Qualitative and Quantitative Research Review, *Vol.3*, *Issue 2*, *2018.*
ISSN No: 2462-1978
eISSN *No:*: 2462-2117

GOOD GOVERNANCE OF AUDIT QUALITY: STRUCTURAL MODELLING

HALIAH, KARTINI, NIRWANA, HASNAWIYA,

Faculty of Economics, University of Hasanuddin, Makassar
Faculty of Engineering, University of Hasanuddin, Makassar

LINDA ARISANTY RAZAK

[3]*Faculty of Economics, University of Muhammadiyah Makassar, Makassar*

ABSTRACT

This study was aimed to empirically test the formulation of good audit quality governance system in Indonesia. This study used an explanatory method which was analyzed by using Partial Least Square-PLS. The respondents of this study are auditors who have JFP certificate (Examiner Functional Position); Civil Servants (*PNS*) in addition to JFP auditors who have often conducted inspections with at least two years of experience carrying out audit work; Civil servants who have worked in finance for at least two years. The results showed that the independence factor has a significant effect on compliance with the code of ethics, but does not directly affect audit quality. However, the independence factor can affect audit quality if through compliance with the code of ethics. The commitment factor has no direct effect on compliance with the code of ethics and on audit quality. But the factor of commitment to audit quality would affect if it was supported by high audit compliance. Compliance with the code of ethics has a direct effect on audit quality. The allowances was affected to mediate the compliance relationship to the code of ethics and audit quality. This means that if a high allowance will have an impact on the high and low compliance relationship with the code of ethics and audit quality, so that to increase compliance with the code of ethics, it is necessary to increase independence and to improve audit quality, it is necessary to increase compliance with the code of ethics and allowances.

Keywords: Independence, Commitment, Audit Quality, Compliance with the Code of Ethics and Allowances

INTRODUCTION

Background and Research Hypotheses

The accountant profession is a public trust profession. The accountant profession is responsible for raising the level of reliability of the company's financial reports that will be used by the community as a basis for decision making. For this reason, it is hoped that the accounting profession will provide a free and impartial assessment of the information presented by company management in financial reports (Mulyadi & Puradiredja, 1998: 3). The great trust from users of audited financial reports and other services provided by the accountant ultimately requires the accountant to pay attention to the audit quality produced.

Questions from the public about audit quality produced by accountants (auditors) are even greater after many scandals involving auditors both abroad and domestically. Domestic scandals can be seen from the actions taken by the Honorary Assembly of the Indonesian Institute of Accountants (*IAI*) on 10 Public Accountants Offices indicated to have committed gross violations when auditing banks liquidated in 1998. This phenomenon raises questions about audit quality produced by the Audit Board (*BPK*) of the Republic of Indonesia?

BPK audit results in the form of opinions are still often highlighted in the community. One of them was from the former chairman of the Corruption Eradication Commission (*KPK*) Samad, A (2013) which stated that unqualified opinion (*WTP*) is not a guarantee for an area to be free from the latent danger of corruption. Some examples of areas that are *WTP* but their regional heads are involved in Regional Revenue and Expenditure Budget (*APBD*) corruption cases in their regions, such as Riau Province, it has received *WTP* since 2012 for 4 consecutive years. However, the Riau Regional Head is most often dealing with the *KPK* and several

other areas. The reason for the justification that the *BPK* conducts an examination of the sample is not comprehensive to all transactions, so that it can lead to fraud. This cannot be used as an excuse because the conclusion of the sample must meet a high level of confidence. These results are stated in the formulation of the *BPK* opinion. For this reason, the audit quality produced by the *BPK* is an interesting issue to be explored.

Audit quality is important because with the high audit quality, a reliable financial report will be produced as a basis for decision making. Besides that, the low audit quality will lead to the risk of lawsuits (legitimacy) and fraud, corruption, collusion and various irregularities will arise.

De Angelo (1981) argues that audit quality can be stated as a joint probability. An auditor will find and report violations in his/her client's accounting system. To measure the concept of direct audit quality, it is very complex and complicated (De Angelo, 1981). However, various studies on audit quality have been carried out by using several dimensions that affect the audit quality. The researches include research conducted by Carcello et al. (1992) which assessed audit quality and auditee's satisfaction from the twelve attributes of audit quality, namely: 1) experience, 2) expertise, 3) responsiveness to client needs, 4) competence, 5) independence, 6) membership as a group, 7) commitment, 8) involvement of leaders, 9) conducting field audits, 10) involvement of audit committees, 11) compliance with ethical standards, 12) maintaining skepticism, and 13) rewards. This current study used several attributes applied by Carcello et al. (1992) such as independence, commitment, compliance with the code of ethics and rewards as determinants of audit quality.

Auditor independence is needed to increase the level of reliability of an organization's financial reports. Without independence, the auditor does not mean anything. This is in accordance with the statement of the second general Standard (SA section 220 in the Public Accountants Professional Standards (*SPAP*), 2001) which

states that "In all matters relating to the engagement, independence in mental attitude must be maintained by the auditor". This standard requires that auditors must be independent (not easily influenced), because auditors carry out their work in the public interest. Thus, the auditors are not justified in taking sides. The auditors must carry out the obligation to be honest not only to the management and owner of the organization, but also to creditors and other parties who involved in the audited financial reports.

Besides independence, the auditors must also have a high commitment to their profession. Commitment is built on the basis of the auditor's trust in the values of his/her profession, willing to help realize the goals of the profession and loyalty to remain a member of the profession. Therefore, commitment will lead to a sense of belonging for the auditor towards the organization. If the auditor feels his/her soul is bound to existing organizational values, the auditor will feel enjoy at work, so that the quality of his/her work can increase. This is congruent with the findings of Larkin (1990) in Trisnaningsih (2007) which states that auditor quality is influenced by four personality dimensions, namely ability, professional commitment, motivation, and job satisfaction. The auditor who is committed to his/her profession will be loyal to his/her profession, and obey the ethical rules in his/her profession.

In addition to independence and commitment, accountants are expected to adhere to the professional code of ethics. Accountants in carrying out their profession tend to ignore ethical issues when they find technical problems. This means that accountants tend to behave immorally when faced with audit problems. The consequence is that it will reduce audit quality and loss of public trust that will lead to excessive government interference and will remove the accounting profession (Ponemon and Gabhart, 1993; 1994 in Abdonsius, 2007).

Rewards beyond the basic salary in government are usually called allowances. Allowances provided to auditing employees (*BPK, BPKP* or inspectorate) who hold the Examining Functional Position

(*JFP*) are called Examiner Functional Position (*JFP*) allowances. Research relating allowances with audit quality was carried out by Lawenshon et al. (2007). The results of their research concluded that auditors' satisfaction and audit quality conducted by Big Five Public Accountants and non-Big Five were influenced by auditors' competence and the amount of fees received by the auditors. The results of this study are also supported by the results of research by Payne and Jensen (2002). The results of their research stated that incentives affect the existence of a high quality reporting system, auditor reputation, timeliness and audit delay.

Based on the description above and from the previous researches, it can be concluded that the auditor's commitment is needed to carry out his/her profession ethically. But in accordance with his/her responsibility to increase the level of reliability of a company's financial reports, the accountant not only needs to have a commitment but also must be independent in auditing. In order for quality audit results, in addition to commitment, independence also requires a level of compliance with the accounting profession code of ethics as well as adequate audit fees or allowances.

There are several studies on audit quality that have been carried out both in terms of topics and research methods. In terms of topics, such as: the size of the public accounting firm (*KAP*) (De Angelo, 1981; Deis and Girous, 1992), audit tenure (Aldhizer and Lampe, 1997), audit fees (Payne and Jensen, 2002), non-audit services (Wooten, 2003). Whereas in terms of research methods, there is currently scarcity of researches focused on developing a conceptual framework that can capture the construct of audit quality. Development of a comprehensive model on audit quality needs to be done so that the model can capture the complexity found in audit quality researches which ultimately impact the creation of good audit quality governance system and honest and quality human resource development. Therefore, in this current study, Carcello et al. (1992) model was re-examined by using the dimensions of independence, commitment, compliance with the code of ethics, and allowances. Its difference with the research

conducted by Carcello et al. (1992) is looked at aspects of auditee's satisfaction that focus on the users of audit reports, while this study focused on auditors. On the basis of this background, the researchers raise the research theme "A Study in the Framework of Good Governance of Quality Audit which is reviewed from Perspectives of Personal Factor, Code of Ethics and Allowances.
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LITERATURE REVIEW

State of the Art of Audit Quality System

De Angelo (1981) states that the audit quality system is a joint probability in which an auditor will find and report violations in his/her client's accounting system. The possibility that the auditor will find misstatements depend on the quality of the auditors' understanding (competence) while the act of reporting misstatements depends on the auditor's independence. Audit quality is very important because high audit quality will produce reliable financial reports as a basis for decision making.
One way to measure the quality of the auditor's work is through the quality of decisions taken. Bedard and Michelene (1993) and Johnstone (2014) state that there are two approaches used to evaluate a decision in general, namely outcome oriented and process oriented.

A process-oriented approach argues that in the United States context, decision quality is measured by: (i) the level of auditor compliance with General Acceptance on Auditing Standards (GAAS); (ii) the level of auditor specialization in certain industries. Whereas the results-oriented approach is carried out by Johnstone (2014) measures audit quality through audit results. There are two audit results that can be observed, namely: (i) audit report; and (ii) financial report. The observable measure in the audit report is the auditor's tendency to issue a going concern opinion when the company goes bankrupt. Meanwhile the measure that can be observed in the financial report is earnings quality.

This study used a process approach to measure audit quality. The indicators used were those proposed by Wooten (2003) developed

by Alim et al. (2007). The indicator is compliance with audit standards, compliance with audit procedures, free from misstatements in reporting, prudential principles on audit risk, timely audit, and completeness of audit evidence documents.

Factors Affecting Good Governance of Audit Quality System

The Indonesian Institute of Accountants (*IAI*) states that criteria or measures of quality include the auditor's professional quality. Auditor's professional quality criteria as regulated by general auditing standards include expertise/competence, independence, integrity/commitment, objectivity and adherence to standards. From this statement, it can be concluded that the quality of audit services aims to ensure that the profession is accountable to clients and the general public which also includes the quality of professional auditors.

Audit quality based on the Regulation of the State Minister for Administrative Reform No. Per/05/M/Pan/03/2008 dated on March 31, 2008 is influenced by: 1) expertise; 2) independence; 3) professional accuracy; 4) compliance with the code of ethics. Whereas according to Carcello et al. (1992) and Scoot, W. R (2015) attributes used to assess audit quality and auditee's satisfaction from twelve audit quality attributes are: 1) experience; 2) expertise; 3) responsive to client needs; 4) competence; 5) independence; 6) membership as a group; 7) commitment; 8) involvement of leaders; 9) field audit; 10) involvement of the audit committee; 11) compliance with ethical standards; 12) keep skepticism. From the description above, then in this study the determining factors influencing audit quality are as follows:

a. Independence is the attitude expected of a public accountant not to have a personal interest in carrying out his/her duties, which is contrary to the principles of integrity and objectivity. This is congruent with the opinion of Arens and Loebbecke (2015) defining independence in auditing means

holding on to an impartial view in conducting audit testing, evaluating audit results, and preparing audit reports.

b. Organizational/professional commitment involves three attitudes, namely: a sense of identifying with the goals of the organization, a sense of involvement with the work of the organization/profession, and a sense of loyalty to the organization/profession (Ferris and Aranya, 1983 in Trisnaningsih, 2007). The auditor's commitment to his/her organization is the auditor's loyalty to his/her organization. Besides, it will also foster loyalty and encourage auditor involvement in taking various decisions. Therefore, the commitment will lead to a sense of belonging for the auditor towards the organization which can ultimately improve the performance/quality of the work.

c. Compliance with the Code of Ethics. Compliance is a person's level of conformity to norms or agreements with other parties. Compliance is defined as a condition where individuals/organizations fulfill all obligations and conduct their rights. Compliance is the behavior to do or not work on certain activities in accordance with the principles and rules that apply (Buntoro, 2008). So that compliance with the code of ethics is a condition where the auditor must refer to a code of ethics that is part of the standard.

d. Allowance, is every additional benefit offered to workers. The aim is to improve the quality, achievement, dedication and productivity of employee work. With this consideration, the government is facing the need to provide allowances to *BPK* employees who occupy the Functional Examiner Position (*JFP*). The allowance is called the Inspector Functional Position (*JFP*) allowance. The allowance is regulated in Government Regulation SE-43/PB/2017 on June 14, 2017 about Implementation of Presidential Regulation Number 12 in 2017 concerning Functional Position Allowances of Civil Service Auditors.

The common allowances are termed auditor fees. Various studies about fee were conducted by Astuti and Ramantha (2014). The results stated that there was a significant effect between Audit Fee, Going Concern Opinion, Financial Distress and Company Size on Auditor Substitution.

This study adopted an agency approach to evaluate the factors that influence audit quality. Research on the existence of demands for audit quality has been described by using the agency and contracting literature. The argument is that the higher the agency boarding house (the cost of conflict), the greater the demand for higher audit quality, both by managers and shareholders (Watts and Zimmermann, 1986).

In addition to the Agency Theory, this research also used Attribution Theory. This theory was first developed by Heider (1958) who argues that a person's behavior is determined by a combination of internal and external forces. Both of these factors or forces need each other and are interdependent so that they play an important role in the implementation of auditor assignments.

RESEARCH PROBLEMS AND OBJECTIVES

There is a gap between expectations and reality which raises questions about audit quality produced by the auditor. The field phenomenon shows that *BPK*'s opinion does not guarantee good quality of financial implementation. Even the best *BPK*'s opinion (*WTP*) still causes corruption in its financial implementation. This gap is a national strategic problem that can be answered through this research. For this reason, the main problems in this study were formulated into the research questions as follows:

1. Does independence affect audit quality?
2. Does independence affect audit quality through compliance with the code of ethics?

3. Does commitment affect the compliance with the code of ethics?
4. Does the commitment affect audit quality?
5. Does the commitment affect audit quality through compliance with the code of ethics?
6. Does compliance with the code of ethics affect audit quality?
7. Do allowances moderate the effect of the relationship between compliance with the code of ethics and audit quality?

To answer these problems, the objectives of this study are expected to contribute to the development of science, methodology and practical applications as follows:

For the Development of Science and Technology

a. The results of this study can confirm the Attribution Theory, as a system that is determined by internal and external forces, need each other and are interdependent; Agency Theory, which emphasizes the responsibility for the mandate acceptance, as well as the aspects of independence, commitment, code of ethics, allowances, and their effect on audit quality.
b. This study is also expected to find a theoretical framework on the concept of a good audit quality governance system model.

The methodological aspect, this study is expected to explore empirically the interaction effects of audit quality by using the PLS program. Previous researches only used regression and correlation methods.

For practical implementations

a. It can be used as an idea contribution in solving national strategic problems, especially the possibility of negative impacts on audit quality aspects.

b. It can be used as a contribution to ideas and input for the functional organization of examiners, especially the Indonesian Accountants Association (*IAI*), a joint forum of the Government Internal Audit Apparatus (*APIP*) on the implementation of audit quality.

RESEARCH HYPOTHESIS

Perspectives of personal factors are proxied to independence and commitment; therefore the hypotheses proposed were as follows:

Hypothesis 1: Independence affects compliance with the code of ethics

Hypothesis 2: Independence affects audit quality

Hypothesis 3: Independence affects audit quality through compliance with the code of ethics

Hypothesis 4: Commitment affects compliance with the code of ethics

Hypothesis 5: Commitment affects audit quality

Hypothesis 6: Commitment affects audit quality through compliance with the code of ethics

Hypothesis 7: Compliance with the code of ethics affects audit quality

Hypothesis 8: Allowances as moderating variables take effect on the relationship between compliance with the code of ethics and audit quality.

Based on the logical explanation above, the conceptual framework of this study was developed as follows.

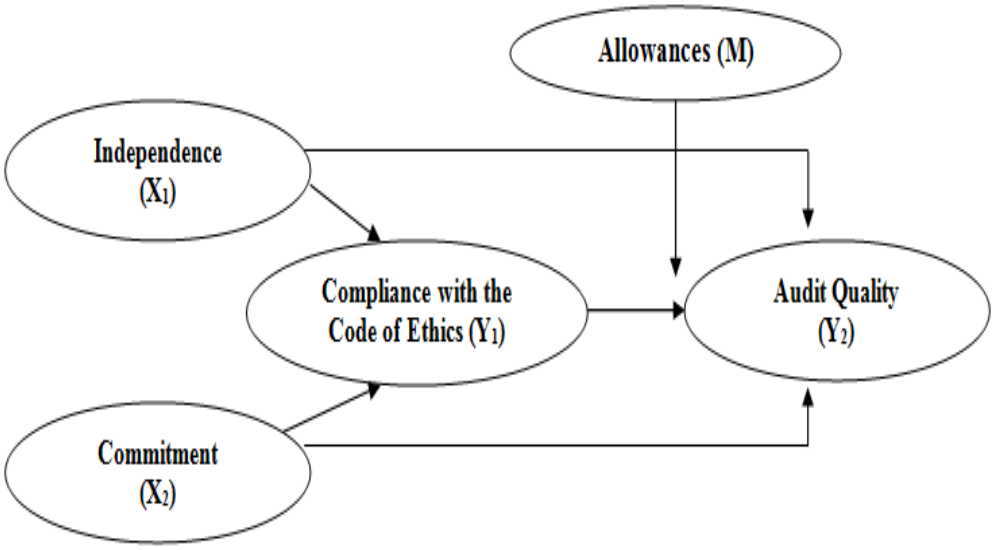

Figure 1. Conceptual Framework, 2018

RESEARCH METHOD

The steps taken to achieve the stated research objectives were as follows.

Formulating Research Design

Based on the research problems and the conceptual framework stated previously, this study was explanatory research. This study attempted to explain the causality relationship between the variables of commitment, independence, commitment, compliance with the code of ethics, allowances and audit quality in South Sulawesi Province.

Referring to its purpose, this study was intended to obtain an overview or description of the factors that affect the good audit quality governance in South Sulawesi Province. In accordance with the objectives to be achieved, two types or forms of research were used, namely descriptive and verification research. For this reason, the method used was a survey leading to research with a quantitative approach oriented to the PLS model.

Selecting Population and Sample

Respondents who were the population of this study were 234 civil servants at Audit Board (*BPK*) of the Republic of Indonesia. The sampling technique used was purposive sampling with consideration of the selected sample criteria as follows:

a. Auditors who have JFP certificate (Examiner Functional Position);
b. Civil servants other than JFP auditors who have often conducted inspections with at least two years experience carrying out audit work.
c. Civil servants who have worked in finance for at least two years.

Respondents who were given questionnaires were 148 respondents. This amount was determined based on the formula (Slavin, 2009) with a 95% confidence level.

$$n = \frac{N}{1+(N.\ e^2)} \Longrightarrow n = \frac{234}{1+(234.0{,}05^2)} \Longrightarrow n = 148$$

Description: n = Number of Samples, N = Population, e = Standard of error

Choosing Data Sources and Techniques of Data Collection

The data collection procedures of this study were carried out with the following procedures:

a. For primary data, interview and questionnaire were given to each respondent, namely the auditors of Audit Board (BPK) of the Republic of Indonesia. Primary data was specifically collected by researchers to answer research questions.

b. Secondary data was obtained through textbooks, journals, reports or publications published regularly and from the internet relating to this study.

Defining Operational Definitions and Variable Measurement Scales

Overall, the total number of variables consisted of five and all of them were latent variables that cannot be measured directly, so the measurement was through variable indicators.

a. **The independence variable (X_1)** is the attitude expected of a public accountant not to be affected by the management and users of financial reports in carrying out their duties, which is contrary to the principles of integrity and objectivity. The independent concept used is independence in fact by using the indicators Mautz and Sharaf (1961) in Sawyer et al. (2005: 33) developed by Haliah (2013) with a free indicator of all activities audited, the status of the organization gives quite forces to carry out audit responsibilities.

b. **The commitment variable (X_2)** is the intensity of a person to identify him/herself, as well as the level of involvement in the organization or profession. This organizational commitment variable was measured by using an instrument developed by Meyer and Allen (1984), and has been replicated by Trisnaningsih (2003). The instrument consists of 11 items, namely 5 affective organizational commitment items (willingness to work hard, share the organization as a pleasant place, willingness to accept organizational/professional assignments), 3 normative commitment items (organizational inspiration in achieving performance, happy in the current organization, caring for the fate of the organization) and 3 items of continuance commitment (the similarity of values of individuals and

organizations, feeling loss when leaving the organization, good workplace organization.

c. **The compliance with the code of ethics variable (Y_1)** referred to in this study is a condition where the auditors must refer to the code of ethics which is part of the standard. The indicators used are based on Jamilah, et al. research (2007), namely ethical awareness and concern for professional ethics.

d. **The allowance variable (M)** which is intended in this study is the additional benefit given to the auditors after completing an examination which is called the Inspector Functional Position (*JFP*) allowance. The indicators used are based on the dimensions of the assessment of JFP allowances, namely education, examination, professional examiner development, activities that support the implementation of audit duties.

e. **The audit quality variable (Y_2)** referred to in this study is a joint probability that an auditor will find and report violations in the audited entity. De Angelo (1981) states that audit quality is measured by using the indicators proposed by Wooten (2003) developed by Alim et al. (2007), namely: compliance with audit standards, compliance with audit procedures, free from misstatements in reporting, prudential principles of risk audit, timely audit, completeness of audit evidence documents.

Examining Analysis Method

Data analysis method used was descriptive statistical analysis and inferential statistical analysis. In the descriptive statistical analysis, the data that had been collected was then tabulated in the table and conducted descriptively. Descriptive size was a number, both in the number of respondents and the average value of the respondent's answer and percentage. Inferential statistical techniques were used

because this study analyzed sample data. The results or conclusions taken can be applied to the population. Inferential statistical techniques used were Partial Least Square.

RESULTS

Research Instrument Test and Descriptive Analysis of Characteristics of Respondents

All variables in this study show valid and reliable; they can be seen in Appendix 1 and 2. Population was 234 people and sample was 148 people. Respondents were generally male and around 45-56 years old. In addition, the dominant respondents with S-2 education degree and working period were approximately 20-29 years (Appendix 3).

Appendix 4, 5, 6, 7, 8, and 9 show the results of the description analysis of each research variable. Overall, respondents perceived the variable of independence factor, commitment, allowances and audit quality which is on average around 3.4 - 4.2 (high category). Meanwhile compliance with the code of ethics is at an average of 3.37 (medium category). This indicates that the factors of independence, commitment, allowances and audit quality possessed by respondents are at a very good level and compliance with the code of ethics is at a good level.

Inferential statistical analysis

Testing Linearity Assumptions and Q2 Predictive

All correlation between variables, all linear models are significant, because the significant value (p-value) model is lower than 0.05, so that the linearity assumptions are met (Table 1). Thus, all correlation between variables in this study are in linear form, so PLS can be used.

Table 1. Linearity Assumptions Testing

Correlation	Testing Result	Description
X1 → Y1	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier
X2 → Y1	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier
X1 → Y2	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier
X2 → Y2	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier
Y1 → Y2	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier
M → Y2	Significant Linear Model (Sig Linier 0.000< 0.05)	Linier

Source: Primary data analysis, 2018 (Appendix 10)

Similarly, the predictive-relevance value is 0.6745 or 67.45% which is at high level category, so the model is worthy called to have relevant predictive values. Predictive relevance value is 67.45% which indicates that the diversity of data that can be explained by the PLS model is 67.45% or in other words the information referred to the 67.45% data can be explained by the model. Meanwhile the remaining 32.55% is explained by other variables (which are not referred to the model) and errors.

The value of outer loading (for reflexive indicators) and outer weight (for formative indicators) shows the weight of each indicator as a measure of each latent variable. Indicator with the largest outer loading or outer weight is the dominant variable scale. Likewise, the Inner model test can be seen in the table 2 as follows.

Table 2. PLS Structural Model: Direct Effect

No	Correlation	Coefficient	P-value
1	Independence Factor (X_1) to Compliance with the Code of Ethics (Y_1)	0.422	<0.001
2	Commitment Factor (X_2) to Compliance with the Code of Ethics (Y_1)	0.046	0.256
3	Factor Allowance (M) to Compliance with the Code of Ethics (Y_1)	0.249	<0.001
4	Independence Factor (X_1) to Audit Quality (Y_2)	0.045	0.259
5	Commitment Factor (X_2) to Audit Quality (Y_2)	0.056	0.213
6	Allowance Factor (M) to Audit Quality (Y_2)	0.353	<0.001
7	Compliance with the Code of Ethics (Y_1) on Audit Quality (Y_2)	0.323	<0.001

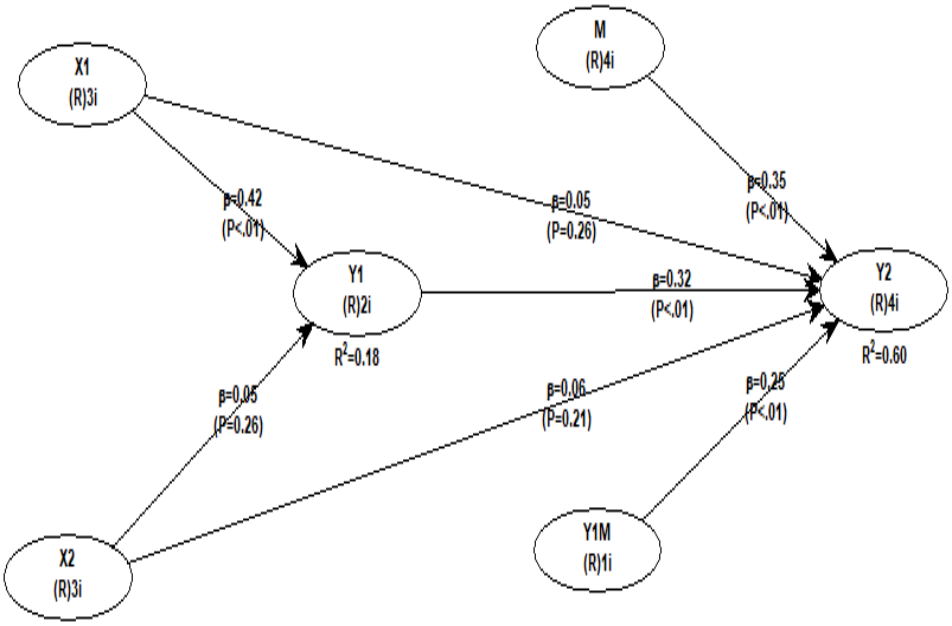

Figure 2. PLS Structural Models

Table 3. Structural Model of Indirect and Moderating Effect

Hypotheses	Direct Effect	Coefficient of Direct Effect	P-Value of Direct Effect	Description
1	$X_1 \rightarrow Y_1$	0.422	<0.001	Significant
2	$X_1 \rightarrow Y_2$	0.056	0.213	Not significant
3	$X_2 \rightarrow Y_1$	0.046	0.256	Not significant
4	$X_2 \rightarrow Y_2$	0.056	0.213	Not significant
7	$Y_1 \rightarrow Y_2$	0.323	<0.001	Significant

Table 4. Structural Model: Indirect and Moderating Effect

Hypoth eses	Indire ct Effect	Coefficient of Direct Effect		Coefficie nt of Indirect Effect	P-Value of Direct Effect		P-Value of Indire ct Effect	Descripti on
3	X1→ Y1→ Y2	X1 →Y1 = 0.422 *	Y1 → Y2 = 0.323*	0.1363				Significant
6	X2→ Y1 → Y2	X2 →Y1 = 0.046 **	Y1 → Y2 = 0.323*	0.0148	X2→ Y1 = 0.256	Y1 → Y2 = <0.001	0.000256	Significant
8	Y1 ←M→ Y2	M →Y1 = 0.249	M → Y2 = 0.353	0.0878	M →Y1 = <0.001	M → Y2 = <0.001	0.000001	Significant

Note : * significant, ** not significant

DISCUSSION

The Effect of Independence to Compliance with the Code of Ethics and Audit Quality

The results of this study revealed that the Independence Factor had a significant effect to Compliance with the Code of Ethics. The high independence factors will have an impact on the high compliance with the Code of Ethics. Thus, hypothesis 1 of this study was accepted.

Besides, the findings showed that the Independence Factor did not directly affect the Audit Quality. High independence factors will not have an impact on the high and low quality of audit. However, there was a significant indirect effect between the Independence Factors to Audit Quality through Compliance with the Code of Ethics which means that the higher of the Independence Factor, the higher of the Audit Quality through Compliance with the Code of Ethics will be. Thus, hypothesis 2 was rejected, but hypothesis 3 was accepted.

The interpretation of the findings of this study showed that there is a correlation between independence and compliance with the code of ethics of auditors in the region of South Sulawesi Province. These results proved that auditors' independence in the region of South Sulawesi Province can improve compliance with the code of ethics. But auditors' independence cannot improve audit quality directly. Auditors' independence can improve audit quality in South Sulawesi Region if it is through increased compliance with the code of ethics.

The findings of this study indicated that auditors in South Sulawesi Province have met the second general standard of the State Financial Examination Standard (*SPKN*), namely "In all matters relating to audit work, the inspection organization must be free in mental attitude from appearance and from personal, external, and organizations that can affect their independence. In addition, the

Accountant's Code of Ethics also states that independence is an attitude expected of an accountant, not to have a personal interest in carrying out his/her duties. From the statements, the examining organization or examiner must maintain its independence in all matters relating to the results of the examination, including the compliance with the examiner's code of ethics. The more independent of examining organization or examiner is the more obedient the examining organization or examiner of the examination code of ethics.

The results of this study supported the research of Krisnawati (2012), Oklivia (2014) and Ayuningtyas and Parmudji (2012) who argue that independence has no effect on audit quality. Likewise, Samelson et al. (2006) and Razak, Ramly and Haliah (2018) state independence has no relationship with audit quality. Thus, the results of this study do not support the statement of De Angelo (1981) stating that the better of the level of auditor independence, the better of the audit quality produced and vice versa.

However, the findings of this study proved that independence will affect audit quality if it is supported by a high level of compliance with audit quality. This is congruent with the Attribution Theory defined by Heider (1958) stating that a person's behavior is determined by a combination of internal and external forces. This force can be in the form of independence which can make auditors motivated to work better and improve compliance with a code of ethics so as to produce good audit quality. Auditor’s independence can influence audit quality through compliance with a code of ethics with several contributions, such as (1) auditor authority and responsibility in accordance with the job description specified in the organizational structure, and (2) most respondents agree that a logical, reliable and trusted opinion have been used by auditors in carrying out audit duties because the auditor complies with the code of ethics of the accountant.

The Effect of Commitment to Compliance with the Code of Ethics and Audit Quality.

This finding revealed that Commitment did not affect to Compliance with the Code of Ethics. Similarly, Commitment to Audit Quality did not have direct effect. But Commitment to Audit Quality will affect if it is supported by high Audit Compliance. Thus, hypotheses 4 and 5 of this study were rejected, but the hypothesis 6 was accepted.

These findings supported the research of Shaub et al. (1993) which surveyed CPA audits and found that there was no significant relationship between compliance with the code of ethics and commitment. Likewise, Yetmar and Eastman (2000), Lord and DeZoort (2001) revealed findings that were congruent with the results of this study, which found that there were no significant correlation. Thus the results of this study did not support the results of Jeffrey and Weatherholt's (1996) research. The results showed that accountants who have high professional commitment are more prone to adherence to ethics than accountants who have low professional commitment.

However, the findings of this study indicated that commitments that are supported by a high compliance code of ethics can lead to better audit quality. So the results of this study supported the research of Suarmaja et al. (2017) and Alfianto et al. (2015) which states that commitment factors have an impact on whether or not the good audit performance or quality. The higher of the commitment of the internal auditor followed by a good level of compliance will have an impact on the quality of work or audit quality of an auditor. This can occur because commitment will create a sense of belonging for the auditor towards the organization. This is congruent with Bhen et al. (1997) and Larkin's (1990) research results which stated that auditors in carrying out their work must increase their professional commitment, follow professional ethics in order to be able to present information relating to the client's business area honestly, so that the quality of

auditor work will increase linearly with increased commitment.

The Effect of Compliance with the Code of Ethics to Audit Quality

This finding showed that compliance with the Code of Ethics affects audit quality. The Compliance Level in the high Code of Ethics will have an impact on the high quality of audit (Y_1). **Thus, hypothesis 7 of this study was accepted**.

The finding was congruent with the results of research conducted by Sondakh et al. (2017) which states that there is an effect between compliance with the code of ethics and audit quality. This can be caused by auditors who are experienced in conducting audits who will always abide by the audit principles and comply with the applicable code of ethics, to produce good audit quality. An auditor in carrying out an audit process must be guided by the audit standards set by the Indonesian Accountants Association (*IAI*), namely general standards, field work standards, and reporting standards. In addition, auditors must also comply with the professional code of ethics that regulates the behavior of auditors in carrying out professional practices both with fellow members and with the general public.

This finding also supports the results of Carcello et al. (2004) study which states that experience factors, understanding the client industry, response to client needs and compliance to general audit standards are the determinant factors of audit quality. Audit quality is good if the auditor in the audit implementation follows the audit standard. In addition, the results of this study also support the opinion of Deis and Girous (1992) states that audit quality can be seen from the level of auditor compliance in carrying out various stages that should be carried out in an audit activity. Hence, auditors who comply to the code of ethics will produce good audit quality. This is because the ethical code of the auditor's profession is a code of ethics in carrying out the investigation process.

The Effect of Allowances to Mediate the Correlation between Compliance with the Code of Ethics and Audit Quality

This finding revealed that allowances affected to mediate the correlation between the Compliance with the Code of Ethics and Audit Quality. This means that if a high allowance will have an effect on the high and low correlation between the compliance with the Code of Ethics and Audit Quality. The higher of the Allowance Factor, it will affect the higher of the correlation between the Compliance with the Code of Ethics and Audit Quality. **Thus, hypothesis 8 of this study was accepted**.

The finding of this study was congruent with Siboro's (2016) research states that the Auditor's Functional Position Allowance as a moderating variable can moderate the correlation between auditor ethics, independence, competence, motivation and audit duration with internal audit quality in North Sumatra Province. Likewise, Arisinta's (2013) study found that competence, independence, time budget pressure, audit fees effect on audit quality. Independent variables of auditor's competence, auditor's independence, time budget pressure, and audit fees, simultaneously affect the dependent variable of audit quality.
In addition, the finding of this study was also congruent with the research results conducted by Kuencoro (2013), which revealed that Reward variables simultaneously contribute to the Employee Performance variable (Y), i.e., 37.6%. Likewise, the finding study of the research conducted by Tarigan et al. (2013) and Harjani et al. (2014) which states that there is a positive effect of audit fee towards auditor quality. With an increase in audit fees, it will increase audit quality.

IMPLICATIONS

The finding indicated that the allowances or fees are additional benefits offered to workers or employees that can improve the employees' quality, achievement, service, and work productivity.

The functional position of the auditor is carried out through work performance and auditor performance as mentioned in Presidential Regulation No. 5 in 2014. The regulation considers the auditor's job allowance through a credit number system by taking into account each activity item and or the accumulation of items of the assignment activities carried out. Civil Servants, who are appointed and assigned in full in the Auditor's Functional Position, are given functional office allowances in accordance with the workload and the responsibility of their work increases the quality, achievement, work productivity, and service. The better is the auditor's performance, so the higher is the job allowance given. Hence, the finding of this study was congruent with the Presidential Regulation No. 5 in 2014.

CONCLUSION

The Independence Factor had a significant effect on Compliance with the Code of Ethics, but does not directly affect Audit Quality. However, the Independence Factor can affect Audit Quality if it is through Compliance with the Code of Ethics. This means that the higher of the Independence Factor, it will affect the higher the Compliance with the Code of Ethics and Audit Quality if it is through Compliance with the Code of Ethics.

The Commitment Factor had no direct effect on Compliance with the Code of Ethics and on Audit Quality. However, Commitment to Audit Quality will affect if it is supported by High Audit Compliance. This means that Commitment can only improve Audit Quality if it is through Compliance with the Code of Ethics.

The Compliance with the Code of Ethics affected Audit Quality. This means that the level of compliance with the High Code of Ethics will have an effect on the high audit quality.

The allowances affected to mediate the correlation between the Compliance with the Code of Ethics and Audit Quality. This means that if a high allowance will have an effect on the high and low correlation between compliance with the Code of Ethics and Audit

Quality. The higher of the Allowance Factor will affect the higher of the correlation between Compliance with the Code of Ethics and Audit Quality.

Suggestions

a. It is recommended to form an auditor team, i.e., staffs that have 20-29 years of work experience, with Master degree of education background and prioritize men. It is intended that with the level of experience and education, the auditor team will be able to understand well the problems being audited because the auditor team is mature, experienced and supported by a good level of education. Understanding the issues that are well audited is expected to be able to conduct the report of the findings obtained in the investigation process honestly.
b. It is suggested to improve compliance with the code of ethics, it is necessary to increase independence**.**
c. It is suggested to improve audit quality; it needs to increase compliance with codes of ethics and allowances.
d. The further researches can be done by exploring variables that have not been investigated in research or exploring the results of this study by conducting qualitative research. In addition, it can also conduct further researches with a different methodology, for example conducting a different test and self rating scale test so that ambiguous data can be avoided.

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APPENDICES

Appendix 1. The Results of Instrument Validity Testing

Variables	Dimension	Item	Validity	Conclusion
Independence Variable (X1)	Free of all audited activities (X1.1)	X1.1.1	0.597	Valid
		X1.1.2	0.610	Valid
		X1.1.3	0.635	Valid
	Organizational status (X1.2)	X1.2.1	0.539	Valid
		X1.2.2	0.581	Valid
		X1.2.3	0.642	Valid
	Honest or objective (X1.3)	X1.3.1	0.661	Valid
		X1.3.2	0.700	Valid
		X1.3.3	0.573	Valid
Commitment variable (X2)	Affective Commitment (X2.1)	X2.1.1.	0.655	Valid
		X2.1.2.	0.610	Valid

		X2.1.3.	0.558	Valid
	Sustainable Commitment (X2.2)	X2.2.1	0.607	Valid
		X2.2.2	0.473	Valid
		X2.2.3	0.614	Valid
	Normative Commitment (X2.3)	X2.3.1	0.591	Valid
		X2.3.2	0.558	Valid
Compliance with the Code of Ethics Variable (Y1)	Ethical Awareness (Y1.1)	Y1.1.1	0.537	Valid
		Y1.1.2	0.513	Valid
		Y1.1.3	0.673	Valid
		Y1.1.4	0.672	Valid
	Attention to Professional Ethics (Y1.2)	Y1.2.1	0.520	Valid
		Y1.2.2	0.552	Valid
		Y1.2.3	0.531	Valid
Allowance Variable (M)	Education (M1.1)	M1.1.1	0.465	Valid
		M1.1.2	0.616	Valid
	Examination (M1.2)	M1.2.1	0.577	Valid
		M1.2.2	0.570	Valid
	Examiner Professional Development (M1.3)	M1.3.1	0.527	Valid
		M1.3.2	0.649	Valid
	Activities Supporting Task Implementation (M1.4)	M1.4.1	0.603	Valid
		M1.4.2	0.453	Valid
Audit Quality Variable (Y2)	Suitability with audit standards (Y2.1)	Y2.1.1	0.517	Valid
		Y2.1.2	0.553	Valid
	Compliance with audit procedures (Y2.2)	Y2.2.1	0.417	Valid
		Y2.2.2	0.539	Valid
	Free from misstatements in reporting (Y2.3)	Y2.3.1	0.528	Valid
		Y2.3.2	0.571	Valid
	Completeness of audit evidence documents (Y2.4)	Y2.4.1	0.657	Valid
		Y2.4.2	0. 604	Valid

Appendix 2. The Results of Instrument Reliability Testing

Variables	Reliability	Conclusion
Independence (X1)	0.794	Reliable
Commitment Variable (X2)	0.722	Reliable
Compliance with the Code of Ethics Variable (Y1)	0.655	Reliable
Allowance (M)	0.676	Reliable
Audit Quality (Y2)	0.664	Reliable

Appendix 3. Characteristics of respondents

Characteristic	Criteria	Frequency	Percentage
Gender	Male	134	67%
	Female	66	33%
Age	< 45 years old	13	7%
	45-56 years old	124	62%
	> 56 years old	63	32%

Education	S1	98	49%
	S2	102	51%
Years of service	10-19 years	52	26%
	20-29 years	115	58%
	> 30 years	33	17%

Appendix 4. Basic Interpretation of Item Scores in Research Variables

No.	Scores	Interpretation
1	1 – 1.8	Very Low
2	1.8 – 2.6	Low
3	2.6 – 3.4	Moderate
4	3.4 – 4.2	Good
5	4.2 – 5.0	Very Good

Source: Stemple (2004)

Appendix 5. Frequency and Percentage of Independence Variable

Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
X1.1.1	Frequency	1	18	54	71	56	200	3.82
	Percentage	0.5	9	27	35.5	28	100	
X1.1.2	Frequency	6	21	53	71	49	200	3.68
	Percentage	3	10.5	26.5	35.5	24.5	100	
X1.1.3	Frequency	5	17	48	70	60	200	3.82
	Percentage	2.5	8.5	24	35	30	100	
X1.2.1	Frequency	4	27	46	75	48	200	3.68
	Percentage	2	13.5	23	37.5	24	100	
X1.2.2	Frequency	6	30	59	60	45	200	3.54
	Percentage	3	15	29.5	30	22.5	100	
X.1.2.3	Frequency	5	29	59	69	38	200	3.53
	Percentage	2.5	14.5	29.5	34.5	19	100	
X1.3.1	Frequency	2	23	84	46	45	200	3.55
	Percentage	1	11.5	42	23	22.5	100	
X1.3.2	Frequency	7	38	57	58	40	200	3.43
	Percentage	3.5	19	28.5	29	20	100	
X1.3.3	Frequency	4	30	72	45	49	200	3.52
	Percentage	2	15	36	22.5	24.5	100	
Mean X1 Variable (Independence)								3.58

Appendix 6. Frequency and Percentage of Commitment Variable

Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
X2.1.1	Frequency	5	34	57	59	45	200	3.52
	Percent	2.5	17	28.5	29.5	22.5	100	
X2.1.2	Frequency	7	36	45	57	55	200	3.59
	Percent	3.5	18	22.5	28.5	17.5	100	
X2.1.3	Frequency	3	39	59	55	44	200	3.49
	Percent	1.5	19.5	29.5	27.5	22	100	
Mean Dimension of Affective Commitment (X2.1)								3.53
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
X2.2.1	Frequency	3	26	66	55	50	200	3.61
	Percent	1.5	13	33	27.5	25	100	
X2.2.2	Frequency	0	17	53	45	85	200	3.99
	Percent	0	8.5	26.5	22.5	42.5	100	
X2.2.3	Frequency	4	23	70	58	45	200	3.59
	Percent	2	11.5	35	29	22.5	100	
Mean Dimension of Continuous Commitment (X2.2)								3.73
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
X2.3.1	Frequency	0	19	55	79	47	200	3.77
	Percent	0	9.5	27.5	39.5	23.5	100	
X2.3.2	Frequency	1	24	47	85	43	200	3.73
	Percent	0.5	12	23.5	42.5	21.5	100	
Mean Normative Commitment (X2.3)								3.75
Mean X2 (Commitment)								3.66

Appendix 7. Frequency and Percentage of Compliance with the Code of Ethics Variable

Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
Y1.1.1	Frequency	0	4	60	82	54	200	3.93
	Percent	0	2	30	41	27	100	
Y1.1.2	Frequency	2	2	53	96	47	200	3.92

	Percent	1	1	26.5	48	23.5	100	
Y1.1.3	Frequency	0	4	49	90	57	200	4
	Percent	0	2	24.5	45	28.5	100	
Y1.1.4	Frequency	2	5	63	82	48	200	3.84
	Percent	1	2.5	31.5	41	24	100	
Mean Ethical Awareness Indicator (Y1.1)								3.92
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
Y1.2.1	Frequency	2	9	56	87	46	200	3,83
	Percent	1	4.5	28	43.5	23	100	
Y1.2.2	Frequency	0	4	44	89	63	200	4.05
	Percent	0	2	22	44.5	31.5	100	
Y1.2.3	Frequency	1	4	66	84	45	200	3.84
	Percent	5	2	33	42	22.5	100	
Mean Concern for Professional Ethics Indicator (Y1.2)								2.63
Mean Y1 Variable (Compliance with the Code)								3.37

Appendix 8. Frequency and Percentage of Allowance Variable

Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	total	
M1.1.1	Frequency	0	4	66	87	43	200	3.84
	Percent	0	2	33	43.5	21.5	100	
M1.1.2	Frequency	0	13	45	91	51	200	3.90
	Percent	0	6.5	22.5	45.5	25.5	100	
Mean Education Variables (M1.1)								3.87
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
M1.2.1	Frequency	0	12	47	90	51	200	3.9
	Percent	0	6	23.5	45	25.5	100	
M1.2.2	Frequency	8	30	66	54	42	200	3.46
	Percent	4	15	33	27	21	100	
Mean Examination Variable (M1.2)								3.68
Indicators	Respondent's Answer Score							

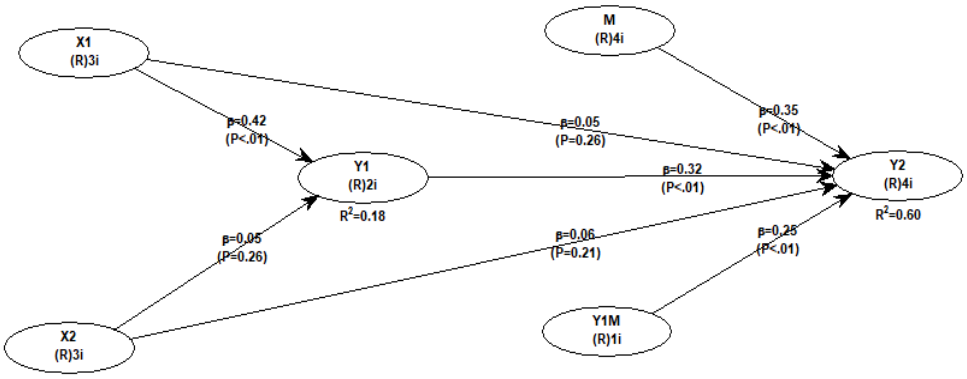
	Item	1	2	3	4	5	Total	Mean
M1.3.1	Frequency	2	58	50	42	48	200	3.38
	Percent	1	29	25	21	24	100	
M1.3.2	Frequency	1	13	47	98	41	200	3.82
	Percent	0.5	6.5	23.5	49	20.5	100	
Mean Examination Variable (M1.2)								3.60
Indicators	Respondent's Answer Score							
	Item	1	2	3	4	5	Total	Mean
M1.4.1	Frequency	0	35	77	38	50	200	3.52
	Percent	0	17.5	38.5	19	25	100	
M1.4.2	Frequency	0	4	43	79	74	200	4.12
	Percent	0	2	21.5	39.5	37	100	
Mean Examination Variable (M1.2)								3,82
Mean Y1 Variable (Compliance with the Code of Ethics)								3.74

Appendix 9. Frequency and Percentage of Audit Quality Variable

Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
Y2.1.1	Frequency	1	3	55	72	69	200	4.03
	Percent	0.5	1.5	27.5	36	34.5	100	
Y2.1.2	Frequency	34	78	38	49	1	200	3.52
	Percent	17	39	19	24.5	0.5	100	
Mean Suitability with audit standards Variable (Y2.1)								3.78
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
Y2.2.1	Frequency	1	3	55	72	69	200	4.2
	Percent	0.5	1.5	27.5	36	34.5	100	
Y2.2.2	Frequency	0	4	47	72	77	200	3.11
	Percent	0	2	23.5	36	38.5	100	
Mean Compliance with audit procedures variable (Y2.2)								3.66
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	

Y2.3.1	Frequency	0	4	34	83	79	200	4.19
	Percent	0	2	17	41.5	39.5	100	
Y2.3.2	Frequency	0	10	35	80	75	200	4.10
	Percent	0	5	17.5	40	37.5	100	
Mean Free from misstatements in reporting variable (Y2.3)								4.15
Indicators	Respondent's Answer Score							Mean
	Item	1	2	3	4	5	Total	
Y2.4.1	Frequency	2	13	46	82	57	200	3.89
	Percent	1	6.5	23	41	28.5	100	
Y2.4.2	Frequency	0	11	40	80	69	200	4.03
	Percent	0	5.5	20	40	34.5	100	
Mean Completeness of audit evidence documents variable(Y2.4)								3.96
Mean Y2 Variable (Audit Quality)								3.88

Appendix 10. Complete Model Analysis Result



Model fit and quality indices

Average path coefficient (APC) =0.213, P<0.001
Average R-squared (ARS) =0.390, P<0.001
Average adjusted R-squared (AARS) =0.381, P<0.001
Average block VIF (AVIF) =1.405, acceptable if <= 5, ideally <= 3.3
Average full collinearity VIF (AFVIF) =1.929, acceptable if <= 5, ideally <= 3.3
Tenenhaus GoF (GoF) =0.514, small >= 0.1, medium >= 0.25, large >= 0.36
Sympson's paradox ratio (SPR) =0.857, acceptable if >= 0.7, ideally = 1
R-squared contribution ratio (RSCR) =0.992, acceptable if >= 0.9, ideally = 1
Statistical suppression ratio (SSR) =1.000, acceptable if >= 0.7
Nonlinear bivariate causality direction ratio (NLBCDR) =0.929, acceptable if >= 0.7

General model elements

Missing data imputation algorithm: Arithmetic Mean Imputation
Outer model analysis algorithm: PLS Regression
Default inner model analysis algorithm: Warp3
Multiple inner model analysis algorithms used? No
Resampling method used in the analysis: Stable3
Number of data resamples used: 100
Number of cases (rows) in model data: 200
Number of latent variables in model: 6
Number of indicators used in model: 17
Number of iterations to obtain estimates: 6
Range restriction variable type: None
Range restriction variable: None
Range restriction variable min value: 0.000
Range restriction variable max value: 0.000
Only ranked data used in analysis? No

*** Path coefficients and P values ***

	Path coefficients	P values	Standard errors for path coefficients	Effect sizes for path coefficients
X1 Y1	0.422	<0.001	0.065	0.182
X1 Y2	0.045	0.259	0.070	0.011
X2 Y1	0.046	0.256	0.070	0.006
X2 Y2	0.056	0.213	0.070	0.006
M Y2	0.353	<0.001	0.066	0.218
Y1 Y2	0.323	<0.001	0.066	0.208
Y1 M	0.249	<0.001	0.067	0.160

*** Combined loadings and cross-loadings ***

	X1	X2	M	Y1	Y2	Y1M	Type (a	SE	P value
X1.1	0.773	-0.078	0.072	0.096	-0.021	0.030	Reflect	0.061	<0.001
X1.2	0.815	0.092	-0.095	-0.289	0.190	0.020	Reflect	0.060	<0.001
X1.3	0.786	-0.019	0.028	0.206	-0.176	-0.050	Reflect	0.061	<0.001
X2.1	-0.072	0.769	0.229	0.051	-0.322	0.228	Reflect	0.061	<0.001
X2.2	0.099	0.792	-0.051	-0.182	0.167	-0.012	Reflect	0.061	<0.001
X2.3	-0.029	0.818	-0.166	0.128	0.141	-0.203	Reflect	0.060	<0.001
M1.1	-0.090	-0.023	0.692	0.242	0.342	-0.065	Reflect	0.062	<0.001
M1.2	-0.004	0.104	0.757	-0.234	-0.110	0.298	Reflect	0.061	<0.001
M1.3	0.002	-0.058	0.797	-0.005	-0.252	0.007	Reflect	0.061	<0.001
M1.4	0.094	-0.024	0.669	0.021	0.071	-0.278	Reflect	0.062	<0.001
Y1.1	0.027	-0.030	-0.023	0.864	-0.015	-0.130	Reflect	0.060	<0.001
Y1.2	-0.027	0.030	0.023	0.864	0.015	0.130	Reflect	0.060	<0.001
Y2.1	0.196	0.097	0.260	-0.232	0.669	0.226	Reflect	0.062	<0.001
Y2.2	-0.000	-0.036	-0.176	0.057	0.681	-0.258	Reflect	0.062	<0.001

Y2.3	-0.077	-0.041	-0.229	-0.053	0.764	-0.020	Reflect	0.061	<0.001
Y2.4	-0.091	-0.011	0.152	0.198	0.794	0.050	Reflect	0.061	<0.001
M_Y1	0.000	0.000	0.000	-0.000	0.000	1.000	Reflect	0.058	<0.001

Notes: Loadings are unrotated and cross-loadings are oblique-rotated. SEs and P values are for loadings.

P values < 0.05 are desirable for reflective indicators.

*** Normalized combined loadings and cross-loadings ***

	X1	X2	M	Y1	Y2	Y1M
X1.1	0.771	-0.113	0.104	0.138	-0.031	0.043
X1.2	0.887	0.090	-0.093	-0.283	0.186	0.019
X1.3	0.839	-0.024	0.036	0.261	-0.223	-0.063
X2.1	-0.081	0.894	0.259	0.057	-0.364	0.258
X2.2	0.114	0.933	-0.058	-0.208	0.192	-0.013
X2.3	-0.033	0.917	-0.192	0.149	0.164	-0.236
M1.1	-0.156	-0.041	0.599	0.421	0.596	-0.112
M1.2	-0.004	0.119	0.763	-0.268	-0.126	0.342
M1.3	0.002	-0.058	0.808	-0.005	-0.252	0.007
M1.4	0.112	-0.029	0.756	0.025	0.085	-0.333
Y1.1	0.027	-0.031	-0.023	0.703	-0.015	-0.134
Y1.2	-0.034	0.039	0.029	0.661	0.019	0.168
Y2.1	0.308	0.153	0.409	-0.366	0.624	0.355
Y2.2	-0.000	-0.036	-0.176	0.057	0.707	-0.258
Y2.3	-0.075	-0.040	-0.223	-0.051	0.713	-0.020
Y2.4	-0.149	-0.018	0.249	0.324	0.623	0.083
M_Y1	0.000	0.000	0.000	-0.000	0.000	1.000

Note: Loadings are unrotated and cross-loadings are oblique-rotated, both after separate Kaiser Normalizations.

*** Pattern loadings and cross-loadings ***

****

	X1	X2	M	Y1	Y2	Y1M
X1.1	0.676	-0.078	0.072	0.096	-0.021	0.030
X1.2	0.953	0.092	-0.095	-0.289	0.190	0.020
X1.3	0.739	-0.019	0.028	0.206	-0.176	-0.050
X2.1	-0.072	0.752	0.229	0.051	-0.322	0.228
X2.2	0.099	0.830	-0.051	-0.182	0.167	-0.012
X2.3	-0.029	0.798	-0.166	0.128	0.141	-0.203
M1.1	-0.090	-0.023	0.375	0.242	0.342	-0.065
M1.2	-0.004	0.104	0.770	-0.234	-0.110	0.298
M1.3	0.002	-0.058	0.967	-0.005	-0.252	0.007
M1.4	0.094	-0.024	0.779	0.021	0.071	-0.278
Y1.1	0.027	-0.030	-0.023	0.965	-0.015	-0.130
Y1.2	-0.027	0.030	0.023	0.762	0.015	0.130
Y2.1	0.196	0.097	0.260	-0.232	0.428	0.226
Y2.2	-0.000	-0.036	-0.176	0.057	0.945	-0.258
Y2.3	-0.077	-0.041	-0.229	-0.053	0.997	-0.020

Y2.4	-0.091	-0.011	0.152	0.198	0.546	0.050
M_Y1	0.000	0.000	0.000	-0.000	0.000	1.000

Note: Loadings and cross-loadings are oblique-rotated.

*** Normalized pattern loadings and cross-loadings ***

	X1	X2	M	Y1	Y2	Y1M
X1.1	0.977	-0.113	0.104	0.138	-0.031	0.043
X1.2	0.932	0.090	-0.093	-0.283	0.186	0.019
X1.3	0.936	-0.024	0.036	0.261	-0.223	-0.063
X2.1	-0.081	0.851	0.259	0.057	-0.364	0.258
X2.2	0.114	0.951	-0.058	-0.208	0.192	-0.013
X2.3	-0.033	0.926	-0.192	0.149	0.164	-0.236
M1.1	-0.156	-0.041	0.654	0.421	0.596	-0.112
M1.2	-0.004	0.119	0.884	-0.268	-0.126	0.342
M1.3	0.002	-0.058	0.966	-0.005	-0.252	0.007
M1.4	0.112	-0.029	0.932	0.025	0.085	-0.333
Y1.1	0.027	-0.031	-0.023	0.990	-0.015	-0.134
Y1.2	-0.034	0.039	0.029	0.984	0.019	0.168
Y2.1	0.308	0.153	0.409	-0.366	0.674	0.355
Y2.2	-0.000	-0.036	-0.176	0.057	0.947	-0.258
Y2.3	-0.075	-0.040	-0.223	-0.051	0.970	-0.020
Y2.4	-0.149	-0.018	0.249	0.324	0.896	0.083
M_Y1	0.000	0.000	0.000	-0.000	0.000	1.000

Note: Loadings and cross-loadings shown are after oblique rotation and Kaiser Normalization.

*** Structure loadings and cross-loadings ***

	X1	X2	M	Y1	Y2	Y1M
X1.1	0.773	-0.345	0.139	0.402	0.260	0.194
X1.2	0.815	-0.293	-0.014	0.254	0.160	0.067
X1.3	0.786	-0.322	0.019	0.354	0.139	0.111
X2.1	-0.360	0.769	0.093	0.016	0.027	0.103
X2.2	-0.295	0.792	-0.053	-0.049	0.023	-0.020
X2.3	-0.308	0.818	-0.152	-0.028	-0.026	-0.083
M1.1	0.128	-0.013	0.692	0.474	0.613	0.488
M1.2	-0.063	0.050	0.757	0.220	0.423	0.422
M1.3	0.025	-0.096	0.797	0.237	0.375	0.363
M1.4	0.097	-0.090	0.669	0.254	0.411	0.292
Y1.1	0.410	-0.058	0.293	0.864	0.512	0.496
Y1.2	0.322	0.013	0.397	0.864	0.585	0.596
Y2.1	0.175	0.008	0.512	0.408	0.669	0.492
Y2.2	0.195	-0.013	0.324	0.430	0.681	0.367
Y2.3	0.156	0.017	0.381	0.442	0.764	0.445
Y2.4	0.163	0.013	0.576	0.562	0.794	0.565
M_Y1	0.155	-0.003	0.535	0.632	0.643	1.000

Note: Loadings and cross-loadings are unrotated.

*** Normalized structure loadings and cross-loadings ***

	X1	X2	M	Y1	Y2	Y1M
X1.1	0.771	-0.345	0.139	0.402	0.260	0.194
X1.2	0.887	-0.319	-0.015	0.277	0.174	0.073
X1.3	0.839	-0.343	0.020	0.378	0.148	0.118
X2.1	-0.418	0.894	0.107	0.018	0.031	0.119
X2.2	-0.347	0.933	-0.063	-0.057	0.027	-0.024
X2.3	-0.346	0.917	-0.170	-0.031	-0.029	-0.093
M1.1	0.111	-0.012	0.599	0.410	0.531	0.423
M1.2	-0.064	0.051	0.763	0.222	0.426	0.425
M1.3	0.025	-0.097	0.808	0.241	0.380	0.368
M1.4	0.110	-0.101	0.756	0.287	0.464	0.330
Y1.1	0.334	-0.047	0.239	0.703	0.416	0.403
Y1.2	0.247	0.010	0.304	0.661	0.448	0.456
Y2.1	0.163	0.008	0.478	0.381	0.624	0.459
Y2.2	0.202	-0.014	0.336	0.447	0.707	0.381
Y2.3	0.145	0.016	0.356	0.413	0.713	0.416
Y2.4	0.128	0.010	0.452	0.441	0.623	0.443
M_Y1	0.107	-0.002	0.367	0.434	0.442	0.686

Note: Loadings and cross-loadings shown are unrotated and after Kaiser Normalization.

*** Indicator weights ***

	X1	X2	M	Y1	Y2	Y1M	Type (a	SE	P value
	VIF	WLS	ES						
X1.1	0.411	0.000	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.328	1	0.318						
X1.2	0.434	0.000	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.435	1	0.354						
X1.3	0.418	0.000	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.361	1	0.329						
X2.1	0.000	0.407	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.325	1	0.313						
X2.2	0.000	0.419	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.383	1	0.332						
X2.3	0.000	0.433	0.000	0.000	0.000	0.000	Reflect	0.065	<0.001
	1.451	1	0.354						
M1.1	0.000	0.000	0.324	0.000	0.000	0.000	Reflect	0.066	<0.001
	1.275	1	0.224						
M1.2	0.000	0.000	0.354	0.000	0.000	0.000	Reflect	0.066	<0.001
	1.402	1	0.268						
M1.3	0.000	0.000	0.373	0.000	0.000	0.000	Reflect	0.066	<0.001
	1.506	1	0.298						
M1.4	0.000	0.000	0.314	0.000	0.000	0.000	Reflect	0.067	<0.001
	1.260	1	0.210						
Y1.1	0.000	0.000	0.000	0.579	0.000	0.000	Reflect	0.063	<0.001
	1.318	1	0.500						
Y1.2	0.000	0.000	0.000	0.579	0.000	0.000	Reflect	0.063	<0.001
	1.318	1	0.500						
Y2.1	0.000	0.000	0.000	0.000	0.315	0.000	Reflect	0.067	<0.001

	1.231	1	0.211						
Y2.2	0.000	0.000	0.000	0.000	0.321	0.000	Reflect	0.066	<0.001
	1.244	1	0.218						
Y2.3	0.000	0.000	0.000	0.000	0.359	0.000	Reflect	0.066	<0.001
	1.453	1	0.274						
Y2.4	0.000	0.000	0.000	0.000	0.373	0.000	Reflect	0.066	<0.001
	1.524	1	0.297						
M_Y1	0.000	0.000	0.000	0.000	0.000	1.000	Reflect	0.058	<0.001
	0.000	1	1.000						

Notes: P values < 0.05 and VIFs < 2.5 are desirable for formative indicators; VIF = indicator variance inflation factor; WLS = indicator weight-loading sign (-1 = Simpson's paradox in l.v.); ES = indicator effect size.

*** Latent variable coefficients ***

	R-squared coefficients	Adjusted R-squared coefficients	Composite reliability coefficients	Cronbach's alpha coefficients	Average variances extracted	Full collinearity VIFs	Q-squared coefficients
X1			0.834	0.702	0.627	1.577	
X2			0.836	0.706	0.630	1.259	
M			0.820	0.706	0.534	1.759	
Y1	0.176	0.168	0.854	0.659	0.746	2.365	0.190
Y2	0.605	0.594	0.819	0.704	0.531	2.460	0.608
Y1 M			1.000	1.000	1.000	2.152	

Linearity Assumption Test

Model Summary and Parameter Estimates

Dependent Variable: Y1

Equation	Model Summary					Parameter Estimates			
	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	,001	,163	1	198	,687	27,982	-,019		
Logarithmic	,001	,130	1	198	,719	29,032	-,479		
Inverse	,001	,128	1	198	,721	26,975	12,650		
Quadratic	,003	,319	2	197	,727	23,853	,274	-,005	
Cubic	,006	,577	2	197	,563	25,594	,000	,007	,000
Compound	,001	,108	1	198	,743	27,700	,999		
Power	,000	,088	1	198	,767	28,644	-,015		
S	,000	,094	1	198	,760	3,289	,417		
Growth	,001	,108	1	198	,743	3,321	-,001		
Exponential	,001	,108	1	198	,743	27,700	-,001		

The independent variable is X2.

Model Summary and Parameter Estimates

Dependent Variable: Y2

Equation	Model Summary					Parameter Estimates			
	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	,056	11,691	1	198	,001	26,876	,160		
Logarithmic	,059	12,436	1	198	,001	14,399	5,099		
Inverse	,061	12,892	1	198	,000	36,949	-153,273		
Quadratic	,060	6,276	2	197	,002	20,773	,552	-,006	
Cubic	,060	6,276	2	197	,002	20,773	,552	-,006	,000
Compound	,057	11,954	1	198	,001	26,761	1,005		
Power	,060	12,698	1	198	,000	17,669	,170		
S	,062	13,107	1	198	,000	3,622	-5,091		
Growth	,057	11,954	1	198	,001	3,287	,005		
Exponential	,057	11,954	1	198	,001	26,761	,005		

The independent variable is X1.

Model Summary and Parameter Estimates

Dependent Variable: Y2

Equation	Model Summary					Parameter Estimates			
	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	,000	,051	1	198	,821	31,695	,013		
Logarithmic	,000	,045	1	198	,832	30,926	,342		
Inverse	,000	,021	1	198	,884	32,294	-6,234		
Quadratic	,001	,058	2	197	,943	29,843	,144	-,002	
Cubic	,001	,110	2	197	,896	29,634	,123	,000	-4,231E-5
Compound	,001	,143	1	198	,706	31,163	1,001		
Power	,001	,140	1	198	,709	29,773	,020		
S	,001	,099	1	198	,753	3,476	-,441		
Growth	,001	,143	1	198	,706	3,439	,001		
Exponential	,001	,143	1	198	,706	31,163	,001		

The independent variable is X2.