THE INFLUENCE OF CONTINUING PROFESSIONAL EDUCATION, AUDITOR ASSIGNMENT PERIOD, INDUSTRY SPECIALIZATION ON COMPLIANCE WITH AUDIT STANDARDS, IMPLEMENTATION OF DATA ANALYTIC TECHNIQUES, AND QUALITY OF AUDIT RESULTS IN AUDITORS OF NON-BIG 4 PUBLIC ACCOUNTING FIRMS IN THE CITY OF SURABAYA

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ABSTRACT
The aim of this research is to examine and analyze the influence of Continuing Professional Education, Auditor Assignment Period, Industry Specialization on Compliance with Audit Standards, Implementation of Data Analytic Techniques, and Quality of Audit Results. This research took respondents from auditors from non-big 4 public accounting firms in the city of Surabaya from junior auditor to partner level, with a total sample of 60 people. Hypothesis testing in this research uses analysis with the SmartPLS application by testing the outer model and inner model. The research results show that continuing professional education has a significant effect on compliance with audit standards, the auditor's assignment period has a significant effect on the implementation of data analytic techniques, industry specialization has a significant effect on the quality of audit results, implementation of data analytic techniques has a significant effect on the quality of audit results.

Keywords: Continuing Professional Education, Auditor Assignment Period, Specialization Industry, Audit Standards Compliance, Implementation of Data Analytic Techniques, Quality of Audit Results.

INTRODUCTION

Current developments in the business world have made it clear that a good company needs to be audited by a public accounting firm because ownership of a company can be owned by various parties so that company management in preparing financial reports is required to be able to convey information accurately and as it is, both to shareholders and to interested parties.

The financial report will later be used by stakeholders as a basis for making decisions. Stakeholder decisions can be taken appropriately if the financial reports issued by company management have been audited by a competent and independent auditor.

This is in line with the role of public accounting firms as gatekeepers who can provide assurance regarding the quality of public company financial reporting that does not harm stakeholders. (Ronen and Yaari, 2008., Levitt, 1998). Currently, there are still many problems
faced from the low quality of audit results, for example, audit opinions issued by public accounting firms are reasonable without modification, problems are still found that are detrimental to stakeholders.

*big 4* public accounting firms and *non-big 4* public accounting firms. This is because *big 4* public accounting firms have more experience and case studies, so they can produce higher quality audit results. Good.

In Indonesia itself, public accounting firms have been criticized by various parties for failing to protect the interests of stakeholders, especially in cases of manipulation of PT financial reports. Garuda Indonesia Tbk which has violated audit standards and decreased the quality control system of public accounting firms (Financial Professional Development Center, 2019). Apart from that, there are many cases of manipulation of financial reports involving several *non-big 4* public accounting firms such as KAP Purwanto, Sungkoro, and Surja, KAP Tanubrata, Sutanto, Fahmi, Bambang & Partners, KAP Amir Abadi Jusuf, Aryanto, Mawar, and colleagues at 2016 – 2023 will make the public increasingly skeptical of the public accounting profession in providing audit and assurance services to clients.

The credibility of auditors has also become a concern following the imposition of many administrative sanctions on public accountants and public accounting firms for being proven to have violated and not complied with regulations regarding public accountants, including: maintaining competence through continuing professional education, good behavior, integrity, responsibility, complying with and implementing standards professional public accountant, and submit to the Minister a business activity report or annual program realization report.

Based on data from the financial development and professional development center, it was found that several public accountants were subject to sanctions administrative either in the form of recommendations to carry out certain obligations, written warnings, restrictions on providing services to certain types of entities, restrictions on providing certain services, freezing permits, revoking permits, and/or fines.
**Table 1.1**
List of Administrative Sanctions for Public Accounting Firms

<table>
<thead>
<tr>
<th>No</th>
<th>Types of Sanctions</th>
<th>Number of public accounting firms subject to sanctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recommendation</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Warning</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Entity restrictions</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Service restrictions</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>License suspension</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Center for Financial Professional Development (2019)

**Table 1.2**
Administrative Sanctions for Public Accountants

<table>
<thead>
<tr>
<th>No</th>
<th>Types of Sanctions</th>
<th>Type of Violation</th>
<th>Number of public accountants subject to sanctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recommendation</td>
<td>continuing professional education reports</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unfulfilled participatory credit units</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S professional standards for public accountants</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Warning</td>
<td>Not following continuing professional education</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>License suspension</td>
<td>S professional standards for public accountants</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Administrative fines</td>
<td>Delay in reporting continuing professional education</td>
<td>28</td>
</tr>
</tbody>
</table>

Amount sanctions issued 134

Source: Center for Accountant Development and Appraisal Services (2015)
So, based on the above data for 2015 - 2019, both public accounting firms and public accountants were subject to administrative sanctions due to several customers, such as delays in reporting continuing professional education, not meeting the specified number of participatory credit units, violations of public accounting professional standards and other administrative provisions.

Research on audit quality in Indonesia, whether directly or indirectly, mostly uses public accounting firms affiliated with the big 4 (Siregar and Utama, 2006, Permatasari, 2005, Sanjaya, 2008). Big 4 public accounting firms are often associated with better quality audit results compared to non-big 4 public accounting firms. This is because big 4 public accounting firms have more intense insight, experience, capacity and reputation compared to non-big 4 public accounting firms. - big 4 (Becker et al, 1998).

At present, the quality of audit results is not only based on the auditor's competence alone, but is also aligned with technological developments and has entered a new era that integrates technology such as artificial intelligence, machine learning, data analytics, and blockchain which have the potential and capability to transform the audit process.

Based on the explanation that has been presented, it is important to know how much influence continuous professional education, auditor assignment period, industry specialization has on compliance with audit standards, implementation of data analytic techniques, and the quality of audit results on auditors of non-big 4 public accounting firms in the city of Surabaya.

LITERATURE REVIEW

Auditing

Aren et al. (2010) states the definition of audit as follows "The accumulation and evaluation of evidence about information to determine and reports on the degrees of correspondence between the information and established criteria. Auditing should be done by a competent, independent person."

Continuing Professional Education

The Indonesian Association of Accountants (2007) stated the definition of continuing professional education as "Continuous learning activities learning) that must be taken by professional accountants so that they can always maintain, improve and develop their professional competence." This is in line with what Amir Abadi Jusuf (2017:42) said that
competency is a must for auditors which can be obtained from formal audit and accounting education, sufficient practical experience, as well as continuing professional education. It is hoped that after participating in this continuing professional education, auditors can gain sufficient understanding of the auditee company.

**Auditor Assignment Period**

Auditor assignment period (a audit tenure) is the audit engagement period between a public accounting firm and the same auditee.

**Industry Specialization**

Solomon *et al* (1999) said that auditors who have industry specialization have a deeper understanding than auditors who do not have industry specialization because auditors have more experience in that industry so they can offer high quality audit and non-audit services or reduce audit costs which provides economic benefits. (Hogan, 1999).

**Auditing Standards**

Audit standards are a measure of the implementation of actions that serve as general guidelines for auditors in carrying out audits (Mulyadi, 2002). This is similar to SA 200 (revised 2021) regarding the overall objectives of independent auditors and the implementation of audits based on audit standards which states that (a) auditors must comply with all audit standards relevant to the audit, (b) auditors are not permitted to state their compliance with audit standards in auditor's report unless the auditor has complied with the provisions of this audit standard and all other audit standards relevant to the audit. The emphasis on standards is closely related to criteria or measures of the quality of performance of the action to achieve the objectives of using the procedure.

**Data Analytics**

Data Analytics is an activity of examining, cleaning, transforming and modeling available big data to obtain conclusions using algorithms (Cao *et al*, 2015). The Indonesian Institute of Accountants (2023) defines data analytics as a new approach used for fraud prevention and detection involving processing and examining patterns in actual data.

**RESEARCH HYPOTHESIS**

H1: Continuing professional education has a significant effect on audit standard compliance.
H2: Continuous professional education has a significant effect on the implementation of data analytic techniques.

H3: Continuous professional education has a significant effect on the quality of audit results.

H4: The auditor's assignment period has a significant effect on compliance with audit standards.

H5: The auditor's assignment period has a significant effect on the implementation of data analytic techniques.

H6: The auditor's assignment period has a significant effect on the quality of audit results.

H7: Industry specialization has a significant effect on audit standard compliance.

H8: Industry specialization has a significant effect on the implementation of data analytic techniques.

H9: Industry specialization has a significant effect on the quality of audit results.

H10: Compliance with audit standards has a significant effect on the quality of audit results.

H11: Implementation of data analytic techniques has a significant effect on the quality of audit results.

RESEARCH METHODS

This type of research uses a quantitative approach with correlational methods to test the influence of independent variables, namely continuing professional education, auditor assignment period, industry specialization, intervening variables, namely compliance with audit standards, implementation of data analytic techniques, on the dependent variable, namely the quality of audit results. The population of this study is office a kuntan public in the city of Surabaya which is not affiliated with the office a kuntan p public big 4 (PwC, Delloite, EY, KPMG). Sample determination was carried out using a purposive sampling
method, where samples were taken based on the needs/criteria determined by the researcher.

RESULTS AND DISCUSSION

Instrument Testing

Data processing uses SmartPLS 3.0 validity and reliability testing which can be presented in 3 types, namely Cronbach’s Alpha, rho_A, Composite Reliability, Average Variance Extracted (AVE). The data is presented in table 4.4 as follows:

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing Professional Education (X1)</td>
<td>0.637</td>
<td>0.634</td>
<td>0.805</td>
<td>0.580</td>
</tr>
<tr>
<td>Auditor Assignment Period (X2)</td>
<td>0.838</td>
<td>0.838</td>
<td>0.925</td>
<td>0.861</td>
</tr>
<tr>
<td>Industry Specialization (X3)</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Implementation of Data Analytic Techniques (Z2)</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Audit Standards Compliance (Z1)</td>
<td>0.712</td>
<td>0.713</td>
<td>0.839</td>
<td>0.634</td>
</tr>
<tr>
<td>Quality of Audit Results (Y)</td>
<td>0.598</td>
<td>0.621</td>
<td>0.831</td>
<td>0.711</td>
</tr>
</tbody>
</table>

Source: Data processed by SmartPLS, 2023

Hypothesis test

Hypothesis testing in this research was carried out by looking at the T-Statistics values and P-Values. The research hypothesis is declared accepted if the P-Value is <0.05. The following are the results of hypothesis testing obtained in this research:
### Table 4.18
*Outer Loading After Elimination*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Information</th>
<th>Original Samples</th>
<th>T-Statistics</th>
<th>P-Values</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Continuing Professional Education -&gt; Audit Standards Compliance</td>
<td>0.484</td>
<td>3,266</td>
<td>0.001</td>
<td>H1 Accepted (Significant)</td>
</tr>
<tr>
<td>H2</td>
<td>Continuing Professional Education -&gt; Implementation of Data Analytic Techniques</td>
<td>0.232</td>
<td>1,504</td>
<td>0.133</td>
<td>H2 Rejected (Not significant)</td>
</tr>
<tr>
<td>H3</td>
<td>Continuing Professional Education -&gt; Quality of Audit Results</td>
<td>0.099</td>
<td>0.700</td>
<td>0.484</td>
<td>H3 Rejected (Not Significant)</td>
</tr>
<tr>
<td>H4</td>
<td>Auditor Assignment Period -&gt; Audit Standards Compliance</td>
<td>0.106</td>
<td>0.809</td>
<td>0.419</td>
<td>H4 Rejected (Not Significant)</td>
</tr>
<tr>
<td>H5</td>
<td>Auditor Assignment Period -&gt; Implementation of Data Analytic Techniques</td>
<td>0.289</td>
<td>2,233</td>
<td>0.026</td>
<td>H5 Accepted (Significant)</td>
</tr>
<tr>
<td>H6</td>
<td>Auditor Assignment Period -&gt;</td>
<td>0.069</td>
<td>0.607</td>
<td>0.544</td>
<td>H6 Rejected (Not Significant)</td>
</tr>
<tr>
<td>H7</td>
<td>Industry Specialization -&gt; Audit Standards Compliance</td>
<td>0.170</td>
<td>1,237</td>
<td>0.217</td>
<td>H7 Rejected (Not Significant)</td>
</tr>
<tr>
<td>H8</td>
<td>Industry Specialization -&gt; Implementation</td>
<td>-0.095</td>
<td>0.743</td>
<td>0.458</td>
<td>H8 Rejected (Not Significant)</td>
</tr>
</tbody>
</table>
of Data Analytic Techniques

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Coefficient</th>
<th>t-value</th>
<th>P-value</th>
<th>Acceptance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H9</td>
<td>Industry Specialization -&gt; Quality of Audit Results</td>
<td>0.286</td>
<td>2.505</td>
<td>0.013</td>
<td>H9 Accepted (Significant)</td>
</tr>
<tr>
<td>H10</td>
<td>Audit Standards Compliance -&gt; Quality of Audit Results</td>
<td>0.115</td>
<td>0.893</td>
<td>0.372</td>
<td>H10 Rejected (Not Significant)</td>
</tr>
<tr>
<td>H11</td>
<td>Implementation of Data Analytic Techniques -&gt; Quality of Audit Results</td>
<td>0.485</td>
<td>4.055</td>
<td>0.000</td>
<td>H11 Accepted (Significant)</td>
</tr>
</tbody>
</table>

Source: Data processed by SmartPLS, 2023

Based on table 4.18 above, it can be seen that of the 11 hypotheses proposed in this research, 4 hypotheses were accepted because they had an influence shown to have a P-Value < 0.05, while 7 hypotheses were rejected because they had an influence shown to have a P-Value > 0.05 so it can be stated that 4 hypotheses were accepted and 7 hypotheses were rejected.

Direct Analysis Effect

Testing the significance of the influence path between variables in accordance with the research hypothesis using software SmartPLS is carried out using a path table coefficient of bootstrapping results. The results of the bootstrapping test can be seen in Figure 4.7 above. The results of bootstrapping result in testing the significance of each path. In testing, the hypothesis can be accepted if the calculated t value (T-statistic) is > 1.96 or P-Values smaller than the error rate (α) 5%. The results of hypothesis testing using PLS bootstrapping results in accordance with table 4.18 above can be explained as follows:

1. Continuing professional education has a significant effect on audit standard compliance

   Based on table 4.18 above, it can be seen that the coefficient value of the influence of continuing professional education on compliance with audit standards is 0.484
(positive) with the T - statistic of 3.266 (> 1.96) and P- Values 0.001 (<α=5%), so it was decided that continuing professional education had a significant effect on compliance with audit standards. Based on these results, the first hypothesis which states that continuing professional education has an effect on compliance with audit standards, can be accepted (H1 is accepted). This supports research by Tambunan, Baktiar (2022) which states that continuing professional education influences compliance with audit standards.

2. Continuing professional education does not have a significant effect on the implementation of data analytic techniques

Based on table 4.18 above, it can be seen that the coefficient value of the influence of continuing professional education on the implementation of data analytic techniques is 0.232 (close to zero) with the T - statistic of 1.504 (< 1.96) and P- Values 0.133 (>α=5%), so it was decided that continuing professional education had no significant effect on the implementation of data analytic techniques. Based on these results, the second hypothesis which states that continuing professional education has an effect on the implementation of data analytic techniques, cannot be accepted (H2 is rejected). This does not support research by Experis Finance (2016) which states that in the audit process, data analytics is able to help an auditor to find additional risks, understand existing risks better, provide more in-depth assurance, and provide a point of view to management.

3. Continuing professional education does not have a significant effect on the quality of audit results

Based on table 4.18 above, it can be seen that the coefficient value of the influence of continuing professional education on the quality of audit results is 0.099 (close to zero) with the T - statistic of 0.700 (< 1.96) and P- Values 0.484 (>α=5%), so it was decided that continuing professional education had no significant effect on the quality of audit results. Based on these results, the third hypothesis which states that continuing professional education has an effect on the quality of audit results, cannot be accepted (H3 is rejected). This does not support Adityasih's (2010) research which states that continuing professional education has a positive effect on the quality of audit results.

4. The auditor’s assignment period does not have a significant effect on compliance with audit standards

Based on table 4.18 above, it can be seen that the coefficient value of the auditor's
assignment period on compliance with audit standards is 0.106 (close to zero) with the T-statistic of 0.809 (< 1.96) and P-Values 0.419 (>α=5%), so it was decided that the auditor's assignment period had no significant effect on compliance with audit standards. Based on these results, the fourth hypothesis which states that the auditor's assignment period has an effect on compliance with audit standards, cannot be accepted (H4 is rejected).

5. The auditor's assignment period has a significant effect on the implementation of data analytic techniques

Based on table 4.18 above, it can be seen that the coefficient value of the influence of the auditor's assignment period on the implementation of data analytic techniques is 0.289 (positive) with the T-statistic of 2.233 (> 1.96) and P-Values 0.026 (<α=5%), so it was decided that the auditor's assignment period had a significant effect on the implementation of data analytic techniques. Based on these results, the fifth hypothesis, which states that the auditor's assignment period influences the implementation of data analytic techniques, can be accepted (H5 is accepted).

6. The auditor's assignment period does not have a significant effect on the quality of the audit results

Based on table 4.18 above, it can be seen that the coefficient value of the auditor's assignment period on the quality of audit results is 0.069 (close to zero) with the T-statistic of 0.607 (< 1.96) and P-Values 0.544 (>α=5%), so it was decided that the auditor's assignment period had no significant effect on the quality of the audit results. Based on these results, the sixth hypothesis which states that the auditor's assignment period influences the quality of audit results, cannot be accepted (H6 is rejected). This does not support Myers' research et al (2003) which states that the quality of audit results increases according to the increase in the auditor's assignment period.

7. Industry specialization does not have a significant effect on audit standard compliance

Based on table 4.18 above, it can be seen that the coefficient value of industry specialization on audit standard compliance is 0.170 (close to zero) with the T-statistic of 1.237 (< 1.96) and P-Values 0.217 (>α=5%), so it was decided that industry
specialization has no significant effect on audit standards compliance. Based on these results, the seventh hypothesis which states that industry specialization has an effect on audit standards compliance, cannot be accepted (H7 is rejected).

8. **Industry specialization does not have a significant effect on the implementation of data analytic techniques**

   Based on table 4.18 above, it can be seen that the industrial specialization coefficient value for the implementation of data analytic techniques is -0.095 (below zero) with the T-statistic of 0.743 (<1.96) and P-Values 0.458 (>\(\alpha=5\%\)), so it was decided that industry specialization had no significant effect on the implementation of data analytic techniques. Based on these results, the eighth hypothesis which states that industrial specialization influences the implementation of data analytic techniques, cannot be accepted (H8 is rejected).

9. **Industry specialization has a significant effect on the quality of audit results**

   Based on table 4.18 above, it can be seen that the coefficient value of industry specialization on the quality of audit results is 0.286 (positive) with the T-statistic of 2.505 (>1.96) and P-Values 0.013 (<\(\alpha=5\%\)), so it was decided that industry specialization had a significant effect on the quality of audit results. Based on these results, the ninth hypothesis which states that industry specialization influences the quality of audit results, can be accepted (H9 is accepted). This supports the research of Solomon et al (1999) which states that auditors who have industry specialization have deeper experience than auditors who do not have industry specialization.

10. **Compliance with audit standards does not have a significant effect on the quality of audit results**

    Based on table 4.18 above, it can be seen that the coefficient value of compliance with audit standards on the quality of audit results is 0.115 (close to zero) with the T-statistic of 0.893 (<1.96) and P-Values 0.372 (>\(\alpha=5\%\)), so it was decided that compliance with audit standards had no significant effect on the quality of audit results. Based on these results, the tenth hypothesis which states that compliance with audit standards affects the quality of audit results, cannot be accepted (H10 is rejected). This does not support research by Devianti et al (2017) which states that the implementation of ISA-based audits has a significant effect on the quality of audit results.
11. Implementation of data analytic techniques has a significant effect on the quality of audit results

Based on table 4.18 above, it can be seen that the coefficient value for implementing data analytic techniques is 0.485 (positive) with the T-statistic of 4.055 (> 1.96) and P-Values 0.000 (<α=5%), so it was decided that the implementation of data analytic techniques had a significant effect on the quality of audit results. Based on these results, the eleventh hypothesis which states that the implementation of data analytic techniques has an effect on the quality of audit results, can be accepted (H11 is accepted). This supports Newman's research et al (2021) which states that data analytic techniques have a positive effect on the collection of audit evidence and Le et al (2022) which states that information support has a positive and significant effect on the quality of audit results.

Final Result Analysis

![Diagram of Final Analysis Results]

**Figure 4.8**

**Final Analysis Results**

*direct results analysis effect and indirect effect above*, it can be concluded that the quality of audit results is influenced by the auditor's assignment period through the implementation of data analytic techniques, the quality of audit results is influenced by industry specialization, and compliance with audit standards is influenced by continuing professional education.
CONCLUSION

Based on the research results and discussion of hypotheses that have been carried out previously and taking into account the stated research objectives, this research has the following conclusions,

1. This research shows that continuing professional education has a significant effect on audit standard compliance.
2. This research shows that continuing professional education does not have a significant effect on the implementation of data analytic techniques.
3. This research shows that continuing professional education does not have a significant effect on the quality of audit results.
4. This research shows that the auditor's assignment period does not have a significant effect on audit standard compliance.
5. This research shows that the auditor's assignment period has a significant effect on the implementation of data analytic techniques.
6. This research shows that the auditor's assignment period does not have a significant effect on the quality of audit results.
7. This research shows that industry specialization does not have a significant effect on audit standards compliance.
8. This research shows that industry specialization does not have a significant effect on the implementation of data analytic techniques.
9. This research shows that industry specialization has a significant effect on the quality of audit results.
10. This research shows that compliance with audit standards does not have a significant effect on the quality of audit results.
11. This research shows that the implementation of data analytic techniques has a significant effect on the quality of audit results.
SUGGESTION

Based on the results of the analysis and discussion in this research, several parties related to this research conveyed the following suggestions,

1. It is better to expand respondents in future research and increase the number of samples in the research, not only from the scope of auditors in the city of Surabaya so that the results can represent the situation in each province and increase and expand the scope of the position of auditors who fill out the questionnaire.

2. This research was carried out during busy periods season for auditors so that it influences the number of questionnaires distributed which is not optimal due to the large number of external auditors who go to the field at the end of the year, so the research suggests that distribution of questionnaires should not be carried out in the months when auditors are busy (peak seasons).

3. Variables in further research can be added with other variables because there are still many variables that can influence the quality of audit results which are not discussed in this research.

BIBLIOGRAPHY


