generate results based on better representative sample survey from the whole universities of Ethiopia, because as in all case studies, the generalizability of the findings and the conclusions drawn is limited, although the study does provide evidence of the problems internal auditors face in providing an effective service to management.

## References

- Abdel – Salam, G.A.(2008). *Interpreting Multiple Regressions: A short overview*, Virginia Polytechnic Institute and State University, [http://www. Stat.vt.edu/consult/](http://www.Stat.vt.edu/consult/)
- Abbott, A. (1988). *The systems of professions: An essay on the division of expert Labor*. Chicago: Chicago University Press
- Abu-Azza, W. O.(2012). *Perceived Effectiveness of the Internal Audit Function in Libya: A Qualitative study using Institutional and Marxist Theories*, Australia: School of Accounting, Economics and Finance; Faculty of Business Law; University of Southern Queensland
- Ajay S, S. and Micah B, M.(2014). Sampling Techniques and Determination of Sample Size in Applied Statistics Research: An Overview. *International Journal of Economics, Commerce and Management United Kingdom*, vol.11, Issue 11
- Alemzewed Ayele.(2019).Determinants of Internal Audit Effectiveness in Ethiopia: The Case of Selected Budgetary Public Sectors, Addis Ababa Ethiopia
- Ali, A. M., Gloeck, J. D., Ali, A., Ahmi, A. & Sahdan, M. H. (2007), “Internal Audit in the State and Local Governments of Malaysia”, *Southern African Journal of Accountability and Auditing Research*, 7(1), 25-57
- Al-Twaijry, A., Brierley, J. A. & William, D. G.(2003). The development of internal audit in Saudi Arabia: an institutional theory perspective. *Critical Perspectives on Accounting*, 14(5), pp. 507-531
- ANAO. (2003). *Public sector governance, better practice guide*, Commonwealth of Australia: National Audit Office, Canberra
- Arefayne Wodajo.(2019).Factors Affecting Internal Audit Effectiveness: The Case of Ethiopian Insurance Companies, Addis Ababa, Ethiopia
- Arena, M., & Azzone, G. (2007). Internal Audit Departments: Adoption and Characteristics in Italian Companies. *International Journal of Auditing*, 11(2), 91-114. <http://dx.doi.org/10.1111/j.1099-1123.2007.00357.x>
- Arena, M, &Azzone, G.(2009). Identifying organizational drivers of internal audit effectiveness. *International Journal of Auditing*, 13:43-60
- Arens, A. A., Elder, R. J., & Beasley, M. S. (2012). *Auditng and Assurance Services: an Integrated Approach* (14th ed.). New Jersey: Pearson Prentice Hall
- Asare, T. (2008). The role of Internal Auditing in the public sector of Ghana: Governance and Accountability. MSc Dissertation, Birmingham City University Business School, Birmingham, UK

- Ahmad, Z. and Taylor, D.(2009). Commitment to independence by internal auditors: the effects of role ambiguity and role conflict. *Managerial Auditing Journal*, 24:899-925
- Ayitenew Temesgen and Lakech.(2019). Determinants of Internal Audit Effectiveness: Evidence from Gurage Zone
- Baltaci, M., & Yilmaz, S. (2006). *Keeping an eye on Sub national Governments: Internal control and audit at local levels*, World Bank Institute Washington, D. C.
- Belay, Z. (2007). Effective Implementations of Internal Audit Function to Promote Good Governance in the Public Sector, Addis Ababa: Ethiopian Civil Service College Research, Publication & Consultancy Coordination Office
- Bethlehem Fekadu.(2009).Internal Audit Practices: A Case of Ethiopian Governmental Higher Educational Institutions for the Partial Fulfillment of MSC. In *Accounting and Finance*
- Bhattacharjee A. (2012). *Social Science Research: Principles, Methods, and Practices*, Global Text Project, University of South Florida
- Bluman, G., A.(1998). *Elementary Statistics - A Step by Step Approach*, Community College of Allegheny County, International Edition, WCB/McGraw – Hill, <http://www.mhcollege.com>
- Cecilia, N.V.G.(2005).Internal Audit Finding Its Place in Public Finance Management, **The International Bank for Reconstruction and Development/The World Bank** 1818 H Street, N.W. Washington, D.C. 20433, U.S.A.
- Changwony, M. K. & Rotich, D. G.(2015). Role of Internal Audit Function in Promoting Effective Corporate Governance of Commercial Banks in Kenya, *International Journal of Business & Law Research*, 3(1), pp. 15-33
- Cohen, A, & Sayag, G. (2010). The effectiveness of internal auditing: an empirical examination of its determinants in Israeli organizations, *Australian Accounting Review*, 20. (3):296-307
- Cohen, J., Krishnamoorthy, G. and Wright, A. (2002), Corporate Governance and the Audit Process”, *Contemporary Accounting Research*, 19(4), pp. 573-94
- Cooper, D. R. & Schindler, P. S.( 2013). *Business Research Methods*, 8th Ed. Mc Grow Hill. Singapore, P 24.
- Creed, C., Freeman, R., Robinson, B. & Woodley, A.(2004). Mixed research methods: Prest practitioner research and evaluation skills training in open and distance learning, common wealth of learning (COL)
- Creswell, J. W. (2003). *Research design: qualitative, quantitative, and mixed method approaches*. 2nd Ed. Published by SAGE.

- Creswell, J. W. (2006). *Research design, quantitative and mixed approaches* (2ndEd): London, Sage Publication Inc.
- Creswell, J.W.(2012). *Educational Research: Planning, Conducting, Evaluating Quantitative and Qualitative Research* (4<sup>th</sup> ed.), University of Nebraska – Lincoln
- Diem, N. & Lapuente, H.T.(2012). *The steps to Follow in a Multiple Regression Analysis*, SAS Global Forum, pp – 333
- DiMaggio, P. & Powell, W.(1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields and collective rationality in organizational fields. *American socio logical review*, 48(2), pp. 147-160
- Ditterhofer, M., 2001. Internal Audit Effectiveness: an expansion of present methods. *Managerial Auditing Journal*, 16(8), pp. 443-450
- Fadzil, F., H., Haron, H, Jantan, M. (2005). Internal auditing practices and internal control system, *Managerial Auditing Journal*, 20:844-66
- Field A. (2009), *Discovering statistics using SPSS*, 3<sup>rd</sup>edition, SAGE. Publication Ltd
- George, T., Edward, M., Y., & Sampson, O., D.(2016).Determinants of Internal Audit Effectiveness in Decentralized Local Government Administrative Systems, *International Journal of Business and Management*; Vol. 11, No. 11
- Goodson, S. G., Mory, K. J., & Lapointe, J. R. (2012). *The Role of Auditing in Public Sector Governance*, Altamonte Springs, Fla., USA: The Institute of Internal Auditors
- Griffiths, D. (2006). *Risk based internal auditing. Three views on implementation*. Retrieved May 22, 2018, from <http://www.internalaudit.biz>
- Hair, J., Anderson, R., Tatham, R. & Black, W.(1998). *Multivariate Data Analysis*, 5th ed. New Jersey: Pearson Prentice Hall Juipur (India), New Age International
- Hawa, A. (2016). *Factors that Identify the Effectiveness of Internal Audit in Oromia Special Zone Surrounding Finfinne Administration Finance and Economic Development Offices*, Unpublished Master Thesis, College of Business and Economics, Addis Ababa
- Institute of Internal Auditors (IIA).(2006). *The Role of Auditing in Public Sector Governance.*, Altamonte Springs, FL.
- Kothari, C.R.(2004).*Research Methods and Techniques* (2<sup>nd</sup> Ed.).University of Rajasthan,
- Maru, M.L.B. (2002). Forensic Auditing: A Tool in Local Government Financial Control, in *The Journal of the Association of National Accountants of Nigeria* Volume 10, No:3
- Medanit A., (2016). Factors affecting Internal Audit Effectiveness A case of Commercial bank of Ethiopia Addis Ababa Branch Office, St. Mary's University

- Mihret, D.,G. & Woldeyohannis, G., Z. (2008). Value added role of internal audit: an Ethiopian case study. *Managerial Auditing Journal*, 23:567-95
- Mihret, D., G., & Yismaw, A., W.(2007). Internal Audit Effectiveness: An Ethiopian Public Sector Case Study. *Managerial Auditing Journal*, 22(5), 470 – 484. <http://dx.doi.org/10.1108/02686900710750757>
- Mihret, D.G., Mula, J. M. & James, K., 2010. Antecedents and Organizational Performance Implications of Internal Audit Effectiveness: Some Propositions and Research Agenda. *Pacific Accounting Review*, 22(3), pp. 224-252
- MoFED. (2004). (The) Ministry of Finance and Economic Development (2004), Internal Audit Standards and Code of Ethics for Internal Auditors and Internal Audit Procedural Manual: Ministry of Finance and Economic Development Available at [http://www.mofed.gov.et/English/Information/Pages/Financial Institutions.aspx](http://www.mofed.gov.et/English/Information/Pages/Financial%20Institutions.aspx) (accessed on December 13, 2013)
- MoFED.(2013). *Federal Democratic Republic of Ethiopia Annual Progress Report for F.Y. 2011/12 Growth and Transformation Plan*, Addis Ababa: Ministry of Finance and Economic Development (MoFED)
- Mohammad, S. R.(2018). Risk Management and Measurement of Risk Management Performance in Complex Projects
- Mwangi, G., S.(2017). Determinants of Internal Audit Effectiveness in Decentralized Governments in Kenya: A Case Of Selected Counties, A Dissertation for MSc (Unpublished Paper)
- Oluwatoyin M. J. P., Ayoib, B.C. A., Oyewumi, H. K.(2016). Determinants of Internal Audit Task Performance in Nigerian Tertiary Institutions: A Conceptual Approach, Munich Personal RePEc Archive
- Oyewumi, H. K., Ayoib, C., Oluwatoyin, M. JP.(2016).Determinants of Internal Audit Task Performance in Nigerian Tertiary Institutions: A Conceptual Approach, *International Conference on Accounting Studies (ICAS)*,15-18, Langkawi, Kedah, Malaysia
- Pallant, J.(2005)., *SPSS Survival Manual: A Step by Step guide to data analysis using SPSS for windows*. (Version 12)
- Plotts, T.(2011). *A Multiple Regression Analysis of Factors Concerning Superintendent Longevity and Continuity Relative to Student Achievement*, Seton Hall University Dissertation and Theses (ETDs), paper 484
- Ramachandran, D. J., Subramanian, D. R., Kisoka, & I, J. (2012). Effectiveness of Internal Audit in Tanzanian Commercial Banks, *British Journal of Arts and Social Sciences*, 8(1), 32-44

- Reisinger, H. (1997). The Impact of Research Designs on R<sup>2</sup> in Linear Regression Models: an Exploratory Meta-Analysis. *Journal of Empirical Generalizations in Marketing Science*, 2(1), 1-12
- Santiso, C. (2006). Improving fiscal governance and curbing corruption: how relevant are autonomous audit agencies. *International Public Management*, 7, 97-108
- Sarens G. and Beelde I.D. (2006), "The Relationship between Internal Audit and Senior Management, A Qualitative Analysis of Expectations and Perceptions": *International Journal of Auditing*, 10(3), 219 -41
- Saunders, M., Lewis, P. and Thornhill, A. (2007). *Research method for Business students*, England: Pearson Education Ltd
- Shewamene Hailemariam.(2014).Determinants of Internal Audit Effectiveness in the Public Sector, Case Study in Selected Ethiopian Public Sector Offices, Jima University, Ethiopia
- Shewhart, W. A., & Wilks, S. S. (2004). *Methods for Testing and Evaluating Survey Questionnaires In: R. M. Groves, et al. eds. Wiley Series in Survey Methodology*. New Jersey: A John Wiley & Sons, Inc. Publications
- Sisay Gebre.(2018).Factors influencing effectiveness of internal audit in public sector offices in East Shewa, Addis Ababa, Ethiopia
- Soh, D. and Bennie, M. (2011), "The internal audit function Perceptions of internal audit roles, effectiveness and evaluation": *Managerial Auditing Journal*, 26(7), 605-22
- Stewart , J., & Subramaniam. (2010). Internal audit independence and objectivity: emerging. *Managerial Auditing Journal*, 25(4), 328-360
- Tadiwos Misganaw.(2016). Factors Determining Effectiveness of Internal Audit in Ethiopian Commercial Banks, Addis Ababa, Ethiopia
- Taiwo, O. A., Samuel, A. A., James, U. M.(2016). Promoting Good Governance through Internal Audit Function (IAF): The Nigerian Experience, *International Business Research; Vol. 9, No. 5; 2016 ISSN 1913-9004 E-ISSN 1913-9012 Published by Canadian Center of Science and Education*
- Tamene, H., Daniel, K., & Derege, D. (2014). *Assessment of Internal Audit Effectiveness in Commercial Bank of Ethiopia*. Unpublished Master's Thesis, Saint Marry University, Faculty of Business, Addis Ababa
- Tarekegn Tariku Ebissa.(2015).Determinants of Internal Auditor's Effectiveness: Case of Ethiopian Public Sectors, *International Journal of Advances in Management and Economics* Available online at [www.managementjournal.info](http://www.managementjournal.info)
- Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2: 53 – 55

- Thompson, B. (2002). "Statistical", "Practical", and "Clinical": How Many Kinds of Significance Do Counselors Need to Consider? *Journal of Counseling and Development*, 80, 64-71
- Torres – Reyna, O.(2007). *Linear Regression Using Strata*,Princeton University, v.6
- Twycross, A. & Shields, L. (2004).*Validity and reliability: What is it all about? Validity in quantitative studies*, Series of Short papers on aspects of research
- Wendy, C.C.H and Alfonso, D. C. D.(2009). How is Risk Assessment Performed in International Technology Projects
- Wines, G. (2012). Auditor independence, Shared meaning between the demand and supply sides of the audit services market. *Managerial Auditing Journal*, 27(1), 5-40
- Winters, R. (2009). Achieving our potential, *Internal Auditor*, 65(3), 48-53
- Wondwosen Solomon.(2019).Factors Affecting Internal Audit Effectiveness: In The Case of Ethiopian Private Commercial Banks, Addis Ababa, Ethiopia
- Yalew Abraham.(2015).Determinants of Internal Audit Effectiveness Empirical Study On The Construction And Business Bank
- Zain, M. M., Subramaniam, N. and Stewart, J. (2006), Internal Auditors' Assessment of their Contribution to Financial Statement Audits: The Relation with Audit Committee and Internal Audit Function Characteristics, *International Journal of Auditing*, 10, pp.1–18
- Zelege, B .(2007). A Study on Effective Implementation of Internal Audit Function to Promote Good Governance in the Public Sector Ethiopian Civil Service College Research, Publication and Consultancy Coordination Office

## Appendices

### Appendix A



#### Wolkite University

#### Faculty of Business and Economics

#### Department Accounting and Finance

#### Masters of Science Program in Accounting and Finance

#### Questionnaire to be filled by Internal Auditors

Dear respondent,

The objective of this study is to gather actual information that will help to assess '**Determinants of Internal Audit Effectiveness in Selected Government Universities of Ethiopia**'. This study is under taken as a partial requirement for the completion of Masters of Science in Accounting and Finance. All data that will be gathered through this questionnaire will be used for research purpose and remains confidential. Your honest and thoughtful response is invaluable. Therefore, you are kindly requested to respond to the questions with greatest confidence and to the best of your knowledge.

Thank you in advance for your time and kind cooperation

Kind Regards, Seifu Shigaze Shimber,

## **Section I: Personal Profiles**

General Instruction: Please indicate your choice by putting “√” mark in the bracket.

**Gender:** Male [\_\_\_\_] Female [\_\_\_\_]

**Age Category (in year):** 20 to 29 [\_\_\_\_] 40 to 49 [\_\_\_\_]  
30 to 39 [\_\_\_\_] 50 to 59 [\_\_\_\_] Above 59 [\_\_\_\_]

**Your field of study:** Accounting [\_\_\_\_] Economics [\_\_\_\_]  
Management [\_\_\_\_] Other (specify) \_\_\_\_\_

**Level of education:** Diploma [\_\_\_\_] Master Degree [\_\_\_\_]  
Bachelor Degree [\_\_\_\_] other (specify) \_\_\_\_\_

**Years of experience as an internal auditor:**

Less than 2 years [\_\_\_\_] From 6 to 10 years [\_\_\_\_]  
From 2 to 5 years [\_\_\_\_] Greater than 10 years [\_\_\_\_]

## **Section II: Items on determinants of the effectiveness of internal auditor**

**Instruction:** Below are lists of statements pertaining to internal audit in your university. Please tick (√) the appropriate scale that indicates your agreement in the tables below. The values of the scales are 1 = Strongly Agree (SA), 2= Agree (A), 3= Undecided (U), 4= Disagree (D), 5= Strongly Disagree (SD)

## A. Independence of Internal Auditors

No	Items	Values of Scales				
		5	4	3	2	1
1.	I am free from any intervention in performing my duties.					
2.	I feel free to include any audit findings in my audit work and report directly to the concerned body.					
3.	I can freely and unrestrictedly access to all operations, necessary documents Personnel, assets and transaction records of the university.					
4.	I objectively examine auditing issues with no management interest involved for adjustment beyond auditing standards & values.					
5.	I can freely decide the scope, time, and extent of auditing procedures Based on auditing standards and offices policy.					

Please you can add if you think that there is factor(s) related to independence of internal auditors that can influence your audit works effectiveness in your university\_\_\_\_\_

---



---

## B. Competence of Internal Audit staffs

No	Items	Values of Scales				
		5	4	3	2	1
1.	Internal auditors have adequate professional knowledge on the overall activities of the IA department.					
2.	Internal auditors are proficient in planning on risk – based internal auditing.					
3.	Internal auditors are capable in techniques on control assessment and risk Analysis.					
4.	Internal auditors undertake continuous professional development training per year.					
5.	Internal audit staffs possess sufficient knowledge and skill to understand The organizational structure/system of the university.					

Please you can add if you think that there is factor(s) related to competency of IAs that can hinder the effectiveness of the audit works \_\_\_\_\_

---

### C. anagement Support

No	Items	Values of Scales				
		5	4	3	2	1
1.	Senior management supports internal audit to perform its duties and Responsibilities.					
2.	Management takes corrective actions timely based on internal audit findings & recommendations.					
3.	Senior management response to internal audit reports reasonably.					
4.	Management supports IA by providing training in order to improve their skills and update with the field.					

Please you can add, if any, factor(s) related to management support in your university that can influence the effectiveness of internal audit works \_\_\_\_\_

---



---

### C. Internal Audit work quality

No	Items	Values of Scales				
		5	4	3	2	1
1.	Internal Audit findings of yourUniversity are based on tangible evidence and reliable.					
2.	Internal audit findings your University are supported by sufficient evidence.					
3.	Internal auditors assist the management by identifying risk exposures of the university.					
4.	Internal auditors ascertain compliance with its university’s policies and Procedures.					
5.	Internal auditors ascertain the government compliance with external contrasts, laws and regulations when applicable.					
6.	Internal auditors of your university check the adequacy of internal Controlling system of the university.					
7.	Internal auditors report is balanced, constructive and supported by Recommendations.					

Please you can add, if any, factor(s) related to the internal audit work quality of your university that can influence the effectiveness of internal audit works \_\_\_\_\_

---



---

## D. Perception of Managements towards the internal audit's value

No	Items	Values of Scales				
		5	4	3	2	1
1.	Managements have enough awareness and good perception about internal auditing roles.					
2.	Managements consider internal auditing practices as a value – adding activity and I work smoothly and regularly with the management.					
3.	Managements encourages me to implement recommendations, to promote value – added activities and to strength internal audit functions.					
4.	The position/status of internal audit is clearly recognized by the management in my department.					
5.	The University see internal auditing as providing internal assurance through investigations, check & assessment, and consultants & advisers particularly into controls associated to management performance and internal operations.					

Please you can add, if any, factor(s) related to perceptions of managements towards the internal audit's value of your university that can influence the effectiveness of internal audit works \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## E. Organizational Settings

No	Items	Values of Scales				
		5	4	3	2	1
1.	The purpose of internal audit is clearly defined.					
2.	Your university has Internal audit policy for training of internal audit staff.					
3.	There is a complete internal audit manual to guide internal audit works.					
4.	Internal audit department is well organized and large enough to carry out its duties successfully.					
5.	Internal audit department sets and obtains sufficient budget to successfully carry out its duties.					
6.	Your university's hiring and man power allocation of internal auditors follows government rules and regulations.					

Please you can add, if any, factor(s) related to the organizational settings of your university that can influence the effectiveness of internal audit works \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## F. Internal Audit Effectiveness

No	Items	Values of Scales				
		5	4	3	2	1
1.	Internal audit performed in accordance with the IIA standards (ISPPIA)					
2.	Internal audits make appropriate recommendations for improving the Organizational process.					
3.	Internal audit evaluate and improves the effectiveness of risk management and governance process.					
4.	Internal audit reviews the effectiveness and efficiency of operations and Programs.					
5.	Internal audit establishes a follow – up process to ensure corrective actions have been effectively implemented.					
6.	Internal audit evaluates the potential for the occurrence of fraud and how the organization manages fraud risk.					
7.	Internal audit reviews the reliability and integrity of financial information.					

Please you can add, if any, about evaluation of internal audit effectiveness in your university that is not addressed in this questionnaire.

---



---



---



---

## Appendix B

### Questionnaire to be filled by Middle and Top Level Managements

#### Section I: Personal Profiles

General Instruction: Please indicate your choice by putting “√” mark in the bracket.

**Gender:** Male [] Female []

**Age Category (in year):** 20 to 29 [] 40 to 49 [  
30 to 39 [] 50 to 59 [] Above 59 []

**Your field of study:** Accounting [] Economics [  
Management [] Other (specify) \_\_\_\_\_

**Level of education:** Diploma [] Master's Degree [  
Bachelor's Degree [] other (specify) \_\_\_\_\_

**Years of experience as member of management.....:**

Less than 2 years [] From 6 to 10 years [  
From 2 to 5 years [] Greater than 10 years []

#### Section II: Items on determinants of the effectiveness of internal auditor

**Instruction:** Below are lists of statements pertaining to managements on internal audit effectiveness in your University. Please tick (√) the appropriate scale that indicates your opinion in the statements given below. The values of rating scales are 1 = Poor, 2 = Satisfactory, 3 = Good, 4 = Very good, 5 = Excellent

1. Internal audit develops a risk-based annual plan.

Poor [] Good []

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

2. Internal audit evaluate the effectiveness of internal controls and risk management of the organization.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

3. Internal audit activities are adding values at a low cost within your university

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

4. Internal audit activities meet the requirements of the IIA's Code of Ethics.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

5. Internal audit activities ensure economical, effective and efficient use of resources in \_\_\_\_\_state

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

6. Internal audit ensures the activity that is performed compliance with established policies, law, regulation and directives.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

7. Internal auditors perform their task in a professional and courteous manner.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

8. The audit reports provided by internal auditors of your University are reliable and significant.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

9. The internal audit team members have sufficient technical and IT knowledge to perform their role effectively.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

10. Internal auditors have the experience to address risk management problems within the University.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

11. The allocation of a sufficient budget to internal audit department to accomplish its Internal Audit Plan is \_\_\_\_\_

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

12. Independent assurance and controlling activities of internal auditors is \_\_\_\_\_

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

13. Internal auditors obtain unrestricted access to any information regarding your University is

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

14. Internal auditors' activity proactively examines important financial matters, risks, and internal controls.

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

15. Your internal audit department's follow-up and ensure corrective actions to be taken timely

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

16. Your university's hiring and man power allocation of internal auditors follows government rules and regulations

Poor [\_\_\_\_]                                  Good [\_\_\_\_]

Satisfactory [\_\_\_\_]                  Very good [\_\_\_\_]                  Excellent [\_\_\_\_]

## **Appendix C**

### **Interview Guide Questions for Internal Audit Directorate Directors**

1. Do you think that your internal audit department work things independently? Are they effective? Explain
2. How do you describe the competency of your internal audit staffs? Are they competent for the effectiveness of the IA activities?
3. How do you see and describe your university's management support?
4. Do you think that your internal audit work deserve its quality? How do you elaborate the impact of internal audit work quality to the effectiveness of internal audit in your university?
5. How do you describe your university's perception towards your internal audit's value?
6. How do you describe the organizational settings of your internal audit department in terms of budget, number of man power, accountability, transparency, etc.? Do you believe that the setting has impact for the effectiveness of IA activities? If not why?
7. In general, how do you see and elaborate the overall activities of your IA department with respect to the above points of view?

በቅድሚያ ገዢዎን መስዋዕት አድርገው ለቃለ መጠይቁ ስለተባበሩኝ አመሰግናለሁ

በተመረጡ የመንግስት ዩኒቨርሲቲዎች በውስጥ የኦዲት ስራ እንቅስቃሴው ጤታማነት ዙሪያ ተጽዕኖ ሊያመጡ የሚችሉ ምክንያቶችን ለማጥናት እና በጥናቱ ምውጤት ላይ ተመርኩዞ ምክረ ሀሳብ ለመስጠት ያስችልኩን ድመረ ጃየ መሰብሰቢያ መንገዶችን ዲ.ቃለ መጠይቅ ስለሆነ እና የሚሰጡኝ ማንኛውም መረጃ የሚያገለግለው ለአካዳሚክ ጥናት አላማብቻ ስለሆነ እንዲሁም ሚስጢራዊነቱ (በኮድ የሚሰራ ስለሆነ)

እና ለሌላ ላለ ስተኛ ወገን አሳልፎ ስለማይሰጥ ከዚህ ቀጥሎ ለማቀር ብሎ ጥያቄዎች ምላሽ ይሰጡኝ ዘንድ በማክበር እጠይቁታለሁ።

ጥያቄዎቹን ምእንደ ሚከተለው አቀርባለሁ

1. የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴ ያለ ማንም ጣልቃ ገብነት እና ተጽዕኖ መሰራት እንዳለበት ይታመናል። ስለ ዚህ ከላይ ከተነሱት ሀሳቦች አንዱ ያሉ በትንቢት ስራ የውስጥ ኦዲት አጠቃላይ እንቅስቃሴን እና ውጤታማነቱን እንዴት ይገልጻል? ቢያብራሩልኝ
2. በስራ ያሉትን የውስጥ ኦዲት ስታፍ የኦዲተርነት ብቃት እንዴት ይገልጻል? የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴን ውጤታማነት ለማድረግ አንዳርብ ቃት አላቸው ብለው ያምናሉ? ቢያብራሩልኝ
3. የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴን ውጤታማነት ለማድረግ አንዳር የዩኒቨርሲቲዎን ማናጅ መንገድ ጋፍ እንዴት ይገልጻል?
4. በእርሶ የሚመራውን የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴ ጥራት እንዴት ይገልጻል? የኦዲት ስራው ጥራት ከውጤታማነት አንጻር እንዴት ይገለጻል?
5. የዩኒቨርሲቲዎን የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴን ምንም ስጦት አንዳር የማናጅ መንገድን አመለካከት እንዴት ይገልጻል?
6. የዩኒቨርሲቲውን የውስጥ ኦዲት አደረጃጀት እና አወቃቀር ከባጀት፣ ከሰው ሃይል አቀጣጠር እና አመዳደብ፣ ከተጠያቂነት፣ ወዘተ አንጻር እንዴት ይገልጻል? አወቃቀሩ ለውስጥ ኦዲት የስራ እንቅስቃሴው ጤታማነት ተጽዕኖ አለው ብለው ያምናሉ? ካልሆነ ስለምን? ቢያብራሩልኝ
7. በአጠቃላይ ከላይ ከቀረቡት ጥያቄዎች አንዳር እና ሌላ ምንም ስጦት ላለ የዩኒቨርሲቲውን የውስጥ ኦዲት አጠቃላይ የስራ እንቅስቃሴን እና ውጤታማነቱን እንዴት ይገልጻል?

ለነበረን ቆይታ እጅግ በጣም አመሰግናለሁ!!

### Appendix D

## Document Review Guide/Check List for Internal Audit Department

No	Activity	Objective
1.	Review reports and other relevant documents issued by internal audit department and external auditors such as internal audit plans, programs, audit reports and other working papers	To collect information relevant to internal audit quality
2.	Review the organizational chart of the University	To establish the organizational position of the internal audit department with in the organization
3.	Review charters, legislations, rules of internal audit department	To collect information relevant and responsibility of the internal audit activity
4.	Review charters, legalizations, rules of auditors General	To collect information relevant to auditors general monitoring in Ethiopia



# APPENDIX E

## The Overall Evaluation of the Model

### D1. Diagnostic Test: Evaluation of Multiple Linear Regression Model

As aforementioned in the previous section, method of analysis, multiple linear regression model assumptions; model fitness test; significance of the independent variables as a whole; significance impact of individual independent variable; predictor model and its interpretations are presented and discussed.

#### D1.1. Evaluation of Multiple Linear Regression Model Assumptions

In order a multiple linear regression model shows the relationship between the dependent variable and multiple (two or more) independent variables and the validity of the inferences drawn from this model analysis depends on its assumptions being satisfied. In this regard, in order the analysis to be valid and the regression model explore the relations and examine impacts of the independent variables on the dependent variable, it should satisfy all the multiple linear regression model assumptions. Therefore, the assumptions were checked before running the regression analysis using SPSS version 20 software. The diagnostic test for the whole regression model is attached in the Appendix part. In this section, the evaluation of the assumptions of multiple linear regression model and model fitness test analyses are presented and discussed using the outputs of the SPSS.

**Normality assumption:** For any specific value of the independent variable, the values of the dependent variable are normally distributed.

There are several methods of assessing whether data are normally distributed or not. They fall in to two categories: statistical and graphical. In this study, in order to test the normality of the dependent data, Kolmogorov – Smirnov and Shapiro – Wilk tests of normality were used and conducted on SPSS. According to Field (2009), when the test result is non – significant ( $p > 0.05$ ) it shows that the distribution of the sample is not significantly different from a normal distribution.

**Table D<sub>1</sub>:Result of Tests of Normality**

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
IAEA	.198	95	.075	.946	95	.067

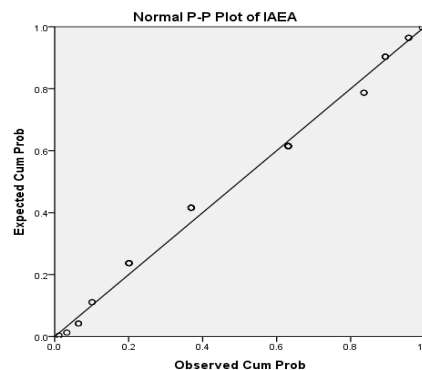
a. Lilliefors Significance Correction

Source: SPSS output, 2020

As it can be seen from Table D<sub>2</sub>, the p – values for both tests are greater than .05. This shows that the dependent variable – internal audit effectiveness values are normally distributed and hence normality assumption is met.

**Linearity assumption:** There is a linear relationship between the dependent variable and the independent variables. In other words, the value of Y is proportional to the independent variable X. Since the goodness of the model depends on how well it predicts Y, the linearity of the response(Y) and Predictors(X), p – p plot graph could be implemented. As indicated in (Torres – Reyna, 2007, p. 16), if the whole plots show 45<sup>0</sup> pattern, it indicates that the model seems to be doing a good job in predicting Y. As it can be seen in the graph given below, the plots go along the straight line, Figure D<sub>1</sub>, and the plots form 45<sup>0</sup> pattern. Therefore, the linearity assumption was met.

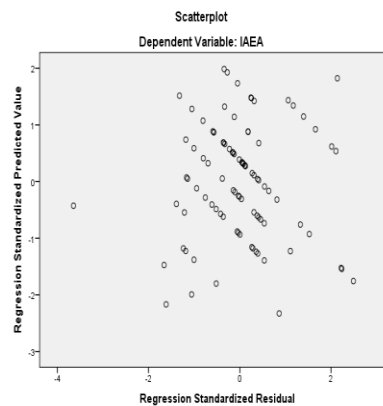
**Figure D<sub>1</sub>: Linearity p – p plot graph for IAE, Internal Audit Effectiveness**



Source: Survey Data of SPSS output, 2020

**Homoscedasticity (equal variance assumption):** For every value of the independent variable (X), the distribution of the dependent variables (Scores) must have approximately equal variability. To test this assumption regression standardized residuals and regression standardized predicted value plots were used, because, they detect model's lack of fitness and unequal variances. As indicated in (Abdel – Salam, 2008, p. 16/42; Torres – Reyna, 2007), any trends or patterns in the plots indicated lack of fitness and unequal variances which lead to a potential problem in the model. The scatter plot for internal audit effectiveness is given below in Figure D<sub>2</sub>.

**Figure D<sub>2</sub>: Scatter plot for homogeneity of variance for IAE**



Source: Survey Data of SPSS output, 2020

As can be seen from the above scatter plot, Figure D<sub>2</sub>, even though most plots are concentrated towards the upper central part, they do not form a certain pattern and there are some plots dispersed out from the center. This dispersion can show to some extent the homogeneity of the variances. Meaning, nearly it satisfied the equal variance assumption.

**Non – multicollinearity assumption:** The independent variables are not very strongly correlated. That is, the predictor variables should not have a strong relationship with each other. Multicollinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is nearly linear combinations of the other independent variables (Keith, 2006 cited in plots, 2011).

**Table D<sub>2</sub>: Non – Multicollinearity test of the Independent Variables**

<b>Independent Variables</b>	<b>Tolerance</b>	<b>VIF</b>
Independence of internal auditors(INDIA)	.797	8
Competence of internal audit staffs(COMIAS)	.761	5
Management support(MGTS)	.748	5
Internal audit work quality(IAWQ)	.728	4
Perception of mgt towards the IAs value(PMTIAV)	.798	7
Organizational settings(ORGS)	.752	5
	.763	6

Source: Author construct from Survey Data of SPSS output, 2020

The six independent variables in the model should not be highly correlated. To test this assumption the researcher used the more precise approach, assessing the tolerance and its reciprocal values (VIF, variance inflation factor) in the output results of the regression analysis for model fitness. The tolerance value is the indication of the percent of variance in the predictor that can't be accounted for by the other predictors, very small value indicated that a predictor is redundant. If the tolerance value of each predictor is greater than 0.10, then it indicates the non – multicollinearity for each predictor if not it shows the existence of multicollinearity. As (Diem Ngo, 2012, p.9; Pallant, 2005, p. 150; Torres – Reyna, 2007, p.21) showed that, if the VIF value of each predictor is less than 10, then it indicates the non – multicollinearity of the predictors if not it suggested a problem. When such situation, tolerance less than 0.10 and VIF is greater than 10, is happened the regression model estimates of coefficients became unstable and the standard errors for the coefficients could get inflated. In other words the model loses its statistical validity. As it can be seen in the above Table D<sub>2</sub>, there was no multicollinearity amongst the independent variables INDIA, COMIAS, MGTS, IAWQ, PMTIAV, and ORGS in the model for the internal audit effectiveness. Therefore, the non – multicollinearity assumption was met.

Thus, as the four model assumptions test indicated in the above output results of the SPSS and discussion all assumptions were met and hence the multiple regression model for the internal audit effectiveness for the selected universities with the six independent variables was ready to be tested for model fitness test.

## **D1.2. Model fitness and Significance of the independent Variables as a Whole**

For the purpose of determining the extent to which the explanatory variables explain the variance in the dependent variable, multiple linear regression model is useful. So, in order such model to be useful for prediction purposes, it should pass model fitness test. Thus, model evaluation and analysis was employed. Moreover, the coefficient of correlation and the test of its significance, i.e., to test whether there is a significant correlation between the explained variable (effectiveness of internal audit) and the six independent variables conducted. The results of the analyses are evaluated and narrated below.

### **Model Fitness Test**

Model fitness test is a statistical test to check whether the regression model is fit for the data or not. To test this, the overall steps for testing multiple linear regression model, F – test analysis of variance [ANOVA] for the overall model fitness test and t – test for the significance of an individual coefficients in the regression model with 5 % level of significance were used as (Alemzewed, 2019; Arefayne, 2019 and Mwangi, 2017) did. Therefore, the significance of the independent variables as a whole is summarized in Table D<sub>3</sub> below.

### **Significance test of the coefficients as a whole**

#### **Model Hypothesis to be tested:**

$H_0: \beta_i = 0$  Means all the six determinant factors of internal audit effectiveness  $X_i$  &  $Y$  are not linearly related.

$H_1: \beta_i \neq 0$  [At least one of the  $\beta_i$  's is different from zero for  $i = 1, 2, 3, 4, 5, 6$ ] – Means  $X_i$  &  $Y$  are linearly related with  $\alpha = 0.05$ , level of significance

**Decision Rule:** If  $1 - p > 0.95$ , then it shows at least one of the coefficients in the model is significant. Reject  $H_0$  and conclude that, the model fit the data (i.e. the model is useful for prediction purposes, where  $p$  = the sig. value in the output.

If  $1 - p < 0.95$ , then this shows all the coefficients in the regression model are zero. In this case the null hypothesis should be accepted. Conclude the model does not fit.

Multiple linear regression model does a good job of describing the relationship between the dependent variable (internal audit effectiveness) and the independent variables (determinant factors), if large proportion for sample coefficient of determination,  $R^2$ , be ensured. Such a test is

accomplished by the means of analysis of variance (ANOVA) which enables us to test the null hypothesis of no linear relationship between X and Y discussed as follows:

**Table D<sub>3</sub>: ANOVA output part I: IAE with the Six Variables**

ANOVA <sup>a</sup>						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.044	6	.674	31.943	.000 <sup>b</sup>
	Residual	1.853	88	.021		
	Total	5.897	94			
a. Predictors: (Constant), INDIA, COMIAS, MGTS, IAWQ, PMTIIV, ORGS						
b. Dependent Variable: IAE						

Source: Survey Data of SPSS output, 2020

As it can be seen from the above Table D<sub>3</sub>, the F calculated value with its degrees of freedom (6, 88) for internal audit effectiveness as a whole is .000 < 0.005 implies that with the confidence interval (1 -  $\alpha$ ) very close to 100%, where  $\alpha$  = sig. value. Therefore, it could be said that at least one of the coefficients  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$  was significant for the model – internal audit effectiveness. In other words, the variable Y (IAE) was better if it was a function of at least one of the variables  $X_1, X_2, X_3, X_4, X_5, X_6$  (the six determinant factors for the effectiveness of Internal Audit) rather than only with  $\beta_0$ . Therefore,  $X_i$  and Y were linearly related and that the model was fit the data. Hence, the regression model was fit and could predict the impact of the six determinant factors on the effectiveness of internal audit.

**Table D<sub>4</sub>: Model Summary**

Model Summary <sup>b</sup>							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.857 <sup>a</sup>	.735	.717	.14567	.735	31.943	.000

a. Predictors: (Constant), ORGSA, MG TSA, COMIASA, INDIAA, PMTIAVA, IAWQA

b. Dependent Variable: IAEA

Source: Survey Data of SPSS output, 2020

In Table D<sub>4</sub> above, the R square value indicated that the percentage of the variation of the dependent variable (internal audit effectiveness) is directly attributable to the independent variables. As it can be seen from the above Table D<sub>4</sub>, the R square value for internal audit effectiveness is .735 which means the model explained 73.5% of the variance in the

effectiveness of internal audit in the selected universities. Therefore, as Pallant(2005) indicated that, the explaining capacity of the model with the six predictor variables is good.

The Adjusted R square value tells us that, the most useful measure of the success of the model, which is better than the R square value. Because R square value tends to somewhat over – estimate the success of the model when applied to the real world, and also the Adjusted R square value takes in to account the number of variables in the model and the number of observations (participants – in this study the selected universities) upon which the model is based on (Diem & Puente, 2012). Therefore, the largest adjusted R square value indicates the best fit of the model. Based on this, the adjusted R square value for the effectiveness of internal audits is .717. So, one can say that the internal audit effectiveness model, with the six determinant factors, had accounted for 71.7% of the variance in explaining the internal audit effectiveness.

### Significance Test of each Regression Coefficient

To identify which regression coefficient was significant and had greater/est contribution for the model, the output of the coefficients table was used. The test of significance was conducted by the t – p – value.

**Table D<sub>5</sub>: Results of the Significance test of each regression coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations Zero – order
		B	Std. Error	Beta			
1	(Constant)	-.465	.372		-.976	.476	
	INDIA	.356	.065	.351	4.938	.000	.654
	COMIAS	.301	.096	.233	3.213	.004	.617
	MGTS	.083	.054	.152	1.293	.201	.518
	IAWQ	.211	.047	.257	3.131	.001	.459
	PMTIAV	.079	.093	.119	1.357	.383	.498
	ORGS	.235	.077	.239	2.848	.005	.441

a. Dependent Variable: IAEA

Source: Survey Data of SPSS output, 2020

From the above Table D<sub>5</sub>, the p - values (under the sig. Column) for the MGTS and PMTIAV are greater than 0.05 indicated that their level of confidence, (1 – p)×100% are much lower than 95%. For the present data set, the test result (p = .201 and .392) suggested that an

alternative model might be applied to the data. But the main objective of regression analysis is to find the best set of parameters. The MGTS and PMTIAV determinant factor coefficients were significant for the model. But, the remaining four coefficients were significant for the model.

**Table D<sub>6</sub>: The Bivariate Correlation among the Study Variables**

		Correlations						
		IAEA	INDIAA	COMIAS A	MGTSA	IAWQA	PMTIAVA	ORGSA
IAEA	Pearson Correlation	1	.654**	.617**	.518**	.459**	.498**	.441**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	95	95	95	95	95	95	95
INDIAA	Pearson Correlation	.654**	1	.454**	.345**	.296**	.242*	.387**
	Sig. (2-tailed)	.000		.000	.001	.004	.018	.000
	N	95	95	95	95	95	95	95
COMIASA	Pearson Correlation	.617**	.454**	1	.366**	.258*	.290**	.291**
	Sig. (2-tailed)	.000	.000		.000	.011	.004	.004
	N	95	95	95	95	95	95	95
MGTSA	Pearson Correlation	.518**	.345**	.366**	1	.644**	.242*	.004
	Sig. (2-tailed)	.000	.001	.000		.000	.018	.967
	N	95	95	95	95	95	95	95
IAWQA	Pearson Correlation	.459**	.296**	.258*	.644**	1	.001	-.124
	Sig. (2-tailed)	.000	.004	.011	.000		.995	.231
	N	95	95	95	95	95	95	95
PMTIAVA	Pearson Correlation	.498**	.242*	.290**	.242*	.001	1	.601**
	Sig. (2-tailed)	.000	.018	.004	.018	.995		.000
	N	95	95	95	95	95	95	95
ORGSA	Pearson Correlation	.441**	.387**	.291**	.004	-.124	.601**	1
	Sig. (2-tailed)	.000	.000	.004	.967	.231	.000	
	N	95	95	95	95	95	95	95
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: Survey Data of SPSS output, 2020

**Note that:** As an alternative approach to non – Multicollinearity assumption test done in D1:1 using tolerance/VIF, that is checking the multiple correlation matrix of SPSS output results: as a general rule of thumb, predictor variables can be correlated with each other as much as 0.8 before there is cause for concern about multicollinearity (Perry. et al.,2004). But here, in the

above Table D<sub>6</sub>, a pair wise correlation is below .80 which indicates the absence of the problem of multicollinearity.