



JIATIS

**Journal of International Accounting, Taxation
and Information Systems**

<https://jiatis.com/index.php/journal>

Online ISSN 3048-085X

The Influence of ATLAS Utilization, Auditor Competence, and Time Pressure on Audit Quality at Public Accounting Firms in Bali Province

Anak Agung Putu Rista Andari^{1*}, Ni Luh Sari Widhiyani², I Ketut Sujana³

¹⁻³Faculty of Economics and Business, Universitas Udayana Denpasar, Indonesia

E-mail: ¹⁾ aaristaandari@gmail.com, ²⁾ sariwidhiyani@unud.ac.id, ³⁾ ketutsujana_fe@unud.ac.id

ARTICLE INFO

Article History

Received : 16.07.2025

Revised : 19.08.2025

Accepted : 26.08.2025

Article Type: Research
Article

*Corresponding author:

Anak Agung Putu Rista
Andari

aaristaandari@gmail.com



ABSTRACT

The reliability of financial statements depends heavily on audit quality, which evaluates both the auditing procedures and their outcomes as performed by auditors. This research aimed to gather empirical evidence regarding how Atlas usage, auditor expertise, and time constraints influence audit quality within public accounting firms operating in Bali Province. Using purposive sampling methods, the study collected 46 observations from Bali-based public accounting firms that utilize Atlas software. The researchers employed multiple linear regression analysis to examine the data. The findings shed light that Atlas implementation positively and significantly impacts audit quality, auditor expertise also demonstrates a significant positive relationship with audit quality, and time constraints show a significant influence on audit quality outcomes. These findings align with attribution theory principles, as they demonstrate how individual behavioral factors influence auditor performance, which subsequently affects the overall quality of audit work.

Keywords: Auditor Competence, Audit Quality, Time Pressure, Use of ATLAS

1. Introduction

Financial reports are documents containing a company's financial data for a specific accounting period. Companies rely on financial statements to convey their performance to both internal and external stakeholders, aiding in the decision-making process. The existence of financial statements in companies is viewed as guidance for certain parties in assessing the quality of a company. Financial statements must be presented accurately and in accordance with existing facts and appropriately according to applicable regulations to provide the best and most useful information. To ensure that financial statements can be said to be of high quality when viewed from aspects of relevance, reliability, comprehensibility, verifiability and neutrality, these financial statements must first be audited by auditors at Public Accounting Firms (Kusuma & Arini, 2020).

Public Accountants are professionals who have obtained permits from the Minister to provide services in the form of practice as private accountants who work independently. Audit services play a crucial role in scrutinizing the financial records of a company as the information disclosed by external auditors can impact the company's reputation and are required to deliver high-quality audits. An audit is said to be of high quality if the report provides assurance that the financial statements are free from material errors caused by fraud or mistakes. Therefore, auditors must be guided by audit standards established by the Indonesian Institute of Public Accountants (IAPI) (Setiawan et al., 2022).

Auditor professionalism is very much needed to support audit implementation to produce quality audits. A professional auditor is one who demonstrates competence and meets the required standards when performing their responsibilities. Auditors are required to adhere to the guidelines set forth by the Indonesian Institute of Public Accountants (IAPI) while carrying out their tasks. An auditor is required to adhere to fundamental principles of professional ethics, including principles of honesty, impartiality, expertise, diligence, secrecy, and ethical conduct as well (Setiawan et al., 2022).

One example of ethical code violations committed by auditors was found in the PT Garuda Indonesia case. In the PT Garuda Indonesia case, there were indications of falsification of profit and loss reports thereby violating principles aimed at guaranteeing auditor work results. With indications of such fraud, auditors who conducted audits found that the company had violated integrity, objectivity, professional behavior and competence obligations in the auditor's code of ethics (Rahayu & Wilasittha, 2023). These indications of fraud raised public skepticism about the quality of audits produced.

The quality of an audit refers to how likely auditors are to detect mistakes in financial statements and disclose them through audit reports. Auditors can provide opinions in their reports that the audited financial statements have fairness value. In addition, audit quality can be described as the various ways in which auditors are able to identify any discrepancies that may arise within the financial reporting and accounting systems of their clients. Auditors have a duty to uphold audit quality while fulfilling their responsibilities, and must adhere to auditing standards and ethical codes for accountants to guide them in these tasks (Samosir et al., 2022). According to IAPI (2017), audits performed by auditors can be considered to be of superior quality when they adhere to both auditing and quality control standards. Auditors who demonstrate strong skills are anticipated to competently execute audit responsibilities in alignment with established criteria.

Harahap (2015) states that the end product of an audit is determined by whether the audit process follows standards for examination and reporting, as well as quality control measures that auditors can justify based on their ethical responsibilities as professionals. Auditors must act professionally during audits to uphold the quality of the reports, ensuring that no one is negatively impacted and earning the trust of those who rely on financial statements. To support the auditor profession in meeting audit standards and documenting audit processes, IAPI published ATLAS.

ATLAS is a software program created in Microsoft Excel that is used for conducting audits and recording the outcomes to form conclusions (Prajanto, 2020). ATLAS aids auditors in the completion of audit responsibilities. The goal behind creating ATLAS is to mitigate potential risks during audits and to enhance the quality of supporting documentation (Setiawan et al., 2022). ATLAS was chosen because this application has been recommended by PPPK for use by public accounting firms. The use of ATLAS in implementing audit procedures will be more effective and efficient with more directed documentation processes. In addition, the use of ATLAS aims to suppress the potential for risks and speed up work and improve audit quality (Haniifah & Pramudyastuti, 2022).

ATLAS is utilized by auditors to review client financial statements based on audit cycle sequences or procedures. The audit cycle within ATLAS consists of three stages: risk assessment, risk response, and reporting (finishing and reporting), in accordance with International Standards on Auditing (ISA) (Haniifah & Pramudyastuti, 2022). Rahayu & Wilasittha (2023) found that the use of ATLAS is very beneficial in conducting audit risk assessments because ATLAS has been arranged according to applicable audit standards, so auditors become more directed in carrying out their duties. However, the research also explains the weaknesses and strengths of ATLAS. ATLAS weaknesses include not yet providing audit process summaries oriented to government accounting standards, if there are input errors it can affect subsequent audit cycles because the data process is integrated, and ATLAS is Microsoft Excel-based which can only be filled by one person. Thus, using ATLAS is associated with punctuality and meeting quality standards when providing Independent Accountant Reports as per agreed audit commitments (Krismonanda et al., 2021).

Previous investigation by Wardhana (2021) and Umroh (2024) stated that ATLAS has a positive effect on audit quality with ATLAS, auditors become easier to carry out their duties in accordance with SAP. Different from research conducted by Setiawan et al. (2022) stating that ATLAS has no effect on audit quality.

Auditors must possess strong personal characteristics, sufficient knowledge, and specialized expertise in order to meet the standards for audit quality. Kurnia et al. (2014) state that the initial overarching guideline states that audits should be conducted by individuals with adequate expertise and technical knowledge as creators of reports. Auditor proficiency refers to the skills possessed by auditors while performing their responsibilities (Sangkala, 2024). The expertise of auditors can be evaluated based on their level of experience and the knowledge they have acquired. Education and specialized training are sources of knowledge for auditors. Auditor experience is determined by the length of time they have been conducting financial statement audits and the number of assignments they have successfully completed. Experience in implementing financial statement audits can be seen when auditors work and are responsible for assigned tasks (Sihombing et al., 2021). Previous research by Yuniar & Sapari (2019) and Ahmad et al. (2024) highlight that having a high level of skill positively impacts the quality of audits. It is evident that audits are more likely to be successful when conducted by competent auditors.

In addition to auditor competence, time pressure can affect audit quality. Auditors are under pressure to produce high-quality reports within tight time constraints, leading them to rely heavily on client explanations and presentations instead of gathering evidence of client wrongdoing (Angelina, 2017). In previous research conducted by Anggoro & Septemberizal (2023), Sitepu et al. (2023) and Rosadi & Waluyo (2017) explained that time pressure can improve the quality of audits. Different from research results conducted by Aswar et al. (2022) stating that time pressure has a negative effect on audit quality, the higher the pressure received, the lower the audit results produced. Auditors must still behave professionally in carrying out their duties. Under pressure, auditors may exhibit dysfunctional behavior by rushing through audit procedures or taking shortcuts, ultimately compromising the quality of their work. If the pressure received by an auditor is so high because of the time given to complete their tasks, then some work will be skipped.

Based on the problem description outlined above concerning the factors that shape audit quality, as well as findings from previous studies, the results remain varied and inconsistent. Hence, the researchers are interested in conducting this study to gather empirical evidence on how the use of ATLAS software influences audit quality in public accounting firms. Further, the study seeks to examine the impact of auditor competence on audit quality and to assess the effect of time constraints on the quality of audits.

2. Literature Review

2.1. The Effect of ATLAS Utilization on Audit Quality at Public Accounting Firms in Bali Province

ATLAS is a Microsoft Excel application. Audit process advancement is influenced by information technology advancement (Mulyadi, 2007). The benefits of using ATLAS facilitate examination, improve adequacy and effectiveness of time, costs and human resources (HR). ATLAS allows auditors to open various types of electronic data or information so they can detect false statements (fraud). The use of ATLAS uses attribution theory on audit quality. The theory of attribution provides backing for how the implementation of ATLAS can impact the quality of audits. This theory delves into the reasons behind a person's behavior in social situations, known as Dispositional Attributions and Situational Attributions. ATLAS serves as an external influence that can lead to alterations in an individual's conduct.

The more frequently ATLAS is utilized, the more favorable the outcomes of audits. This is confirmed by findings from a study completed by Aini et al. (2020) showing that ATLAS utilization affects audit quality with results obtained that auditors carry out their duties well according to their code of ethics. This research was also conducted by Krismonanda et al (2021), Wardhana (2016), Nugrahaningtyas & Priyastiwi (2024), Umroh (2024), Haniifah & Pramudyastuti (2022) stating that ATLAS utilization has a positive effect on audit quality. According to the study, ATLAS supports auditors in completing their tasks in line with protocol, and also assists in saving time by organizing working papers automatically.

H1: ATLAS utilization has a positive effect on audit quality

2.2. The Effect of Auditor Competence on Audit Quality at Public Accounting Firms in Bali Province

Competence is the fundamental foundation of a person in doing work to produce effective and superior performance. The higher the competence possessed by an auditor, the more reliable the resulting reports can

be trusted for their truth. An auditor who has good competence in education, experience and training will better understand various problems in financial statements. Auditor competence is in accordance with attribution theory, competence is an internal factor (Dispositional Attribution) that can influence a person in carrying out all their activities.

Auditor competence can help auditors understand and apply new provisions in auditing standards established by professional organizations to improve audit quality and indirectly will affect auditor performance itself Neghe et al. (2018). The more competence auditors have, the more quality audits will be produced. This supports research conducted by Agustin et al. (2023) showing that competence has a significant positive effect on auditor performance. Research conducted by Gea & Widhiyani, 2018; Kurnia et al., 2014; Munawarah, 2023; Ningsih et al., 2013; Pairingan et al., 2018; Perdana & Kurnia, 2016; Rizky & Dwi Astuti, 2023; Saputra & Kuntadi, 2024; Saputri & Kuntadi, 2024 state that auditor skills play a crucial role in determining the quality of audits, as demonstrated by the fact that auditors with the right level of experience are able to deliver high-quality audits.

H2: Auditor competence has a positive effect on audit quality

2.3. The Effect of Time Pressure on Audit Quality at Public Accounting Firms in Bali Province

Time pressure is a situation where an auditor is able to make time efficient according to predetermined time. High levels of time pressure possessed by auditors often make auditors conduct audits that do not comply with established standards, so the quality of audits produced decreases. For some auditors, time pressure does not affect auditors in carrying out their duties. Some auditors provide quality audits despite receiving high pressure. Auditors who conduct audits already know for sure the tasks and functions they have as well as the planning and audit processes implemented, so time pressure does not affect audit quality (Widhianingsih et al., 2024)

Time pressure influences audit quality in support of attribution theory, which delves into the rationale behind individuals' actions. This theory unpacks the various factors at play in social judgments, such as Dispositional Attributions and Situational Attributions, that shape behavior. Time pressure is an external factor (Situational Attribution) that causes changes in a person's behavior. Time pressure is considered as another factor that influences auditor behavior thus affecting the quality of audits produced. However, this situation may not affect some auditors in carrying out their duties.

Research conducted by Nirmala & Cahyonowati (2013) concluded that time pressure has a significantly positive effect on audit quality. Anggoro & Septemberizal (2023) discovered through their research that time constraints can actually improve the quality of audits. According to research by Filicia & Handayani, 2025; Gede, 2016; Kurniawan & Anggraeni, 2025; Pikirang et al., 2017; Priscilla & Arsjah, 2024; Rizal & Liyundira, 2016; Widhianingsih et al., 2024 state that the pressure of time positively impacts the quality of audits. It can enhance the efficiency of time in performing audits and auditors already have their own distribution of work tasks.

H3: Time pressure has a positive effect on audit quality

2.4. Conceptual Framework

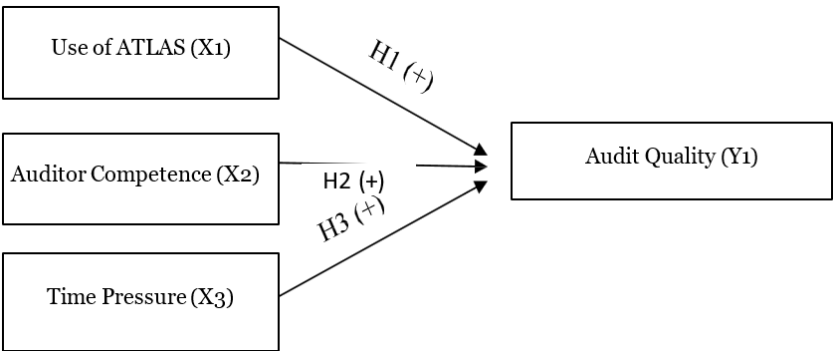


Figure 1. Conceptual Framework

3. Methodology

3.1. Research Design

This study employs a quantitative methodology using an associative approach to explore the connections between multiple variables. This technique can be seen as a research method rooted in optimistic principles that is utilized to examine specific populations.

3.2. Research Location or Scope of Area

The location of this research is at Public Accounting Firms (KAP) located in Bali Province. KAP Bali Province was chosen this time because the number of auditors in Bali Province is adequate and is seen as capable of describing auditors in Indonesia. Based on IAPI 2024 data, there are 20 KAPs still registered in Bali Province.

3.3. Research Variables

This research uses audit quality as the dependent variable (Y), which is a variable influenced by other variables (Sugiyono, 2018). The independent variables consist of three aspects: ATLAS utilization (X1), auditor competence (X2), and time pressure (X3), which serve as factors affecting audit quality.

3.4. Population, Sample and Sample Determination Method

This study focuses on 128 auditors from 20 Public Accounting Firms in Bali. Out of the 20 KAPs that are registered with IAPI 2024, only 18 are currently reported to be operating actively. This data was obtained through direct confirmation by calling Public Accounting Firms via telephone and conducting surveys to KAP locations in the Bali area.

This study focuses on auditors from KAP Bali Province as the research sample. The method of selecting participants in this study is purposive sampling, which involves choosing participants based on specific criteria. The criteria used include: a) Auditors who have used ATLAS, b) Work period of more than 1 year. Based on survey results and confirmation, there are 46 respondents who meet the criteria used in the sample determination method.

3.5. Types and Sources of Data

The research divides data into different categories depending on the type and source. Two categories of data are identified: quantitative data, which includes numerical measurements like the count of auditors at various Public Accounting Firms, and qualitative data, which includes responses from questionnaires using a Likert scale (Sugiyono, 2018). Meanwhile, qualitative data consists of non-numeric information such as names and addresses of research objects obtained from the list of Public Accounting Firms registered with the Indonesian Institute of Public Accountants.

According to various sources, information is categorized into two main types: primary data and secondary data. Primary data is collected firsthand from survey respondents using questionnaires distributed by researchers. On the other hand, secondary data is gathered from sources other than the original, such as a compilation of Public Accounting Firms in Bali registered with the Indonesian Institute of Public Accountants.

3.6. Data Collection Method

The data collection method in this research uses survey method with questionnaire (questionnaire) technique as the main instrument. According to Gulo (2002), data collection is an activity to obtain information to achieve research objectives. Surveys are conducted on samples representing the population, with questions that must be answered by respondents. Questionnaires are arranged using a modified 4-point Likert scale, without neutral options, to encourage respondents to choose their attitude tendencies. Answer scores consist of: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4) (Sugiyono, 2018). The use of this scale is intended to obtain more firm and directed data in measuring respondent perceptions.

3.7. Research Instruments

3.7.1. Validity Test

The validity test determines if a questionnaire is reliable. If the questions in the questionnaire can effectively assess what is intended to be measured, then it is considered valid (Ghozali, 2016). If the correlation between each indicator and the overall score for the construct is significant, then the question indicators are considered to be valid (Ghozali, 2016).

3.7.2. Reliability Test

Reliability measurement is done with the help of SPSS. Reliability submission is determined by calculating the value of Cronbach's alpha, where instruments can be said to be reliable if they have Cronbach's alpha coefficient > 0.006 (Sugiyono, 2018).

3.8. Data Analysis Techniques

3.8.1. Descriptive Statistical Analysis

Descriptive analytics can provide a snapshot of data by examining various metrics such as averages, spread, extremes, distribution shape, and symmetry (Ghozali, 2016).

3.8.2. Classical Assumption Tests

a. Normality Test

The normality assessment examines whether the residual terms within the regression framework follow a normal distribution pattern. According to Ghozali (2016), researchers may employ two methodological approaches to evaluate the normality of residuals: visual examination through graphical representations and formal statistical testing procedures.

b. Multicollinearity Test

The multicollinearity evaluation investigates the presence of intercorrelation among predictor variables within the regression framework. As outlined by Ghozali (2016), this study assesses multicollinearity through the examination of tolerance values alongside their corresponding variance inflation factors (VIF).

c. Heteroscedasticity Test

The heteroscedasticity analysis determines whether the regression model exhibits consistent error variance across observations or demonstrates variability in residual variance between different data points. Ghozali (2016) emphasizes that robust regression models should demonstrate homoscedasticity, characterized by uniform variance distribution rather than heteroscedastic patterns.

3.8.3. Multiple Linear Regression Test

Multiple linear regression analysis involves using parameter coefficients to determine the impact of independent variables on dependent variables. Researchers rely on this statistical technique because it assumes linearity and is typically tested at a significance level of $\alpha = 0.05$ (Sugiyono, 2018). The regression equation model used in this study is outlined below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where:

Y : Audit Quality

α : Constant

$\beta_1 - \beta_3$: Regression Coefficients

X1 : Independent variable, ATLAS utilization

X2 : Independent variable, auditor independence

X3 : Independent variable, auditor competence

e : Standard error

3.8.4. Hypothesis Testing

a. F Test (Model Feasibility)

The F test is utilized to evaluate the viability of various linear regression models by determining if all independent variables collectively have a notable impact on the dependent variable. A significance value (p-value) less than 0.05 indicates that the model is suitable for use, while a p-value greater than 0.05 suggests that the model is not viable (Ghozali, 2016).

b. Coefficient of Determination Test (R^2 and Adjusted R^2)

This test measures the extent to which independent variables can explain variations in dependent variables. R^2 values range from 0 to 1, but tend to increase with variable additions, even if not significant. Therefore, Adjusted R^2 is used, which considers the number of variables in the model and can increase or decrease (Ghozali, 2016).

c. t Test (Partial Significance Test)

The t test can be utilized to study the impact of individual independent variables on dependent variables. When the p-value is equal to or less than 0.05, it suggests that the variable has a significant effect (accepting H_1). Conversely, a p-value greater than 0.05 indicates that the variable does not have a significant effect (accepting H_0) (Ghozali, 2016).

4. Results and Discussion

4.1. Results

4.1.1. Respondent Characteristics Data

Table 1. Respondent Characteristics Data

Characteristics	Classification	Number (people)	Percentage (%)
Gender	Male	29	63.0%
	Female	17	37.0%
Total		46	100%
Age	20–30 Years	9	19.6%
	31–40 Years	32	69.6%
	>40 Years	5	10.9%
Total		46	100%
Education	Bachelor's	39	84.8%
	Master's	7	15.2%
Total		46	100%
Work Experience	1–5 Years	18	39.1%
	6–10 Years	24	52.2%
	>10 Years	4	8.7%
Total		46	100%

Source: Primary data (processed), 2025

Drawing from the tabulated data, the respondent profile reveals that males constitute the predominant portion of participants at 63.0%, while the age distribution is concentrated within the 31–40 years bracket, representing 69.6% of the sample. Educational attainment demonstrates a strong emphasis on undergraduate qualifications, with 84.8% of respondents holding bachelor's degrees. Professional tenure indicates that the largest segment (52.2%) possesses 6–10 years of work experience.

4.1.2. Research Instrument Testing

1) Validity Test

Table 2. Validity Test Results

No	Variable	Item Statement	Pearson Correlation	Status
1	Audit quality (Y)	Y1	0.850	Valid
		Y2	0.788	Valid
		Y3	0.598	Valid
		Y4	0.546	Valid
		Y5	0.734	Valid
		Y6	0.877	Valid
2	ATLAS utilization (X1)	X1.1	0.907	Valid
		X1.2	0.806	Valid
		X1.3	0.915	Valid
		X1.4	0.801	Valid
3	Auditor competence (X2)	X2.1	0.818	Valid
		X2.2	0.819	Valid
		X2.3	0.941	Valid
		X2.4	0.951	Valid
		X2.5	0.970	Valid
		X2.6	0.950	Valid
4	Time pressure (X3)	X3.1	0.926	Valid
		X3.2	0.975	Valid
		X3.3	0.955	Valid

Source: Primary data (processed), 2025

The correlation analysis presented in Table 2 demonstrates that every indicator within the constructs of ATLAS utilization, auditor competence, time pressure, and audit quality exhibits Pearson correlation coefficients exceeding the threshold value of 0.30 ($r > 0.3$) when measured against their respective total scores. These findings substantiate the validity of all measurement items employed in the current investigation.

2) Reliability Test

Table 3. Reliability Test Results

No	Variable	Cronbach's Alpha	Status
1	Audit quality (Y)	0.817	Reliable
2	ATLAS utilization (X1)	0.879	Reliable
3	Auditor competence (X2)	0.958	Reliable
4	Time pressure (X3)	0.949	Reliable

Source: Primary data (processed), 2025

The reliability analysis presented in Table 3 indicates that all measurement instruments demonstrate Cronbach's Alpha coefficients exceeding the minimum acceptable threshold of 0.60. This statistical evidence confirms that each research instrument possesses adequate internal consistency and reliability.

3) Descriptive Statistical Analysis

Table 4. Descriptive Statistics of Research Variables

Variable	N	Minimum	Maximum	Mean	Std. Dev
Audit quality (Y)	46	14	24	20.39	2.481
ATLAS utilization (X1)	46	8	16	13.67	2.161
Auditor competence (X2)	46	12	24	20.00	3.841
Time pressure (X3)	46	6	12	10.80	1.529

Source: Primary data (processed), 2025

The descriptive statistical summary presented in Table 4 encompasses several key measures including the lowest and highest observed values, central tendency measures, variability indicators, and sample size (denoted as N) for the analyzed data. The descriptive statistical examination of the study variables yields the following outcomes:

- a. Audit Quality (Y) demonstrates a range spanning from 14 to 24, with a mean score of 20.39, suggesting that participating auditors exhibit favorable audit quality performance. The standard deviation of 2.481 remains considerably lower than the mean value, signifying minimal variability within the dataset. This relationship between the standard deviation and mean indicates homogeneous data distribution with limited dispersion across the audit quality measurements.
- b. ATLAS Utilization (X1) exhibits values ranging between 8 and 16, achieving a mean score of 13.67, which reflects positive perceptions regarding ATLAS system implementation among auditors. With a standard deviation of 2.161 that falls below the mean value, the variable demonstrates consistent responses with restricted variance. This pattern suggests uniform distribution characteristics and minimal data scatter within the ATLAS utilization construct.
- c. Auditor Competence (X2) spans from 12 to 24, registering a mean value of 20.00, indicating satisfactory competency levels among the auditor participants. The standard deviation of 3.841, while remaining below the mean, reveals acceptable data consistency. The ratio between these measures confirms relatively concentrated data points with manageable dispersion throughout the competence variable.
- d. Time Pressure (X3) ranges from 6 to 12, with a mean value of 10.80, reflecting moderate time pressure conditions experienced by auditors. The standard deviation of 1.529 represents the smallest variance relative to its mean among all variables, demonstrating highly consistent responses. This statistical relationship indicates exceptionally uniform data distribution with minimal variability in time pressure perceptions.

4) Classical Assumption Tests

- a. Normality Test

Table 5. Normality Test (One-Sample Kolmogorov-Smirnov)

One-Sample Kolmogorov-Smirnov Test	
N	46
Test Statistic	0,101
Asymp. Sig. (2-tailed)	0,200

Source: Primary data (processed), 2025

According to the results of the One-Sample Kolmogorov-Smirnov Test presented in Table 5, the Asymp. Sig. (2-tailed) Kolmogorov-Smirnov value is 0.200, which surpasses the alpha value of 0.05. This suggests that the data in the study follows a normal distribution, leading to the conclusion that the model fulfills the criteria for normality.

- b. Multicollinearity Test

Table 6. Multicollinearity Test (Tolerance and Variance Inflation Factor)

Variable	Tolerance	VIF
ATLAS utilization (X1)	0.939	1.065
Auditor competence (X2)	0.820	1.219
Time pressure (X3)	0.867	1.153

Source: Primary data (processed), 2025

According to Table 6, there are no independent variables with tolerance values below 0.10 and no independent variables with VIF values above 10. Thus, the regression model does not exhibit any signs of multicollinearity.

c. Heteroscedasticity Test

Table 7. Heteroscedasticity Test (Glesjer Test)

Variable	T	Sig.
ATLAS utilization (X1)	0.282	0.780
Auditor competence (X2)	-0.767	0.448
Time pressure (X3)	-0.043	0.966

Source: Primary data (processed), 2025

According to Table 7, the values for ATLAS utilization, auditor competence, and time pressure are all higher than 0.05. This indicates that the variables studied do not have a significant impact on the dependent variable, absolute residual, suggesting that heteroscedasticity symptoms are not present in this research.

5) Multiple Linear Regression Analysis**Table 8. Summary of Multiple Linear Regression Analysis Results**

Regression Coefficients				
Variable	B	Std. Error	t	Sig
(Constant)	4,924	2,547	1,933	0,060
ATLAS utilization (X1)	0,295	0,127	2,330	0,025
Auditor competence (X2)	0,279	0,076	3,664	0,001
Time pressure (X3)	0,541	0,186	2,906	0,006
F Statistic	: 15,165			
Sig F	: 0,000			
R ²	: 0,520			

Source: Primary data (processed), 2025

According to the information provided in Table 8, the equation for multiple linear regression can be formulated in the following manner:

$$Y = 4.924 + 0.295 X1 + 0.279 X2 + 0.541 X3 + e$$

- The constant value of 4.924 shows that if ATLAS utilization, auditor competence variable, and time pressure are equal to 0 (zero), then audit quality has a value of 4.924.
- $X1 = +0.295$ shows that ATLAS utilization has a positive influence direction on audit quality; if ATLAS utilization increases, then audit quality will experience an increase.
- $X2 = +0.279$ shows that auditor competence has a positive influence direction on audit quality; if auditor competence increases, then audit quality will experience an increase.
- $X3 = +0.541$ shows that time pressure has a positive influence direction on audit quality; if time pressure increases, then audit quality will experience an increase.

6) Determination Analysis

According to Table 8, the R² value is observed to be 0.520. The analysis is conducted utilizing the formula provided below:

$$D = R^2 \times 100\% \quad D = 0.520 \times 100\% \quad D = 52\%$$

The R² value of 52 percent indicates that ATLAS utilization (X1), auditor competence (X2), and time pressure (X3) collectively explain 52 percent of the variation in audit quality. The remaining 48 percent is attributed to other factors not examined in this study.

7) Model Feasibility Test (F Test)

The F test is used to test whether all independent variables included in the model have simultaneous influence on the dependent variable (Ghozali, 2016). If the F test results state significance F or p-value $< \alpha = 0.05$, then the research hypothesis is accepted and independent variables significantly influence the dependent variable. Conversely, if the F test results state significance F or p-value $> \alpha = 0.05$, then the research hypothesis is rejected and independent variables do not significantly influence the dependent variable (Ghozali, 2016).

According to the information provided in Table 8, the calculated F-value is 15.165 with a significance level of 0.000, indicating that the regression model is a good fit for the data and can be used to analyze the impact of independent variables on dependent variables.

8) Hypothesis Testing (t Test)

a. Impact of ATLAS Utilization on Audit Quality

The statistical analysis demonstrates a significance level of 0.025 ($p < 0.05$), leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis. ATLAS utilization exhibits a statistically significant positive relationship with audit quality, as evidenced by the regression coefficient $\beta_1 = 0.295$. This confirms that enhanced ATLAS utilization corresponds to improved audit quality, supporting the first research hypothesis.

b. Impact of Auditor Competence on Audit Quality

The results indicate a significance level of 0.001 ($p < 0.05$), resulting in null hypothesis rejection and alternative hypothesis acceptance. Auditor competence demonstrates a statistically significant positive influence on audit quality, with a regression coefficient $\beta_2 = 0.279$. These findings confirm that higher auditor competence levels contribute to enhanced audit quality, validating the second research hypothesis.

c. Impact of Time Pressure on Audit Quality

The analysis reveals a significance level of 0.006 ($p < 0.05$), warranting null hypothesis rejection and alternative hypothesis acceptance. Time pressure shows a statistically significant positive effect on audit quality, characterized by the regression coefficient $\beta_3 = 0.541$. This indicates that increased time pressure correlates with improved audit quality, thereby supporting the third research hypothesis.

4.2. DISCUSSION

4.2.1. The Effect of ATLAS Utilization on Audit Quality at Public Accounting Firms in Bali Province

According to the initial testing of the hypothesis in this study, it suggests that using ATLAS significantly improves the quality of audits. This indicates that enhancing the use of ATLAS could lead to better audit quality at Public Accounting Firms in Bali Province. Hence, the first hypothesis of this study is supported. ATLAS aids auditors in their audit responsibilities.

The findings of this study align with a study by Aini et al. (2020), which found that using ATLAS significantly improves the quality of audits. The results suggest that auditors effectively adhere to their ethical standards while performing their responsibilities. This research was also conducted by Krismonanda et al. (2021) stating that ATLAS utilization can help auditors complete audit tasks according to audit standards. Based on this research, the benefits of ATLAS are to facilitate examination, improve adequacy and effectiveness of time, costs and human resources (HR). ATLAS allows auditors to open various types of electronic data or information so they can detect false statements (fraud) and facilitate auditors in preparing working papers so as to improve audit quality.

The research results support the theory used, namely attribution theory. Attribution theory in this research explains the influence of ATLAS implementation on audit quality, where this theory discusses situations around that cause a person's behavior in social perception commonly called Dispositional Attributions and Situational Attributions. ATLAS is an external factor that causes changes in a person's behavior, with ATLAS utilization being very beneficial for auditors in conducting risk assessments, because ATLAS has been arranged according to applicable audit standards. The existence of ATLAS helps auditors become more directed in carrying out their duties and produce good audit quality and can carry out their duties according to procedures.

4.2.2. The Effect of Auditor Competence on Audit Quality at Public Accounting Firms in Bali Province

The empirical findings from this study's second hypothesis testing demonstrate a statistically significant positive relationship between auditor competence and audit quality. These results suggest that enhanced competency levels among auditors within Bali Province's Public Accounting Firms correspond to improved audit quality outcomes, thereby validating the second research hypothesis. Auditor competence encompasses

the professional expertise and technical proficiency that auditors apply in executing their professional responsibilities.

These findings align with prior research conducted by Agustin et al. (2023), which similarly established a significant positive association between auditor competence and audit quality, providing additional empirical support for the observed relationship in the current investigation. Research conducted by Gea & Widhiyani, 2018; Kurnia et al., 2014; Munawarah, 2023; Ningsih et al., 2013; Pairingan et al., 2018; Perdana & Kurnia, 2016; Rizky & Dwi Astuti, 2023; Saputra & Kuntadi, 2024; Saputri & Kuntadi, 2024 obtained results that auditor competence has a significant positive effect on audit quality. Auditor competence can be measured through experience and knowledge possessed by auditors. Formal education and specialized training are ways to acquire knowledge. The auditor's level of experience is determined by their history of conducting financial statement audits, including the duration and quantity of tasks performed. Experience in implementing financial statement audits can be seen when auditors work and are responsible for assigned tasks. The greater the skill level of an auditor, the more dependable the reports they produce will be in terms of accuracy.

Attribution theory suggests that the effectiveness of auditors in carrying out their work can impact the quality of audits. This theory explores the reasons behind people's behavior in social situations, focusing on internal factors like competence that can affect how individuals perform their tasks. A person supported by the competence they possess will produce quality audits. An auditor who has good competence in education, experience and training will better understand various problems in financial statements. In addition, they have the ability to comprehend and implement new requirements in auditing regulations set by professional groups in order to enhance the quality of audits.

4.2.3. The Effect of Time Pressure on Audit Quality at Public Accounting Firms in Bali Province

According to the findings of the third hypothesis in this study, it suggests that pressure of time leads to a notable increase in the quality of audits. This indicates that as auditors experience more time pressure, it will result in enhancing the audit quality at Public Accounting Firms in Bali Province. As a result, the third hypothesis of this study is supported. Time pressure is one factor that cannot be avoided. Auditors often face tight deadlines, especially during peak audit season. High levels of time pressure possessed by auditors often make auditors conduct audits that do not comply with established standards, so the quality of audits produced decreases. However, time pressure may not cause audit quality to decrease for some auditors.

The findings of this study align with the research carried out by Nirmala & Cahyonowati (2013), which suggests that time constraints play a critical role in the quality of audits. Similarly, Anggoro & Septemberizal (2023) found that time pressure can actually enhance the quality of audits, contrasting with the previous research. Studies done by Filicia & Handayani, 2025; Gede, 2016; Kurniawan & Anggraeni, 2025; Pikirang et al., 2017; Priscilla & Arsiah, 2024; Rizal & Liyundira, 2016; Widhianingsih et al., 2024 state that the pressure of time can actually improve the quality of audits. It can lead to auditors working more efficiently and also helps in assigning tasks effectively.

The attribution theory explores how time constraints can impact the quality of audits by examining the factors that influence a person's behavior in social situations. This theory suggests that external factors like time pressure can lead to changes in behavior. While time pressure is generally seen as having a negative effect on audit quality, it can also have positive effects for some auditors. More experienced auditors are better able to manage time pressure effectively so that the audit quality they possess becomes better. Increasing time pressure will increase audit quality. This may be felt by some auditors.

A small portion of auditors feel that time pressure given by clients causes auditors to maximize remaining time without reducing the quality of audits produced to maintain credibility as auditors. With high pressure given to auditors, auditors must still behave professionally in carrying out their duties. Auditors who receive time pressure will be able to increase efficiency in completing their tasks and produce quality audits if supported by ATLAS utilization and competence possessed by auditors. In addition, experience and expertise can help auditors in facing time pressure they have. Auditor experience and expertise can help auditors stay focused and disciplined in carrying out audit procedures so as to produce quality audits.

5. Conclusion

This research shed light that ATLAS utilization, auditor competence, and time pressure have positive and significant effects on audit quality at Public Accounting Firms in Bali Province. The more optimal ATLAS utilization, the better the audit quality produced because it facilitates processes and increases accuracy. High auditor competence also drives audit quality through technical expertise and professionalism possessed. Meanwhile, well-managed time pressure can actually increase auditor efficiency and accuracy in completing their tasks, thus having positive impacts on audit results.

For Public Accounting Firms in Bali Province, it is recommended to organize routine training on ATLAS utilization and consider integration of client financial systems with ATLAS to support data retrieval efficiency. Improving auditor competence is also important through encouragement to take professional certifications such as CPA or CA. In addition, time management training needs to be provided so auditors can remain productive and maintain audit quality amid time pressure. Future researchers are advised to explore other variables such as independence, auditor experience, or leadership that might also influence audit quality. Expanding the number of samples by including all auditors at Public Accounting Firms in Bali Province is also expected so research results become more representative and can be generalized.

Theoretically, the findings of this study provide evidence for Attribution Theory, which suggests that both internal factors like skills, drive, and technology usage, and external factors such as time constraints and organizational rules, play a role in shaping the behavior of auditors and the effectiveness of audits they conduct. Practically, these findings provide strategic input for Public Accounting Firms to improve efficiency and professionalism through technology training, strengthening auditor capacity, and optimal work pressure management. In addition, the results of this research can also serve as references for subsequent studies that want to explore the influence of individual and organizational factors on audit performance.

6. References

- Agustin, J. V., & Triani, N. N. A. (2023). Pengaruh Audit Firm Size Audit Fee Audit Tenure dan Kompetensi Auditor terhadap Manajemen Laba. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 7(2), 428–446.
- Ahmad, H., Farinal, P. R., Sari, R., Lannai, D., & Abduh, M. (2024). Pengaruh Pengalaman Auditor, Tekanan Anggaran Waktu, dan Independensi Terhadap Kualitas Audit di Inspektorat Kabupaten Soppeng. *Paradoks: Jurnal Ilmu Ekonomi*, 7(3), 310–322.
- Aini, D. N., Panggiarti, E. K., & Iswanaji, C. (2020). Penerapan Audit Tool and Linked Archive System (ATLAS) Untuk Meningkatkan Kualitas Audit Pada Kantor Akuntan Publik di Jakarta. *Skripsi, Universitas Tidar*.
- Angelina, S. (2017). Pengaruh Kompetensi, Independensi, Etika, Pengalaman Auditor, Dan Tekanan Anggaran Waktu Terhadap Kualitas Audit. *Jurnal Bina Akuntansi*, 4(2), 81–97. <https://doi.org/10.52859/jba.v4i2.27>
- Anggoro, D. T., & Septemberizal, S. (2023). Pengaruh independensi, tekanan anggaran waktu, kompetensi, risiko audit, terhadap kualitas audit dengan etika sebagai pemoderasi. *Prosiding Konferensi Ilmiah Akuntansi*, 10.
- Aswar, A. A., Susanto, E., & Nurwahyuni, N. (2022). Pengaruh Tekanan Waktu dan Konflik Peran Terhadap Kualitas Audit Pada Auditor Di Inspektorat Selayar. *Paradoks : Jurnal Ilmu Ekonomi*, 4(2 SE-Articles), 18–29.
- Filicia, G. J., & Handayani, W. S. (2025). Pengaruh Tekanan Waktu, Integritas, Profesionalisme, Motivasi Auditor, dan Objektivitas Terhadap Kualitas Audit: Studi Empiris pada Auditor di Kantor Akuntan Publik Wilayah Jakarta Selatan. *Akurat: Jurnal Penelitian Ilmu Akuntansi*, 1(1), 39–48.
- Gea, F., & Widhiyani, N. L. S. (2018). Etika Auditor Sebagai Pemoderasi Pengaruh Kompetensi dan Tekanan Anggaran Waktu Terhadap Kualitas Audit. *E-Jurnal Akuntansi*, 24(1), 311–338.
- Gede, I. D. M. (2016). Pengaruh Tekanan Anggaran-Waktu dan Perbedaan Gender terhadap Kualitas Audit pada Kantor Akuntan Publik di Surabaya. *Jurnal Ilmiah Mahasiswa FEB*, 4(2).
- Ghozali, I. (2016). Quantitative and qualitative research design for accounting, business, and other social

sciences. Publisher: Primary Yoga.

Gulo, W. (2002). *Metodologi Penelitian*. Gramedia Widiasarana Indonesia.

Haniifah, M. N., & Pramudyastuti, O. L. (2022). Analisis Efektivitas Audit Tool and Linked Archive System dalam Menunjang Proses Audit Laporan Keuangan. *JURNAL MANEKSI*, 10(2), 169–176. <https://doi.org/10.31959/jm.v10i2.747>

Harahap, L. (2015). *Pengaruh Kompetensi, Independensi, Objektivitas Dan Sensitivitas Etika Profesi Terhadap Kualitas Hasil Audit*. Universitas Negeri Yogyakarta.

Krismonanda, C., Widyastuti, S., & Nugraheni, R. (2021). Analisis Penerapan Audit Tools and Linked Archives System (ATLAS) Terhadap Proses Audit Laporan Keuangan (Studi Kasus pada Kantor Akuntan Publik Wisnu dan Katili). *Jurnal Penelitian Ekonomi Dan Akuntansi (JPENSI)*, 6(3). <https://doi.org/10.30736/v6i3.794>

Kurnia, W., Khomsiyah, K., & Sofie, S. (2014). Pengaruh Kompetensi, Independensi, dan Tekanan Waktu Audit terhadap Kualitas Audit. *Jurnal Akuntansi Trisakti*, 1(2), 49–67. <https://doi.org/10.25105/jat.v1i2.4826>

Kurniawan, A. P., & Anggraeni, D. (2025). Pengaruh Kompleksitas Tugas, Tekanan Anggaran Waktu, Pengalaman Audit dan Due Professional Care terhadap Kualitas Audit. *Jurnal Mutiara Ilmu Akuntansi*, 3(2), 183–205. <https://doi.org/10.55606/jumia.v3i2.3848>

Kusuma, M. W., & Arini, P. R. (2020). Pengaruh Independensi, Kompetensi, Pengalaman Kerja, dan Ukuran KAP terhadap Audit Delay yang Dimediasi oleh Kualitas Audit. *Jurnal Riset Akuntansi Mercu Buana*, 6(1), 23. <https://doi.org/10.26486/jramb.v6i1.934>

Mulyadi. (2007). *Auditing*. Salemba Empat.

Munawarah, I. (2023). Pengaruh Kompetensi & Independensi Auditor Terhadap Kualitas Audit Dengan Kompetensi Bukti Audit Sebagai Variabel Intervening. *Jurnal Gici Jurnal Keuangan Dan Bisnis*, 14(1), 1–15. <https://doi.org/10.58890/jkb.v14i1.1>

Neghe, I., Sondakh, J., & Kalalo, M. (2018). Pengaruh Motivasi Intrinsik, Kompetensi Auditor dan Kepuasan Kerja terhadap Kinerja Auditor Eksternal (Survei pada Auditor BPK-RI Perwakilan Provinsi Sulawesi Utara). *GOING CONCERN: JURNAL RISET AKUNTANSI*, 13(02). <https://doi.org/10.32400/gc.13.02.19631.2018>

Ningsih, A. A., Cahaya, P. R., Yaniartha, P. D., & Dyan, P. (2013). Pengaruh kompetensi, independensi, dan time budget pressure terhadap kualitas audit. *E-Jurnal Akuntansi Universitas Udayana*, 4(1), 92–109.

Nugrahaningtyas, A. F., & Priyastiwi, P. (2024). Penerapan Software ATLAS dan Kompetensi Auditor terhadap Kualitas Audit dengan Etika Auditor sebagai Variabel Moderasi. *PROMOSI (Jurnal Pendidikan Ekonomi)*, 12(2), 187. <https://doi.org/10.24127/jp.v12i2.9973>

Pairingan, A., Layuk, P. K. A., & Pangayow, B. J. C. (2018). Pengaruh Kompetensi dan Independensi terhadap Kualitas Audit dengan Motivasi sebagai Variabel Pemoderasi. *Jurnal Akuntansi, Audit & Aset*, 1(1).

Perdana, R., & Kurnia, K. (2016). Pengaruh Kompetensi, Independensi, dan Tekanan Waktu Audit terhadap Kualitas Audit. *Jurnal Ilmu Dan Riset Akuntansi (JIRA)*, 5(7).

Pikirang, J., Sabijono, H., & Wokas, H. R. N. (2017). Pengaruh Tekanan Waktu, Independensi, dan Etika Auditor terhadap Kualitas Audit di Kantor Inspektorat Kabupaten Kepulauan Sangihe. *GOING CONCERN: JURNAL RISET AKUNTANSI*, 12(2). <https://doi.org/10.32400/gc.12.2.18034.2017>

Prajanto, A. (2020). Project Based Learning sebagai Model Pembelajaran Risk Based Audit dengan Media Aplikasi Audit Tool Linked Archive System (ATLAS). *JAKA (Jurnal Akuntansi, Keuangan, Dan Auditing)*, 1(1). <https://doi.org/10.56696/jaka.v1i1.3860>

Priscilla, T. V., & Arsjah, R. J. (2024). Pengaruh Penerapan E-Audit dan Etika Auditor terhadap Kualitas Audit dengan Time Budget Pressure sebagai Pemoderasi. *AKADEMIK: Jurnal Mahasiswa Ekonomi & Bisnis*, 4(3), 1363–1377. <https://doi.org/10.37481/jmeh.v4i3.894>

- Rahayu, I. Y., & Wilasittha, A. A. (2023). Implementasi ATLAS dalam Prosedur Penilaian Risiko Audit (Studi Kasus pada KAP Luthfi Muhammad & Rekan). *Jurnal Akuntansi Bisnis Dan Ekonomi*, 9(2), 3445–3451. <https://doi.org/10.33197/jabe.vol9.iss2.2023.1136>
- Rizal, N., & Liyundira, F. S. (2016). Pengaruh Tekanan Waktu dan Independensi Pengaruh Tekanan Waktu dan Independensi terhadap Kualitas Audit (Studi pada Kantor Akuntan Publik di Wilayah Malang). *WIGA: Jurnal Penelitian Ilmu Ekonomi*, 6(1), 45–52.
- Rizky, M. A., & Dwi Astuti, C. (2023). Pengaruh Kompetensi Auditor, Workload, dan Time Budget Pressure, Terhadap Kualitas Audit Dengan Etika Audit Sebagai Variabel Pemoderasi. *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi (JEBMA)*, 3(2), 514–526. <https://doi.org/10.47709/jebma.v3i2.2824>
- Rosadi, R. A., & Waluyo, I. (2017). Pengaruh Gender, Tekanan Ketaatan, Tekanan Anggaran Waktu, dan Pengalaman Audit terhadap Audit Judgment. *Nominal, Barometer Riset Akuntansi Dan Manajemen*, 6(1). <https://doi.org/10.21831/nominal.v6i1.14337>
- Samosir, M., Sitorus, E. T., Nainggolan, R. P., & Marpaung, O. (2022). Pengaruh Kompetensi dan Independensi Auditor terhadap Kualitas Audit (Studi empiris pada Kantor Akuntan Publik di DKI Jakarta). *Jurnal Akuntansi Dan Perpajakan Jayakarta*, 3(02), 131–145. <https://doi.org/10.53825/japjayakarta.v3i02.122>
- Sangkala, M. (2024). Concept and Application of Audit in Information Systems. *JOURNAL OF MANAGEMENT, ACCOUNTING, GENERAL FINANCE AND INTERNATIONAL ECONOMIC ISSUES*, 3(3), 730–741. <https://doi.org/10.55047/marginal.v3i3.1193>
- Saputra, H. E., & Kuntadi, C. (2024). Pengaruh Pengetahuan, Kompetensi, Profesional terhadap Kualitas Audit. *Jurnal Inovasi Ekonomi Syariah Dan Akuntansi*, 1(3), 01–10. <https://doi.org/10.61132/jies.v1i3.71>
- Saputri, D. W., & Kuntadi, C. (2024). Pengaruh Kompetensi, Integritas Dan Motivasi Auditor Terhadap Kualitas Audit. *Jurnal Media Akademik (JMA)*, 2(4).
- Setiawan, I., Alfie, A. A., & Astuti, W. B. (2022). Penerapan Aplikasi ATLAS, Kompetensi dan Independensi Auditor serta Kualitas Audit Kantor Akuntan Publik di Semarang. *Journal of Accounting and Finance*, 1(1). <https://doi.org/10.31942/jafin.v1i1.6792>
- Sihombing, S., Simanjuntak, M. O., Sinaga, R., Universitas Prima Indonesia, M., & Wulandari, B. (2021). Pengaruh Kompetensi Auditor, Independensi Auditor, Pengalaman Auditor, dan Profesionalisme terhadap Kualitas Audit pada Kantor Akuntan Publik di Wilayah Kota Medan. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 5(2). <https://doi.org/10.31955/mea.v5i2.1122>
- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (p. 336).
- Umroh, M. (2024). Pengaruh Teknik Audit Berbantuan Komputer (Aplikasi ATLAS) dan Pengalaman Auditor terhadap Kualitas Audit dengan Kompetensi Auditor sebagai Variabel Mediator. *Jurnal Manajemen Bisnis Dan Keuangan*, 5(2), 222–236. <https://doi.org/10.51805/jmbk.v5i2.224>
- Wardhana, R. S. (2021). *Studi Keperilakuan Penggunaan Aplikasi ATLAS dan Pengaruhnya pada Kualitas Audit*. Universitas Brawijaya.
- Widhianingsih, N. K. P. S., Yuesti, A., & Dewi, N. P. S. (2024). Pengaruh Due Profesional Care, Pengalaman Auditor, Time Budget Pressure, Audit Fee, Dan Motivasi Auditor Terhadap Kualitas Audit Pada Kantor Akuntan Publik Di Bali. *Kumpulan Hasil Riset Mahasiswa Akuntansi (KHARISMA)*, 6(1), 74–89.
- Yuniar, L., & Sapari, S. (2019). Pengaruh Tekanan Waktu, Kompetensi, Independensi Dan Etika Auditor Terhadap Kualitas Audit. *Jurnal Ilmu Dan Riset Akuntansi (JIRA)*, 8(5).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).