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Dimensions of Audit Quality: Evidence From Eritrea

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Abstract

Barely any research is presented concerning audit quality in Eritrea. Hence, as an icebreaker the aim of this paper is to investigate the fundamental audit quality factors and their impact on overall audit quality. Data on perception of audit quality was collected by a survey questionnaire including 41 audit variables from 119 audit clients. After categorizing the attributes into technical and functional sets, Factor Analysis was executed to identify the relevant factors. To further examine robustness and significance of the factors identified multiple regression was applied, after the data was tested for its assumptions. From the empirical results using Factor Analysis we documented four factors relating to technical audit quality and six factors associating with functional audit quality. We also justified the reliability and validity of the ten factors identified. Subsequently, the regression analysis depicted a positive and statistically significant relationship for all the ten technical and functional factors, except two. This supported our three hypotheses. With the consistent and higher rank of Eritrea on Corruption Perception Index, the originality and value of the findings can be potentially helpful to policy makers of control and audit, Eritrean audit firms and the body of knowledge in auditing concerning Eritrea.

Keywords: Audit quality, Audit clients, Technical and functional qualities, Corruption, Eritrea

1. Introduction

There has been a number of studies on audit quality, its measurement and the factors that affect it. However, there is no universally accepted definition of audit quality or consensus on audit quality measurement (Vanraak and Thürheimer, 2016; Knechel, Krishnan, Dunakhir, 2014; Pevzner, Shefchik, & Velury, 2013 Duff, 2004). Most researchers define audit quality using DeAngelo's (1981) definition which is 'market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach.' This definition is confronted to a criticism as it focuses on the quality attributes of the audit outcome ignoring the audit input and audit process attributes. Researchers argue that those two technical part of competence and independence do not represent the entire field of audit quality attributes (Beattie, Fearnley and Hines, 2013; Duff, 2004). Another study by DeFond & Zhang (2014) argued this definition simply refers to detection and reporting of technical compliance with GAAP as opposed to this, quality auditors are expected to also realize if financial statements are presented reliably.

For audit firms operating in competitive environment, it is better to understand the way both preparers and users of financial statements perceive audit quality, because any gap to the desire of both the preparers and users can be fulfilled and they can also achieve better in their audit quality (Carcello, Hermanson, & McGrath,1992). Since heterogeneity of users is unique feature of auditing, there is complexity in determining what clients think as quality (Rasmussen & Jensen, 1998). Researchers have been persuaded for years that audit firms service quality was determined by their size, but a study by Iskandar, Rahmat & Ismail (2010) proved that Big 4 or non-Big 4 can provide quality that exceed client's expectations.

This study's main objective is to identify the audit quality dimensions based on technical and functional dimensions. This will be done based on audit clients' perception on the technical and functional audit quality attributes. Technical dimension mainly includes competence and independence of the auditor and functional dimension focuses on quality service and auditor-client relationship. After identifying the relevant factors, the paper will ascertain their relationship and significance to overall audit quality.

1.1 Statement of Problem and Significance of the Study

The focal problem is the Corruption Perception Index (CPI) of Eritrea. Since 2012 Eritrea is ranked consistently higher in the corruption perception index. Several researches (Thompson & Shah, 2005; Wilhelm, 2002) challenge the validity of this index. Even the indexing institution admit these challenges and issues in its methodology (Transparency International, 2020). Although the validity of the Eritrean index demands a separate study, the consistent and higher ranking attracts audit research. Hence, the first question that may spark is where were the auditors? Simultaneously, a deluge in audit quality studies are expected to help in identifying and mitigating the problem. However, as per our literature investigation there has been no any academic research about Eritrean audit quality. Hence, it justifies this investigation.

The significance and importance of this study focus on these; with the consistent and higher rank of Eritrea on Corruption Perception Index, the originality and value of the findings can have theoretical and practical entailments to provide information that is potentially helpful to policy makers of control and audit. Audit firms can maximize their value by understanding the dimensions their clients weigh higher. Despite audit quality being in the literature for many decades there has been a gap in this body of knowledge regarding Eritrea. Thus this paper can fill a certain part of this gap and be a starting point for further researches.

2. Literature Review

2.1 Introduction

Researches discover the role of external audit on corruption has been overlooked not only on the prior literatures but also in the audit standards (e.g. Kassem & Higson, 2016). Auditors are also continuously blamed for not discovering corruption in an auditee. An example of scandals includes, Enron (2002), WorldCom (2002), Freddie Mac (2003), Satyam (2009) and FIFA (2015) (Klarskov, 2019; Beattie et al., 2013; Nguyen, Le, Luu, Nguyen & Hoang, 2019). However, auditing is believed to be one of the eight pillars of a national integrity system, which can preserve corruption (Dye and Stapenhurst, 1998). Auditors are expected to play a significant role in combating corruption as they have a key position to access an organization's report and its scope is increasing in society (Klarskov, 2019). Hence, the demand for quality audit is indispensable for developing countries which often score higher CPI. Public sector auditing tends to accept the responsibility of auditing in fighting against corruption while private audit firms abandoned its significance. This could add a new area of service to the auditing profession to detect and/or prevent corruption.

2.2 Audit Measurement

Audit quality has been measured using different mechanisms, those deployed in previous studies include; direct and indirect measure (audit tenure, audit firm size, industry expertise and audit fee); Source differentiation (cross country difference and cross-city differences); Output based (audit opinion and audit reports), Process based (audit environment) and Input based (auditor perception and compulsory audit tendering); Organizational Aspects (audit firm & audit team).

These measurements are highlighted below;

Direct evaluation methods are checking if financial statement comply with GAAP, senior auditors' evaluation of juniors' audit work quality, desk review, audit client liquidation and Securities and Exchange Commission financial reports performance. A study on relationship between client size and compliance with financial reporting requirements (GAAP) by Krishnan and Schauer (2000) found that audit client size has a direct relation with adherence to financial reporting requirements. Another study by Geiger and Raghuandan (2002) assessing audit quality based on issuing going concern opinion and bankruptcy found going concern was not issued at the first years but in later years. However, longer years' relationship between auditee and audit firm is inadvisable as it jeopardizes audit quality.

Indirect measurements of audit quality include; size of audit firm, audit tenancy, industry expertise, audit price, economic reliance, firm goodwill and cost of capital (Chadegani, 2011). Audit quality nature of multifaceted and observability forced past accounting researches to give several descriptions for audit quality. Several studies base on audit firm size to demonstrate audit quality for the reason that bigger size firms have many customers, thus having higher motivation to provide greater quality. Apart from that they could face loss of customer and goodwill (Habib et al., 2014). DeAngelo (1981) also supports this from another angle stating capacity of audit company displays the audit quality; this is based on big audit firms having more assets. There are also other empirical studies that associate audit quality according to their audit firm size that audit quality and audit firm size have positive relationship (DeAngelo, 1981; O'Keefe & Westort, 1992; Colbert & Murray, 1995; Francis, 2004;). In contrast to those studies, a study by Iskandar et al., (2010) proved that Big 4 or non-Big 4 can provide quality that exceed client's expectations.

Auditor's tenancy might have indirect relationship with audit quality as tenured auditors might capitulate their freedom for close relation with clients (Ghosh & Mood 2005). Contrarily, broad experience of specific industry's audit risks can also be developed for audit firms having numerous clients in the same line of business (Wooten, 2003). Choi, Chanson, Kim & Zang (2010) also investigate if there is significant relationship between audit fee and audit quality. The outcome portrayed that audit quality is insignificantly related with irregular audit payment. In spite of this there has been critics to most studies who consider the two assumptions: audit firm render same level of audit quality to its different clients and audit quality is same on one group of clients over multiple years. There is no way for audit quality to be constant over different clients and various period of time (Clarkson & Simunic, 1994).

A number of studies have used output (audit opinion and audit reports.), process (audit environment) and input (auditor perception and compulsory audit tendering) to measure audit quality. Studies based on output include Carey & Simnett (2006); Geiger & Rama (2006). The former proved auditors' report is directly associated with the increment in tenure and the later examined whether Big 4 made more audit report errors than non-Big 4 firms and found out Big 4 has lower audit report errors.

Few studies used process to quantify audit quality. Maijoor and Vanstraelen (2006) studied the influence of audit environment and presence in international capital markets on earning management. They documented an audit environment with tight control reduces misreporting, but internationalization is insignificant. And a study by Duff (2004) states auditing profession attempts to depict environment friendly implications, understanding the advantages and applying the analysis of political, economic, social, and technological effects on providers of audit services which forces audit firms to change. Beside auditor perception and compulsory audit tendering there are inputs to audit quality like auditing standards, auditor know-how and talent, moral values and attitude. Based on these inputs a study by Duff (2004) exhorts audit firms to employ individuals with high technical and personal qualities in order to perform quality audit.

Various studies used organizational aspects, audit firms or teams. Sun and Liu (2011) confirmed there is a difference in quality of audit among Big N and non- Big N firms. Big N firms are more successful in protecting misreporting for firms with higher bankruptcy possibilities. And Carcello et al. (1992) concluded audit team features were assumed to be more significant for quality of audit compared to the audit firm in large. Another research also found similar results, where audit team characteristics are very significant rather than audit company (Schroeder et al., 1986).

Business ethics studies revealed that behavior can be positively associated to a person's moral orientation (Rayburn & Rayburn, 1996). Audit partner's professionalism, education and expertise, moral values, and individual merits including the training provided to audit human resource are significant factors that affect auditors and audit quality.

The degree of meeting customer anticipation on the service provided is the measure of service quality. A firm's long term continuity depend mostly on the service quality provided. Thus, achieving its desired position demands greater service quality relative to its competitors. Customer or client allegiance and earnings maximizations are the results of these and other influential factors. So measuring and controlling customer satisfaction is the main strategy of service oriented firms to fulfill the desired needs of their clients and achieving or surpassing their expectations (Ismail, Haron, Ibrahim & Isa, 2006).

2.3 Perceived Audit Quality

The perception of audit clients is the method used in this study. Thus, we emphasis below on reviewing the body of knowledge with similar methodology. A number of studies have scrutinized the perceived audit quality from different angle of study. Such as; studies among various group of stakeholders, Big 5 / local audits (Chen, Shome & Su, 2001); preparers/

auditees (Craswell, Francis, & Taylor, 1995); audit committee chairpersons (Schroeder, Solomon & Vickrey, 1986). Carcello, et al., (1992) compares audit quality perception of financial statement preparers, auditors and external users. Studies based on external user perspective (Rasmussen and Jensen, 1998; Wally-Dima, Mbekomize and Tobedza, 2016); Auditors' and Clients' Perspectives was compared by Dunakhir (2014); perceptions of auditors' on joint audit (Barghathi, Ndiweni and Lasyoud, 2020), perceptions of junior level auditors (Brown, Gissel and Neely, 2016); Perceptions of Auditors (Persellin, Schmidt, and Wilkins, 2014). Study based on experience: the effect of audit partner pre-client and client-specific experience with audit quality and perceived quality was examined by (Chi, Myers, Omer & Xie, 2016). All these studies agree that there are perception differences between stakeholders but ignored to consider user heterogeneity except the study by Carcello et al. (1992) who compared auditors, preparers, and external users view on audit quality.

2.4 Technical and Functional Qualities

Scholars identified and used two main dimensions to quantify audit quality; technical and functional qualities (Arens, Elder, Beasley & Hogan, 2014; Baotham, 2009; Duff, 2004; Nagata, Satoh, Gerrard, & Keytomaki, 2004; Lennox, 1999; Malone and Roberts, 1996; etc.). Technical quality and functional quality are components of service quality. Technical quality assesses what an auditor tries to achieve that a customer gets from the profession and it focuses on the result and magnitude of the service. Functional quality bases on an opinion about the customer perceptions about the service rendered and it is a measure of the service provided. Nagata et al., (2004) and Grönroos (1984) emphasize the significance of functional quality over technical quality, even though the fulfilled needs of the customers were met by the technical quality. A study by Parasuraman, Zeithaml & Berry (1985) also suggested functional dimension such as reliability, responsiveness, empathy etc., highly affect the perception of clients on perceived audit (service) quality.

In contrary Arens et al. (2014) argue a competent and independent auditor is necessary in order to deliver quality audit by fulfilling the established criteria in consistency with the evidence collected. Baotham (2009) also studied the relationship between independence of auditor, audit quality and reliability with sustainability of audit firms. The outcomes of the study implied a positive relationship among quality of audit, reliability and auditor independence.

2.5 Hypothesis Development

Technical quality of an auditing service refers to the auditor's competence to deliver a quality audit service. A number of studies investigated if there is relationship between technical quality dimension and perceived audit quality (e.g. Grönroos 1984; Nagata et al., 2004; Arens et al., 2014; etc.). All studies agreed that technical quality is a compulsory for an audit service to be performed by a competent auditor. A study by Duff (2004) also suggests audit firms to hire competent and personally skilled auditor to maintain their competitiveness by executing quality service. Based on these previous studies we hypothesized:

H_1: Technical audit quality factors have a direct and significant relationship with perceived overall audit quality.

While the audit team performs its professional work (technical factors) it will reveal its quality on how it handles its work, that is the functional service rendered. Thus the auditee can easily witness their excellence or the reverse. Over the course of four decades several researches consistently articulated the importance of functional audit qualities on the overall quality of the audit work. (Parasuraman et al. 1985; Lehtinen & Lehtinen 1991; Dassen 1995; Morton 1998; Arens et al., 2014). Therefore, we hypothesize:

H_2: Functional audit quality factors have a direct and significant relationship with perceived overall audit quality.

Independence of auditors is a unique feature of audit service than other forms of services. Therefore, it is not only appreciated but also highly demanded of auditors. Almost all the studies related to audit quality either take independence as one of their factors or have discussed at least in their literature part (e.g. Baotham 2009; Arens et al., 2014; etc.). This signals it is the main pillar of audit service and a unique feature to this kind of service. Most studies agreed on its significant and positive effect on perceived audit quality. Therefore, we hypothesize:

H_3: Independence has a direct and significant association with audit quality

These three hypotheses are the primary ones. After Factor Analysis we will acquire several audit factors. To further investigate the significance of these factors regression analysis will be used. Hence, the factors will be our secondary hypotheses.

3. Methodology

The methodology is based on the research's design. The two main audit quality dimensions (technical and functional) evolve from it. These two are used to generate the 41 audit quality variables used to form the questionnaire. To identify the main dimensions Factor Analysis is used. To further diagnose the significance of the factors and test the hypotheses Multiple Regression is run, after the data was examined for regression assumptions.

3.1 Data Collection and Questionnaire

Data collection applicable for the study is gathered through both primary and secondary data. The primary data was gathered through questionnaires and secondary data was collected from previous researches relevant to this study. The questionnaire is highly structured and self-administered to audit clients. The questionnaire is designed to gather data on the perceptions of audit clients about their auditors' performance with regard to the 41 audit quality attributes generated from several previous studies (Rasmussen & Jensen, 1998, Schroeder et al., 1986; Ghebremichael, 2018; etc.). In the survey, respondents were asked to assess the overall quality of their auditors' (audit firms) service. This was captured with a Likert Scale extending from strongly agree (5) to strongly disagree (1).

3.2 Sample Size and Response

In undertaking this study our population are organizations that are audited through all government and private, large and small audit firms. The population of the audit clients is approximately around 200 firms. Excluding those in other Regions due to distance, we administered questionnaires to all the firms in Central Region (Asmara City). These are 150 questionnaires and 119 usable questionnaires were collected. These include state and privately owned organizations that are audited by governmental and private, large and small audit firms.

3.3 Data Analysis

We used quantitative data analysis for this study. The techniques applied are Factor Analysis and Multiple regression.

3.3.1 Factor Analysis

Exploratory Factor Analysis (EFA) is among the numerous multivariate statistical methods. It is used to summarize numerous data to manageable set of factors so as to yield informed inferences EFA can also be abstracted as a multivariate multiple regression process where the factor serves as an explanatory and the measured variables function as explained (Watkins, 2021).

Factor Analysis model

$\mathbf{X} = \boldsymbol{\mu} + \mathbf{L}\,\mathbf{F} + \mathbf{e}$

where **X**= the p x 1 vector of measurements,

μ = p x 1 vector of means,

L = p × m matrix of loadings,

F = m × 1 vector of common factors,

e = p × 1 vector of residuals.

p represents the number of measurements on a subject or item and m represents the number of common factors. **F** and **e** are assumed to be independent and the individual F's are independent of each other. The mean of **F** and **e** are 0, Cov(F) = I, the identity matrix, and Cov (e) = Ψ, a diagonal matrix.

the p × p covariance matrix of the data, **X**, is calculated as follows:

$\text{Cov}(X) = \mathbf{L}\,\mathbf{L}' + \boldsymbol{\Psi}$

where **L**= p × m matrix of loadings,

Ψ= p × p diagonal matrix. The i^{th} diagonal element of **L L'**, sum of squared loadings, the i^{th} communality.

3.3.2 Regression Models

Model enables us to identify the significance of factors identified in influencing the dependent variable and to assess the outcome of the hypotheses developed. In our study 3 models are developed to test the primary hypotheses through the results of secondary hypotheses. The first model apply technical factors followed by functional factors and at last

independence factor alone. The regression models are:

$$Y = c + b_1WES + b_2DR + b_3AE\&I + \varepsilon \quad (1)$$

Where:

Y = Overall audit quality average score

c = Constant;

WES = Wrongdoings Exposure to stakeholder factor score;

DR = Detecting and reporting factor score;

AEI = Auditor experience and integrity factor score

$$Y= c + b_1IE + b_2CQ + b_3ACC + b_4PBH+ b_5RCN+ b_6MS + \varepsilon \quad (2)$$

Where:

Y= Overall audit quality average score

c = Constant;

IE = Industry Expertise factor score;

CQ = Commitment to Quality factor score p;

ACC = Accessibility factor score p;

PBH = Professional Business handling factor score;

RCN = Responsive to Client Needs factor score;

MS = Management Skills factor score

$$Y = c + b_1Avg.Ind + \varepsilon \quad (3)$$

Where:

Y = Overall audit quality average score

c = Constant;

Avg. Indp = Average Independence factor score;

3.4 Research Design

The figure below demonstrates the way the independent factors associate with the dependent variable. The clients' response on the specific explanatory attributes will be captured in to factors (Factor Analysis) and the factors' association with quality of audit will be tested (Regression Analysis).

Figure 1. Research Design

4. Results

4.1 Factor Analysis

EFA was conducted on the 41 variables in order to get concise number of factors. Ten Factors constituting four technical and six functional are extracted. These are factors with more than 1 eigenvalue. Bartlett's test of Sphericity and KMO-MSA values indicate the suitability of the variables for factor analysis. The statistical measures of these two are given in table 1and 3. The technical and functional factors are shown in the table 2 and 4 respectively.

Technical Quality

Table 1. suitability of the variables (attributes) for factor analysis-technical quality attributes

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's Test of Sphericity	Approx. Chi-Square	2182.920
	Df	231
	Sig.	.000

- Wrongdoings Exposure to stakeholders

This factor depicts the variables that audit clients perceive to identify the wrong doing exposure factor. The variables included are regarding the auditors' role in revealing detected errors and irregularities in the auditees financial information to the public. This factor has 5 variables which include reporting financial errors, going-concern problems, management fraud, deficiencies, and illegal acts to stakeholders. The variables in this factor are highly

reliable with alpha measure of 0.81.

- Detection and reporting to Management

This represents the auditor's role in the detection and reporting of fraud and illegal acts to the management. The variables included are detecting and reporting of going concern problems, financial errors, illegal acts, internal control deficiencies to management. The variables are highly reliable with 0.84 alpha measure.

- Auditor experience and integrity

This factor embodies the auditor's extensive knowledge and capability of detecting and reporting of going concern problems and illegal acts. It also represents the knowledge of the auditors to the financial reporting and audit. The five variables of this factor have high factor loading.

- Independence

The variables in this factor are only two as opposed to other factors with at least 3 variables. These are Auditor's independence from management and independence from stakeholders, which are highly reliable with alpha measure of 0.79. Though independence is related to technical quality, it's effect is tested separately in our regression analysis. This is due to its significant effect on overall audit quality and its uniqueness in audit service.

Table 2. Technical factors solution for performance-only variables

Factor Variable	Factor Loading	Cronbach's Alpha	Eigenvalues Test	Cumulative Variance
1.Wrongdoings Exposure to stakeholders				
Reports financial errors to stakeholders	0.859	0.81	9.242	28.955
Report going-concern problems stakeholders	0.856			
Report management fraud to stakeholders	0.837			
Report deficiencies to stakeholders	0.662			
Report illegal acts to stakeholders	0.645			
2.Detecting and reporting				
Report going concern problems to management	0.850	0.836	2.42	41.699
Report financial statement errors to management	0.843			
Report illegal acts to management	0.812			
Report deficiencies to management	0.796			
Detect management fraud	0.761			
Detect deficiencies in internal control	0.757			
Detect errors in financial statement	0.720			
3.Auditor experience and integrity				
Detect going-concern problems	0.793	0.753	1.669	54.339
Integrity	0.773			
Detect illegal acts	0.773			
Knowledge to audit	0.658			
Knowledge to financial statements	0.650			
4.Independence				
Independent of management	0.775	0.794	1.443	66.938
Independent of stakeholders	0.666			

Extraction Method: Principal Component Analysis.

Rotation Method: Equamax with Kaiser Normalization.

Functional Quality

Table 3. suitability of variables (attributes) for factor analysis-functional quality attributes

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.731
Bartlett's Test of Sphericity	Approx. Chi-Square	988.779
	Df	171
	Sig.	.000

- Industry Expertise

The variables in this factor are related to audit firms' knowledge about the clients' business and regulatory issues. Respondents perceive the audit partners should have greater knowledge of the business in order to actively participate in the audit and to inspect accounting concerns that can affect the clients' business (Behn, Carcello, Hermanson, & Hermanson, 1997). The variables comprised in this factor are 3 strongly reliable variables with alpha size of 0.90. They are; knowledge of internal and external factors of the company, regulatory knowledge with regard to the company, and industry specialization.

- Commitment to Quality

This is concerned with the clients' perceptions of the auditor's proficiency in preparing error free and up to date working papers. The variables included in this factor pertain to the auditor's accuracy and dependability with regard to working papers and auditor effectiveness. It includes 3 variables which are highly reliable with alpha of 0.80.

- Accessible

This factor signifies the auditor's convenience for a discussion with the clients' management. It includes 3 variables; accessibility to management, accessibility to stake holders, and provision for private meeting. These variables are one of the highly reliable factors with alpha measure of 0.75.

- Professional Business Handling

This refers to the ability of an audit firm to professionally handle client business which in turn affects its reputation. This factor includes 3 variables; good reputation, express him/herself clearly and reasonable audit fee. The variables in this factor yield lowest reliability measure with alpha measure of 0.67.

- Responsive to Client Needs

The variables comprised in this factor are three. Clients gauge responsiveness to stakeholders, management needs and in handling company service problems as the auditor's functional quality. This factor yields slightly lower alpha measure of 0.67 compared to greater than 0.70 rule of thumb.

Table 4. Functional factors solution for performance-only variables

Factor Variable	Factor Loading	Cronbach's Alpha	Eigenvalues Test	Cumulative Variance
1. Industry Expertise				
Knowledge of internal and external environment	0.87	0.897	6.178	13.846
Regulatory knowledge	0.862			
Industry specialist	0.82			
2. Commitment to Quality				
Error-free working paper	0.868	0.802	2.296	26.413
Up-to-date working paper	0.845			
Excellent audit effectiveness	0.514			
3.Accessibility				
Accessible to stakeholders	0.727	0.745	1.56	38.507
Provision for private meeting	0.719			
Accessible for management	0.714			
4.Professional Business Handling				
Good reputation	0.813	0.67	1.256	50.388
Express him/herself clearly	0.768			
Reasonable audit fee	0.589			
5. Responsiveness to Client Needs				
Responsive to stakeholders	0.728	0.676	1.167	61.686
Responsive in handling company service problems	0.648			
Responsive to management needs	0.58			
6.Management Skills				
Participates in audit execution	0.789	0.855	1.025	70.954
Participation in audit planning	0.703			
Service except financial statements audit	0.519			

Extraction Method: Principal Component Analysis.

Rotation Method: Equamax with Kaiser Normalization.

- Management skills

The variables comprised in this factor are related to the audit firms' management skills regarding client's company matters. This factor reflects combination of auditor participation in audit planning, audit execution, and providing services other than financial statements audit. All variables are highly reliable with alpha size of 0.86.

The two main dimensions of this study are the technical and functional factors including the factor independence as a distinct characteristics of audit service. As per the results functional factors comprises approximately 71% of the total exploratory power of the model and technical audit quality factors 67% which is greater than 60% considered adequate for social science factor analysis (Hair, Anderson & Tatham, 1987). Thus the audit clients perceive these ten are the main factors that affect and determine audit quality.

4.2 Regression Analysis

Before Regression analysis we test the data for normality using Kolmogorov-Smirnov and Shapiro-Wilk tests. Both tests provide an insignificant result, implicating the data is normally distributed. We also test the data for Heteroscedasticity with Breusch-Pagan test. The P value is insignificant, representing the errors are homoscedastic. The independent variables have VIF of less than 10 and tolerance of greater than .1, thus there is no multi collinearity problem in the model. To test for the existence of autocorrelation, we employed the popular Durbin-Watson test. The result is very close to two implying no autocorrelation problem. Thus, we proceed to run the models after the data was tested for multiple regression assumptions.

Regression Results

Table 5. Technical regression Results

Coefficients[a]

Variables	Coeff.	Value	Std. Error	t	P- value
constant	b0	1.817	0.064	28.35	.000
WES	b1	0.029	0.064	0.45	0.653
DR	b2	0.184	0.064	2.88	0.005**
AEI	b3	0.129	0.064	2.012	0.047*

a. Dependent Variable: Overall Audit Quality.

* = Significant at .05 level; **= significant at .01 level

Source: Field Survey, 2023. R^2 =0.63.

Table 6. Functional Regression Results

Coefficients[a]

Variables	Coeff.	Value	Std. Error	t	P- value
constant	b_0	1.82	0.062	29.409	.000
IE	b_1	0.199	0.062	3.217	.002**
CQ	b_2	0.24	0.063	3.824	.000**
ACC	b_3	0.157	0.062	2.55	.012*
PBH	b_4	0.425	0.062	6.839	.000**
RCN	b_5	0.064	0.062	1.043	.299
MS	b_6	0.185	0.062	2.995	.003**

a. Dependent Variable: Overall Audit Quality.

* = Significant at .05 level; **= significant at .01 level

Source: Field Survey, 2023. R^2 =0.67.

Table 7. Independence Regression Results

Coefficients[a]

Variables	Coeff.	Value	Std. Error	t	P- value
constant	b_0	0.881	0.133	6.641	.000
Avg. Indp.	b_1	0.574	0.072	8.017	.000**

a. Dependent Variable: Overall Audit Qual.

** = Significant at .01 level;

Source: Field Survey, 2023. R^2 =0.604.

As can be read from the regression results in Tables 5-7, all except two of the independent variables significantly affect the dependent variable. Thus our three hypotheses are supported. The adjusted R^2 of technical dimension, functional dimension and Independence are 63%, 67% and 60.4% respectively. On average the explanatory factors affect the regress and variable by 63.5%. The remaining 36.5% of the variance in the dependent variable is explained by other independent variables.

5. Discussion

As per the results in table 5, 6, & 7 the primary hypotheses (dimensions) are tested for their statistical significance through the secondary hypotheses (factors). Table 5 displays the result for the first primary hypothesis, technical dimension has positive influence on overall audit quality. Two factors; detecting and reporting, and auditor experience and integrity are significant at 0.01 and 0.05 level respectively. However, the factor wrong doing exposure to public is insignificant. Except for this factor the secondary hypotheses (other two factors) supported the primary hypothesis. Therefore, the primary hypothesis H_1 is supported.

Similar to our result, a study by Ghebremichael (2018) showed the factor 'Wrongdoing exposure' 'Whistle blowing' in his study was insignificant as the management (supervisory directors) assume that auditor should report to them not to the public as it breaches confidentiality principle. Thus, we can induct that this factor is perceived to have no major influence on overall audit quality. Whereas, contrary to our findings Rasmussen and Jensen (1998) found the dimension 'Personal credibility' similar to the factor 'Auditor integrity' to be insignificant in their study.

Table 6 reports the regression results of the second primary hypothesis. Functional factors affect the quality of overall audit quality. From the table we can conclude that 5 out of 6 factors (secondary hypotheses) display a positive and significant relationship with the dependent variable. These are Commitment to Quality (b_2= 0.24 p= 0.000 <0.01), Professional Business Handling (b_4= 0.425, p= 0.000< 0.01), Industry expert (b_1= 0.199 P=0.002< .01), and Management Skills (b_6=0.185 P= 0.003<.01). These four factors determine the overall audit quality positively and significantly. The factor Accessibility (b_3=0.157 P= 0.012< .05) also has a positive impact on audit quality but a lower significance comparing the previous four. Thus, the second primary hypothesis H_2 is supported.

The dimension 'Responsive to Client Needs' similar to the dimension 'East-to-deal-with' by Ghebremichael (2018) is insignificant in this study. However, the dimension 'Accessible' is significant in this study. Another study by Rasmussen and Jensen (1998) found knowledge of industry was perceived to be highly demanded by shareholder whereas auditors tend to give less importance to it. Since this study focuses on clients' perception the results are comparable. Similar to our dimensions Carcello et al. (1992) found 'Industry expertise' and 'Responsive to client needs' to be the most important factors for quality audit.

The last regression result displayed in table 7 has one secondary hypothesis, the average of independence from stakeholders and independence from management. As it is clearly shown in the table, there is a strong and positive association between the dependent variable 'overall audit quality' and 'independence' (b1=0.574 P=0.000<.01). Therefore, H_3 is also supported.

A number of studies found positive and strong relation between independence of auditor and audit quality. One exception is a study by Rasmussen & Jensen (1998), who compared perception of managing directors with other users, found the managing directors didn't give an importance to independence due to the perception they had. They perceived auditor as both auditor and advisor of the management. Besides, Beattie et al. (2013) reported

independence of auditors is violated in the practical world.

6. Conclusion

Despite the high corruption perception index of Eritrea since 2012, there has been no research examining Eritrean audit quality. Hence, the purpose of this study is to investigate the factors that determine Eritrean audit quality based on audit clients' perception. To achieve the objectives of the research the perception of 119 clients on 41 audit attributes was gathered through questionnaire administration. To identify the main factors that determine audit quality, factor analysis was run after dividing the 41 variables in to technical and functional attributes. The analysis results in four technical and six functional factors. The technical comprises Wrongdoings Exposure to stakeholders, Detecting and reporting to management, Auditor experience and integrity, and Independence. The six functional factors are Industry Expertise, Commitment to Quality, Accessibility, Professional Business Handling, Responsive to Client Needs and Management skills. This depicts that audit clients perceive these factors determine the overall audit quality.

To advance scrutinizing the factors determined we tested their statistical significance by running three regression models. This was hypothesizing technical, functional and independence factors are positively and statistically associated with overall audit quality. Except for "Wrong doing exposure to stakeholders" from technical factors and "responsive to client needs" from functional factors, all the other factors determine audit quality positively and significantly. This indicates our three primary hypotheses are supported.

The findings of this study provide important insights into the relationship between overall audit quality and factors determining it. With the consistent and higher rank of Eritrea on Corruption Perception Index, the originality and value of the findings can be potentially helpful to policy makers of control and audit, Eritrean audit firms and the body of knowledge in auditing regarding Eritrea. Simultaneously it deeply highlights the need for further researches in this area using the various audit quality measurement techniques, mainly directing and focusing to have a direct impact in combating corruption.

Direct and other audit quality parameters could have portrayed a better picture. However, such data are highly confidential. Hence, we decide on perception. This gap can be filled by applying direct measures and testing the validity of corruption perception index of Transparency International.

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References

Arens, A., Elder, R., Beasley, S., & Hogan, C. (2014). *Auditing and Assurance Services* (16th ed.). US: Pearson Education US.

Arrunada, B. (2000). Audit Quality: attributes, private safeguards, and the role of regulation. *The European Accounting Review*, *9*(2), 205-224.

Baotham, S. (2004). Audit independence, quality, and credibility: effects on reputation and sustainable success of AUDITs in Thailand. *International Journal of Business Research*, (1).

Barghathi, Y., Ndiweni, E., & Lasyoud, A. (2020). Joint Audit, Audit Market Concentration, and Audit Quality: Perceptions of Stakeholders in the UAE. *Corporate Ownership & Control*, *17*(2), 32-45. https://doi.org/10.22495/cocv17i2art3

Beattie, V., Fearnley, S., & Hines, T. (2013). Perceptions of factors affecting audit quality in the post-SOX UK regulatory environment, *Accounting and Business Research, 43*(1), 56-81. https://doi.org/10.1080/00014788.2012.703079

Behn, B., Carcello, J., Hermanson, R., & Hermanson, D. (1997). The Determinants of Audit Client Satisfaction Among Clients of Big 6 Firms. *Accounting Horizons, 11*(1), 7-24.

Brown, S., & Swartz, T. (1989). A Gap Analysis of Professional Service Quality. *Journal of Marketing*, *53*(2), 92-98.

Carcello, J., Hermanson, R., & McGrath, N. (1992). Audit quality attributes: The perceptions of audit partners, preparers, and financial statement users. *A Journal of practice and theory*, *11*(1).

Carey, P., & R. Simnett. (2006). Audit partner tenure and audit quality. *The Accounting Review, 81*(3), 563-676.

Chen, C., Shome, A., & Su, X. (2001). How is Audit Quality Perceived by Big 5 and Local Auditors in China? A Preliminary Investigation. *International Journal of Auditing, 5*, 157-175.

Chi, W., Myer, L., Omer, T., & Xie, H. (2016). The effects of audit partner pre-client and client-specific experience.

Choi, J., Changson, K., Kim, J., & Zang, Y. (2010). Audit Office Size, Audit Quality, and Audit Pricing. *A Journal of Practice and Theory*, *29*(1).

Clarkson, M., & Simunic, D. (1994). The association between audit quality, retained ownership, and firm-specific risk in U.S. vs. Canadian IPO markets. *Journal of Accounting and Economics*, *17*, 207-228.

Craswell, A., Francis, R., & Taylor, L. (1995). Auditor brand name reputations and industry specializations, *Journal of Accounting & Economics*, *20*(3), 297-322.

Dassen, R. J. M. (1995). Audit Quality: An Empirical Study of the Attributes and Determinants of Audit Quality Perceptions. *Ph.D. dissertation*, University of Limburg.

DeAngelo, L. E. (1981a). Auditor Size and Audit Quality. *Journal of Accounting and Economics, 3*(3), 183-199. https://doi.org/10.1016/0165-4101(81)90002-1

DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics, 58*(2), 275-326. https://doi.org/10.1016/j.jacceco.2014.09.002

Duff, A. (2004). *Auditqual, Dimensions of Audit Quality*. The Institute of Chartered Accountants of Scotland, Antony Rowe Ltd, Great Britain.

Dunakhir, S. (2014). Auditors' and Clients' Perspectives Toward Audit Quality Factors in Indonesia: Do They Differ?.

Dye, K.M., & Stapenhurst, R. (1998). Pillars of Integrity: The Importance of Supreme Audit Institutions in Curbing Corruption, Economic Development Institute of the World Bank.

Francis, J., & Wang, D. (2004). Investor protection and auditor conservatism: are Big 4 auditors conservative only in the United States?. *Working Paper*, University of Missouri and University of Nebraska.

Geiger, M., & Raghunandan, K. (2002). Auditor Tenure and Audit Reporting Failures. *Auditing: A Journal of Practice and Theory, 21*(1), 67-78. https://doi.org/10.2308/aud.2002.21.1.67

Geiger, M., & Rama, V. (2002). Audit firm size and going-concern reporting accuracy. *Accounting Horizons, 20*(1), 1-17.

Ghebremichael, A. (2018). Determinants of Audit Service Quality Perceptions of Supervisory Directors in Dutch Corporations. *Contemporary Management Research, 14*(*1*), 53-84 https://doi.org/10.7903/cmr.18037

Ghosh, A., & Moon, D. (2005). Auditor Tenure and Perceptions of Audit Quality. *The Accounting Review, 80*(2), 585-612.

Grönroos, C. (1984). A Service Quality Model and its Marketing Implications, *European Journal of Marketing, 4*, 36-44.

Hair, J., Anderson, R., & Tatham, R. (1987). *Multivariate Data Analysis* (2nd ed.). New York: Macmillan.

Iskandar, T., Rahmat, M., & Ismail, H. (2010). The Relationship Between Audit Client Satisfaction and Audit Quality Attributes: Case of Malaysian Listed Companies. *International Journal of Economics and Management, 4*(*1*), 155-180.

Ismail, I, Haron, H., Ibrahim, D., & Isa, S. (2006). Service Quality, Client Satisfaction and Loyalty towards AUDIT firms Perceptions of Malaysian Public Listed Companies. *Managerial Auditing Journal, 21*(7), 738-756. https://doi.org/10.1108/02686900610680521

Kassem, R., & Higson, A. W. (2016). External auditors and corporate corruption:

implications for external audit regulators. *Current Issues in Auditing, 10*(1), 1-10. https://doi.org/10.2308/ciia-51391

Kim, J., & Meuller, C. (1994). *Factor analysis and Related Techniques*, Edited by M. S. Lewis-Beck. Sage Publications Inc.

Klarskov, J. (2019). The Role of Auditing in the Fight Against Corruption. *British Accounting Review, 51*(5), [100798]. https://doi.org/10.1016/j.bar.2018.06.001

Knechel, W., Krishnan, G. V., Pevzner, M., Shefchik, L. B., & Velury, U. K. (2013). Audit quality: Insights from the Academic Literature. *Auditing: A Journal of Practice & Theory, 32*, 385-421. https://doi.org/10.2308/ajpt50350

Kothar, C. (2004). *Research Methodology- Methods and Techniques* (2nd Rev. Ed.). New Delhi: New Age International (P) Limited Publishers.

Krishnan, J., & Schauer, P. (2000). The Differentiation of Quality among Auditors: Evidence from the Not-for-Profit Sector". *Auditing: A Journal of Practice and Theory, 19*(2), 9-26.

Lehtinen, U., & Lehtinen, R. (1991). Two Approaches to Service Quality Dimensions. *The Service Industries Journal, 11*(3), 287-303. https://doi.org/10.1080/02642069100000047

Lennox, G. (1999). Audit Quality and Auditor Size: An Evaluation of Reputation and Deep Pockets Hypothesis. *Journal of Business Finance and Accounting, 26*(7) & (8), 0306-686x.

Malone, F., & Roberts, R. (1996). Factors associated with the incidence of reduced audit quality Behaviors. *Auditing: A Journal of Practice & Theory, 15*(2), 49-64.

McEnroe, J., & Martens, S. (2001). Auditors' and Investors' Perceptions of the "Expectation Gap". *Accounting Horizons, 15*(4), 345-358.

Nagata, H., Satoh, Y., Gerrard, S., & Kytomaki, P. (2004). The Dimensions That Construct the Evaluation of Service Quality in Academic Libraries. *Performance Measurement and Metrics, 5*(2), 53-65. https://doi.org/10.1108/14678040410546073

Nguyen, L., Le, D., Luu, H., Nguyen, A., & Hoang, T. (2019). The Role of Audit Quality in Preventing Firm Misreporting: Empirical Evidence from China. *International Journal of Managerial Finance*, 1743-9132. https://doi.org/10.1108/IGMF-04-2019-0122

O'Keefe, T., & Westort, P. (1992). Conformance to GAAS reporting standards in municipal audits and the economics of auditing. *Research in Accounting Regulation, 6*, 39-77.

Parasuraman, A., Zeithaml, V., & Berry, L. (1985). A Conceptual Model of Service Quality: Implications for Future Study. *Journal of Marketing, 49*, fall, 41-50. Reeves.

Persellin, J., Schmidt, J., & Wilkins M. (2014). Auditor Perceptions of Audit Workloads, Audit Quality, and the Auditing Profession. https://doi.org/10.2139/ssrn.2534492

Pham, N., Duong, H., Quang, T., & Thuy, N. (2017). AUDIT firm Size, Audit Fee, Audit Reputation and Audit Quality. The Case of Listed Companies in Vietnam. *Asian Journal of Finance and Accounting, 9*(1). https://doi.org/10.5296/ajfa. v9i1.10074

Rayburn, M., & Rayburn, G. (1996). Relationship between Machiavellianism and type a personality and ethical orientation. *Journal of Business Ethics*, *15*, 1209-1220.

Schroeder, M., Solomon, I., & Vickrey, D. (1986). Audit Quality; The Perceptions of Audit-Committee Chairpersons and Audit Partners. *Auditing: A Journal of Practice & Theory*, *5*(2).

Sun, J., & Liu, G. (2011). Client-specific litigation risk and audit quality differentiation. *Managerial Auditing Journal*, *26*(4), 300-316.

Sundgren, S., & Svanstrom, T. (2013). Audit Office Size, Audit Quality and Audit Pricing: Evidence from Small and Medium-Sized Enterprises. *Accounting and Business Research*, *43*(1), 31-55. https://doi.org/10.1080/00014788.2012

Thompson, T., & Shah, A. (2005). *Transparency international's corruption perceptions index: Whose perceptions are they anyway*. Retrieved March, 14, 2023.

Transparency International. (2020). *Global Corruption Report 2009: Corruption and the Private Sector*. Cambridge: Cambridge University Press.

vanraak, J., & Thürheimer, U. (2016). Opportunities to improve the measurement of audit quality: a call for collaboration between the profession and academics. *Maandblad voor Accountancy en Bedrijfseconomie*, *90*(9), 352-358.

Wally-Dima, L., Mbekomize, C., & Tobedza, G. (2016). Assessment of Clients' Perceptions towards the Quality of Audit Services Offered by Auditing Firms in Botswana. *Asian Journal of Business Management*, *8*(1), 1-11. https://doi.org/10.19026/ajbm.8.2913

Warming-Rasmussen, B., & Jensen, L. (1998). Quality dimensions in external audit services – an external user perspective. *The European accounting review*, *7*(1), 65-82.

Watkins, W. (2021). *A Step-By-Step Guide to Exploratory Factor Analysis with Spss.* Routledge, New York: Taylor & Francis.

Wilhelm, P. G. (2002). International Validation of the Corruption Perceptions Index: Implications for Business Ethics and Entrepreneurship Education. *Journal of Business Ethics 35*, 177-189. https://doi.org/10.1023/A:1013882225402

Wooten, C. (2003). Research about audit quality. *The AUDIT Journal*, 103-48.

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