Scale for Measuring Audit Quality: An Empirical Study from Pakistan

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Researchers have been working on it to turn Audit Quality (AQ) into a set of measurable determinants. This study is an attempt to develop a way to measure AQ, based on FRC's framework of audit quality presented in 2006, that could be used to quantify and measure AQ. So, the flaws and loopholes in the audit process can be identified and rectified. The auditors from the audit firms of Lahore, Pakistan, are the sample population for testing the reliability of the developed scale. The study offers 40 item scale covering all five drivers of AQ1. A variety of tests including descriptive statistics, reliability statistics, principal component analysis, and t-tests are conducted for developing and fine-tuning the constructs. The findings show the developed scale to be reliable and implementable. This study is a way forward toward making AQ measurable and understandable by the stakeholders. The results show that all the drivers and their indicators play a vital role in AQ and thus all the dimensions can be used to analyze the AQ of any audit done. This research covers the gap between literature and practical audit work and is a step ahead in empirically testing, evaluating, and improving AQ. The small sample size for the analysis of scale is the limitation of this study and it can be further fine-tuned to empirically analyze AQ.

Keywords: Audit quality, determinants of audit quality, the culture within the firm, qualities of audit staff, audit process effectiveness, reliability and usefulness of audit reporting, working of the audit committee.

Audit quality (AQ) is the certain level that the audit is conducted without biases and material misstatements are represented honestly and it should be quantifiable. A high-quality audit is one that provides the auditor the opportunity to work with its integrity, doesn't affect his professional skepticism, and allows the auditor to find possible material misstatements and frauds. AQ is a complex concept and cannot be stated in a single definition and it still remains an issue (FRC, 2006). Whereas researchers have always tried to define AQ as specifically as possible, some of the researchers have tried to summarize the audit concept. AQ can be defined as a high-quality audit performed, "in accordance with generally accepted auditing

standards to provide reasonable assurance that the audited financial statements and related disclosures are: presented in accordance with generally accepted accounting principles (GAAP) and are not materially misstated whether due to errors or fraud." (GAO, 2003).

The five drivers that primarily form the basis of AQ are, *the culture within an audit firm; the skills and personal qualities of audit partners and staff; the effectiveness of the audit process; the reliability and usefulness of audit reporting*; and *factors outside the control of auditors affecting audit quality* (FRC, 2006).

High AQ assures that the financial condition of a firm is faithfully presented, given its accounting system and other characteristics (DeFond & Zhang, 2014). AQ is being measured internally by audit firms for a long time but now the regulatory bodies and boards have started emphasizing the need for a worldwide accepted framework for measuring and quantifying AQ. Some organizations have adopted a principle-based approach while others follow mandated rules for Audit Quality Indicators AQI (CAQ, 2014). This study is a step to convert FRC's drivers of AQ into a measurable format and it can be a way forward to establishing the basis for quantifying AQ.

Literature Review

AQ can be defined as, "the market-assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach." (DeAngelo, 1981). AQ is not a static concept but it ranges from high-quality audit to low audit quality and AQ can be measured by grading the audit results on the continuum ranging from high to low-quality audit (Francis J. R., 2011).

AQ can be measured through the likelihood of an auditor issuing a going concern report (Knechel & Vanstraelen, 2007). Another way to measure AQ is that it can be measured through the time spent on the audit, measured audit time as audit hours; audit fees the audit firm charges for the audit, discretionary accruals, and the number of error corrections (Eunlee & Bee, 2012). The probability of having high AQ increases if the auditor is an industry specialist, having knowledge of the industry helps in enhancing AQ (Rohaida, 2011). Contrary to this some also suggest that AQ and industry specialization are not always positively related.

So, AQ is not a linear concept in fact it needs different variables to define, identify and measure it. In the United States, major changes were introduced to the audit under the Sarbanes Oxley Act (2002). Similar changes took place in the United Kingdom and other countries later with regard to financial reporting and corporate governance. Based on different audit quality indicators (AQIs) researchers have come up with some different frameworks for measuring and understanding AQ.

Audit reports, if reliable, independent, and supported by adequate audit evidence can transmit high-quality services to the shareholders. Six factors that significantly contribute to AQ have been identified as *good leadership, experienced judgment, technical competence, ethical values and appropriate client relationships, proper working practices, and effective quality control and monitoring review process* (ICAEW, 2002)

The "Reporting on Audit Quality Monitoring", suggested measures to improve AQ (FRC, 2006). These included extended public reporting on Audit Inspection Unit findings, and sharing information on Audit Inspection Unit findings with audit committees. FRC recognized that AQ is also affected by the choice available in the market for audit services. Around this period in response to continued concerns about the effectiveness of auditing, FRC also issued a discussion paper in an attempt to codify AQ and formulated the framework in a 2008 report: Audit Quality Framework (FRC F. , The Audit Quality Framework, 2008). This coincides with various measures adopted in many countries aimed at restoring trust in auditing and governance.

A report presented by FRC came up with the five drivers of AQ: the culture within an audit firm; the skills and personal qualities of audit partners and staff; the effectiveness of the audit process; the reliability and usefulness of audit reporting; and factors outside the control of auditors affecting audit quality (FRC, 2006). FRC after having comments from the following sectors in the UK: accountancy firms, professional bodies, investors, corporations, and others, finalized the drivers and presented a report in 2008 focusing on the "Framework of Audit Quality". The major concern is whether these drivers are true for all the audit environments in different countries following the UK standards in accountancy.

The researchers have been working on analyzing the impact of each one of the drivers. The professional competence, accountability, objectivity, and experience comprising the overall culture of the audit firm add toward achieving higher AQ (Zahmatkesh & Rezazadeh, 2017). The audit team comprises a mix of different auditors (experienced and non-experienced) and highly experienced staff ensures high AQ (Cameran, Ditillo, & Pettinicchio, 2018). A recent study shows that CEO duality, audit committees, and board independence significantly relate to AQ (Awadllah, 2020). A study from Indonesia shows professional skepticism does not mediate the influence of independence and ethics on AQ in Indonesia (Lamba, Seralurinb, & Lambac, 2020). Another study finds a positive effect of audit tenure and auditor specialization on AQ (Sari, Diyanti, & Wijayanti, 2019).

In order to discuss AQIs, financial statement preparers, governmental agencies, audit committee members, and audit firms organized a symposium in 2012. The major discussions were on two basic questions (a) how to measure audit effectiveness to determine AQ and (b) how to use AQIs to measurably enhance AQ (Martin, 2013). Most of the time was spent on discussion of the importance of AQIs and their demand in industry rather than how AQIs should be reported or measured. The Center of Audit Quality has a major role in the AQI initiative. In early 2015, the members of the center conducted a pilot testing of AQIs. The chief executive officer of the center highlighted the experience of using their approach and AQ measures revealed several areas where improvements are needed (Cindy, 2016).

It is complicated to create a measure for AQ. Another study presents a scoreboard approach for defining AQIs. According to this approach, AQ can be divided into four categories, namely, inputs, processes, outcomes, and context (Knechel et al., 2013). The Policy and Reputation Group of FRC also complied research and identified the following key factors that contribute towards AQ: funds dedicated to software and staff, AQ monitoring, external investigations, and internal and external survey results (FRC, Transparency Reporting by Auditors of Public Interest Entities, 2015). It shows the importance of AQ and the need to make it measurable to make it understandable to the stakeholders.

Scale Development for Audit Quality

A [2]close-ended questionnaire based on FRC's drivers (2006) is prepared, the statements about the indicators of five drivers are prepared and the respondents are asked to rank the indicators as per their level of importance towards AQ. It is aimed to find out the reliability of these drivers in Pakistan that follows UK's accountancy standards. The research also aims at finding that whether the drivers identified are feasible in the audit scenarios faced by the auditors in a developing country like Pakistan.

The research is conducted in the natural environment of Pakistan and fifty-three firms currently operating in Lahore are the targeted population of this study. The data collected is of primary nature as it is collected for the first time and solely attained for the purpose of this research. For concrete results, the responses of the auditors are analyzed rather than that of

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[2] Questionnaire is provided at the end of the research paper

the firm's management as the auditors are the main source of audit done. Also, there are chances of manipulation in responses if the study is conducted among the management of the audit firms.

Two audit firms through convenience sampling technique are selected from the targeted population and the snowball sampling technique is adopted for further collection of data. A total of [3]sixty respondents are generated through this technique and all the responses from these sixty auditors are useable in analysis. Snowball sampling technique with practical limitations cause a decrease in the reachable firms and thus the population is reduced to the audit firms of Lahore. Questionnaires are sent through email and some are filled by walking into some accessible audit firms. Responses received are then analyzed without any manipulation and presumptions for the reliability of the proposed scale. The analysis is discussed in detail in the next section.

Principal Component Analysis

The validity, reliability and accuracy of the proposed scale developed for measuring the AQ depending on the drivers i.e. culture within the firm, skills and qualities of staff/partners, audit process effectiveness, reliability and usefulness of audit reporting, and working of audit committees of any audit firm are tested through performing the principal component analysis. The items that gain a value closer to 1 are considered more reliable and the ones that get a value less than 0.5 are considered not reliable. This means that the reliable items are the ones that contribute towards AQ. The analysis for each of the drivers is discussed one by one hereafter.

The Culture within the Firm

The extraction method provides the reliability statistics for the indicators of this dimension and as a result all the indicators except for the two indicators mentioned in the table are considered reliable for measuring the culture within the firm. The results show that "reputation of individual auditors" and the "financial problems faced by the audit firm" are the two indicators of this driver that are not reliable for measuring the culture of audit firm. All the other indicators are found to be the contributors towards good culture of the firm and hence AQ. So, it is found that these indicators can be used in measuring AQ.

Table 1.1
Culture within the Firm: Principal Component Analysis

S#	Items	Extraction
1	The reputation of the audit firm.	0.652
2	The reputation of individual auditors	0.316
3	Encouraging the firm "doing the right thing" in public interest.	0.757
4	Encouraging the individual auditor "doing the right thing" in the public interest.	0.906
5	Ensuring that partners have sufficient time to undertake each audit effectively.	0.683
6	Providing sufficient resources to deal with difficult issues as they arise.	0.656
7	Making sure that the financial problems don't affect the audit quality negatively.	0.483

[3] 31 from big three and 29 from non-big firms

8	Encouraging the discussion among engagement personnel on important and difficult issues.	0.630
9	Helping partners in implementing their personal judgments where ever required.	0.818
10	Cultivating a reward system for partners who encourage the personal characteristics of the engagement team towards quality auditing.	0.796
11	Cultivating a reward system for staff that encourages the personal characteristics of the engagement team towards quality auditing.	0.891

Extraction Method: Principal Component Analysis

Skills and Qualities of Staff / Partners

As per the principal component analysis and the reliability statistics eight out of nine established dimensions are reliable for measuring this driver. The results show that "the amount of time spent on an engagement" has no role in evaluating the driver and AQ. Thus, all the indicators can be included in the framework to measure AQ. So, it shows that the skills of the auditor and the partner contributes towards AQ and can be used as a tool to measure and analyze AQ.

Table 1.2
Skill and Qualities of Staff / Partners

S#	Items	Extraction
1	They adhere to the principles underlying auditing and ethical standards	0.843
2	They exhibit professional skepticism in their work.	0.854
3	They are strong and self-reliant in dealing with problems arising during an audit engagement.	0.818
4	They have the necessary knowledge and experience for conducting an audit engagement.	0.794
5	They spend enough time on an audit engagement	_0.339_
6	They have sufficient experience to perform the audit testing procedure on-site.	0.559
7	They are closely supervised or guided by partners and managers.	0.685
8	They provide 'mentoring' and 'on job training to the junior staff	0.605
9	They are sufficiently trained in audit, accounting, and industry-specific issues	0.448

Extraction Method: Principal Component Analysis

Audit Process Effectiveness

All the dimensions or indicators established in the scale for measuring this driver reliable based on the results of principal component analysis. The results show that the way and professionalism in conducting AQ plays a vital role and thus can be used for measuring AQ. So, the developed scale seems to be reliable and can be part of the framework of AQ measurement.

Table 1.3
Audit Process Effectiveness

S#	Items	Extraction
1	High-quality technical support is available when the audit team encounters an unfamiliar situation	0.660
2	Audit methods and tools applied to the audit are well structured.	0.644

3	Framework and procedures are provided to obtain sufficient appropriate audit evidence effectively and efficiently.	0.759
4	Compliance with audit standards has been made without inhibiting the exercise of judgment	0.654`
5	Appropriate audit documentation as per procedures	0.710
6	Audit work is effectively reviewed as per requirements.	0.729
7	The achievements of ethical standards (i.e. integrity, objectivity, and independence of the auditor)	0.687
8	Audit quality control procedures are effective	0.707
9	Audit quality control procedures are understood	0.582
10	Audit quality control procedures are applied.	0.788
11	Audit quality is monitored within the firm.	0.742
12	Audit quality is monitored across international networks.	0.572
13	Appropriate remedial actions are taken for audit quality.	0.799

Extraction Method: Principal Component Analysis

Reliability and Usefulness of Audit Reporting

The analysis reveals that the six indicators developed for measuring the reliability and usefulness of audit reporting are reliable and can be used for evaluating this particular driver of AQ. The way of writing an audit report and publishing it is of extreme importance for its stakeholders. The international standards set must be followed in this aspect so this dimension is of extreme importance. The results also show that all of the items of this dimension combine together to make the audit report useful. So, if a firm follows all the mentioned indicators it results in a high AQ.

Table 1.4
Reliability and Usefulness of Audit Reporting

S#	Items	Extraction
1	Audit report meets the needs of the users of the financial statements.	0.660
2	Audit report meets the national applicable laws and regulations.	0.857
3	Scope of the audit.	0.734
4	The threat to auditor objectivity.	0.748
5	The key risks identified and judgments made in reaching the audit opinion.	0.867
6	The qualitative aspects of the entity's accounting and reporting and potential ways of improving financial reporting.	0.642

Extraction Method: Principal Component Analysis

Working of Audit Committees

A three-dimension scale is developed for the measurement of this driver and the principal component analysis suggests that all three indicators are useful and reliable for measuring the driver. Thus, an active and professional audit committee with self-reliance can be helpful for high AQ. The firms with a high value on the indicators mentioned will surely provide high AQ.

Table 1.5
Working of Audit Committees

S#	Items	Extraction
1	Good corporate governance, including an active audit committee	0.831
2	Professional skepticism of the audit committees in their work	0.828
3	Strength and self-reliance of the audit committees in dealing with issues identified during the audit process.	0.836

Extraction Method: Principal Component Analysis

Construct development and measurement of its reliability are the two major tasks of this research and Table 1.6 provides the inter-item consistency of the scales (reliability) in terms of Cronbach Alpha of the developed scale. The reliability of all the drivers lie within the acceptable range and the scales for each driver of the AQ are reliable. Thus, this scale can be used for further study for AQ measurement and enhancement.

Table 1.6
Scale Reliability of the Five Drivers

Variable	No. of Proposed Items	Final Items	Alpha
The culture within the firm	11	9	0.834
Skill & Qualities of Staff/Partners	9	8	0.939
Audit Process Effectiveness	13	13	0.939
Reliability & Usefulness of Audit Reporting	6	6	0.836
Working of Audit Committees	3	3	0.771
Total	42	39	-

Bi-variate Correlations

Table 1.7 shows the bi-variate analysis of the variables under study. The table shows that the general characteristics of the auditors and the audit firms are not at all related to one another or with any of the drivers of AQ i.e. the gender, age of the auditor, or the size of the audit firm are not related to the AQ in any way. The table also shows that all the drivers of AQ as per the FRC framework are related to one another and there is a connection among these drivers. But at the same time the last driver "working of audit committees" is only related to the driver "reliability and usefulness of audit reporting" and has no relation with any other driver in the framework. The results also show the fact that "skills and qualities of staff and partner", "audit process effectiveness" and "reliability and usefulness of audit reporting" are closely related to one another as the correlation values are above 0.5. This correlation also brings doubt that there is a possibility that these three divers are so similar to one another that they can be considered as one driver. But due to the small data size and geographical data, the statement cannot be generalized and further research is required in this aspect.

Table 1.7
Bi-variate Correlations

Variables	1	2	3	4	5	6	7	8	9
Gender	1								
Age	-0.028	1							
Formal Education	-0.097	0.232	1						
Hierarchical Level	0.165	-0.471**	-0.362**	1					
Firm Tenure	-0.091	0.489**	0.217	-0.647**	1				
Culture within the firm	0.010	0.000	0.182	-0.213	0.122	1			
Skill & Qualities of Staff/Partners	-0.087	0.107	-0.072	-0.020	0.137	0.387**	1		
Audit Process Effectiveness	0.008	-0.066	-0.034	0.024	0.080	0.645**	0.666**	1	
Reliability & Usefulness of Audit Reporting	-0.107	0.042	-0.028	-0.002	0.025	0.391**	0.717**	0.651**	1
Working of Audit Committees	-0.021	0.175	0.231	-0.114	-0.097	0.224	0.162	0.210	0.429**

Conclusion

The component analysis done on the scale developed, for measuring AQ, using the extraction method shows that all the five drivers (culture within the firm, qualities of audit staff, audit process effectiveness, reliability and usefulness of audit reporting, working of the audit committee) are important for measuring AQ. It can be said that the framework of AQ (FRC, 2006) is a valid framework and can be used for analyzing the overall performance of the audit being conducted, these results are similar to the findings of Holm and Zaman 2012. This research provides the opportunity to measure AQ, not as an output based on the audit report alone but also focuses on analyzing internal factors of the audit firm that contribute towards achieving high AQ. The attempt to empirically measure AQ can be achieved using the scale proposed in this study. The scale developed for the indicators, "skills of the auditors" and "audit process effectiveness" are found to be the most reliable. This shows that these two drivers are the basis of AQ and the indicators developed by FRC for these drivers are all very important for achieving high AQ. Studies also show that auditor specialization and audit process contribute towards achieving high AQ. The proposed scale proves to be reliable for measuring AQ and thus it can be used to empirically measure AQ, hence the quality of every audit can be empirically tested. Firms that get a high score on sales would be considered to provide higher AQ.

As this research is country based, the data collected and analyzed is from Pakistan, so the results cannot be generalized for all audit firms around the globe. Future research can help in further fine-tuning the scale and finding better ways to empirically measure AQ. A larger sample size and testing of the scale in other countries can further enhance the reliability of the scale. The snowball sampling technique adopted for data collection is another possible limitation. It is recommended that future researchers use different sampling (preferably random sampling) methods in order to generalize the results.

The response collection method through a questionnaire can be considered a limitation of the study as it limits the freedom of the respondents to present their views. Other analysis techniques like interviewing, case studies, experiences, etc. can also be used on the same construct to validate the results more.

Regulators, scholars, and firms must involve in collaborative research. This would be the best possible strategy for further progress in the auditing field. Ideally, both private data from accounting firms and from regulators are needed for these collaborations. For moving beyond the current knowledge of auditing, an in-depth understanding of the breadth of knowledge is indispensable for improving AQ (Francis, 2011). This research is a step forward toward the achievement of this goal. It is important for research to be effective that the auditors and standard-setting international bodies consider the importance of research and the results that can be gained through following such research. So, it is important to involve audit firms and auditors in such research to practically implement the outcomes and findings.

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