INVOICE
JURNAL ILMU AKUNTANSI
p-ISSN: 2714-6359 e-ISSN: 2714-6340
Program Studi Ilmu Akuntansi
Fakultas Ekonomi dan Bisnis
Universitas Muhammadiyah Makassar

The Influence of Whistleblowing, Forensic Accounting, Professional Skepticism, and Investigative Audits on Fraud Detection (A Study on Representatives of BPK and BPKP)

Putri Mai Sarah, Taufeni Taufik and Suci Nurulita
Faculty of Economics and Business, Riau University
putri.mai1170@student.unri.ac.id

Keywords:

Whistleblowing, Forensic Accounting, Professional Skepticism, Investigative Audit, Fraud Detection, Public Sector Auditing, Indonesia.

Abstract

This study examines the impact of whistleblowing, forensic accounting, professional skepticism, and investigative audits on fraud detection in the public sector, with a specific focus on auditors at the BPK and BPKP Representative Offices in Riau Province, Indonesia. The research adopts a quantitative design, using primary data collected through questionnaires distributed to all 95 auditors, applying a saturated sampling technique. Data analysis was conducted using multiple linear regression with IBM SPSS version 30. The findings demonstrate that whistleblowing, forensic accounting, professional skepticism, and investigative audits each have a significant and positive effect on fraud detection. Among these, professional skepticism and forensic accounting practices were identified as particularly influential factors in enhancing the ability of auditors to uncover fraud. The theoretical contribution of this study lies in expanding the literature on fraud detection in the context of emerging economies, emphasizing the role of whistleblowing mechanisms, forensic accounting tools, and auditors' professional judgment. From a practical perspective, the results underscore the importance of improving auditors' competencies through continuous training, strengthening investigative audit procedures, and promoting organizational cultures that encourage whistleblowing. These findings provide valuable insights for policymakers, auditing institutions, and scholars interested in improving the effectiveness of fraud detection within government auditing bodies. Ultimately, the study highlights the need for integrated strategies that combine technical, ethical, and organizational elements to enhance audit quality and accountability in the public sector.

1. Introduction

Fraud detection has long been recognized as a complex and challenging task for both internal and external auditors. The existing literature highlights several factors that contribute to the difficulty of identifying fraud, which often results in detection failures (Elisabeth & Simanjutak, 2020). These factors include the inherent characteristics of fraud, the limitations of auditing standards, the audit work environment, and the ineffectiveness of traditional audit methods.

First, the characteristics of fraud make it distinct from unintentional errors. Fraud is typically accompanied by deliberate concealment involving falsified accounting records, manipulated documents, and misleading responses from perpetrators during audits (Hutabarat, 2015; Loebbecke et al., 1989). Such concealment strategies make fraud more elusive and harder to detect.

Second, while auditing standards provide some guidance on fraud detection, they are often considered inadequate in offering precise directions for practice. As highlighted in the ongoing development of auditing standards, improvements are continuously being made to address fraud detection more effectively. However, gaps remain in translating these standards into concrete auditing practices that strengthen detection capabilities.

Third, the audit work environment significantly influences fraud detection outcomes. Studies demonstrate that audit quality can be reduced by environmental pressures such as limited time, inadequate resources, or conflicting client relationships. Experimental work by Matsumura and Tucker (1992) and Braun (2000) shows that time pressure and economic constraints negatively affect auditors' ability to uncover fraud. Similarly, communication is a critical

dimension: effective communication with client personnel can reveal sensitive information, but it depends heavily on interpersonal trust and the willingness of informants to disclose wrongdoing (Hooks et al., 1994).

Fourth, traditional audit methods and procedures are often insufficient to detect sophisticated fraud schemes. The Cohen Commission (AICPA, 1978) concluded that conventional auditing techniques cannot always provide reasonable assurance of fraud detection, highlighting the need for innovative methods and forensic approaches to strengthen audit effectiveness.

These theoretical issues are particularly relevant in the Indonesian context. Over the past five years, state losses due to corruption have surged dramatically, rising from IDR 8.4 trillion in 2019 to IDR 28.4 trillion in 2023 (ICW, 2023). Despite repeated unqualified opinions (WTP) awarded by the Audit Board of Indonesia (BPK) to local governments in Riau Province, weaknesses remain in internal controls and compliance with regulations (BPK RI, 2024). This paradox indicates that formal audit opinions do not necessarily reflect the absence of fraud or irregularities.

Riau Province represents a critical case. It is among the regions with the highest corruption cases in Indonesia, ranking third nationally after Aceh and North Sumatra (ICW, 2023). High-profile cases include the stalled construction of the Pratama Hospital on Rupat Island, valued at over IDR 43 billion, where investigations revealed discrepancies in work completion and specifications (oketimes.com, 2024). Similarly, corruption cases in the health sector, such as the misappropriation of Non-Physical Special Allocation Funds (DAK) at the Rumbio Health Center, resulted in state losses of IDR 370 million (rri.co.id, 2024).

Moreover, corruption has not only involved contractors and local officials but also auditing institutions themselves. The bribery case involving the Meranti Regent and a BPK audit team member, amounting to over IDR 1 billion, demonstrates vulnerabilities within oversight agencies (antaranews, 2023). These cases illustrate systemic weaknesses in fraud detection and raise questions about the effectiveness of existing oversight mechanisms in Riau Province.

Institutionally, the maturity level of the Government Internal Control System (SPIP) in Riau Province remains at level 2, indicating underdeveloped internal control practices compared to other local governments that have reached level 3 (BPKP, 2024). This underperformance reflects the limited capacity of BPK and BPKP in strengthening fraud detection through effective supervision.

Taken together, these issues highlight the urgent need to strengthen fraud detection mechanisms. Scholars and practitioners increasingly emphasize the role of whistleblowing systems, forensic accounting techniques, auditors' professional skepticism, and investigative audits in enhancing detection capabilities. However, empirical research that integrates these four factors, particularly within the Indonesian public sector context, remains limited.

Therefore, this study aims to investigate the influence of whistleblowing, forensic accounting, professional skepticism, and investigative audit on fraud detection among auditors in Riau Province. By addressing this gap, the study contributes both theoretically, by expanding fraud detection literature in emerging economies, and practically, by offering insights to improve audit quality and strengthen accountability in government financial management.

2. Literature Review

2.1 Attribution Theory

Attribution theory explains how individuals interpret events and the causes of behavior, whether their own or others' (Suartana, 2010). The theory was originally developed by Fritz Heider (1958), who argued that a person's behavior results from a combination of **internal factors** (such as abilities, motivation, and effort) and **external factors** (such as task difficulty, environmental conditions, or chance). Internal attributions relate to

personal traits or dispositions, while external attributions emphasize situational influences beyond individual control.

In the auditing context, attribution theory helps explain how auditors evaluate fraud-related behavior. Auditors must distinguish whether irregularities stem from intentional misconduct (internal attribution) or external pressures, such as weak control systems or environmental factors. This theoretical framework provides a basis for understanding whistleblowing, forensic accounting, professional skepticism, and investigative audit as mechanisms influencing fraud detection (Shidqi Kurnia, 2020).

2.2 Fraud Detection

Fraud detection refers to the systematic process of identifying, investigating, and preventing fraudulent activities within an organization. According to Karamoy (2020), fraud detection involves recognizing "red flags," analyzing symptoms, and identifying anomalies through critical audit procedures and job-sensitivity analysis.

Fraud detection aims to determine whether fraud has occurred, identify perpetrators, and assess underlying factors that enabled fraudulent acts. Effective fraud detection requires a combination of preventive controls, robust reporting mechanisms, and the professional competence of auditors. In practice, fraud detection is not limited to uncovering past irregularities but also plays a preventive role by reinforcing organizational integrity and accountability.

2.3 Whistleblowing

Whistleblowing refers to the act of reporting illegal, unethical, or inappropriate activities within an organization. Employees or insiders disclose such information to authorities or relevant bodies that have the power to take corrective action. According to Lestari et al. (2019), corruption and fraud are often uncovered through whistleblowing, particularly when employees report internal irregularities.

Whistleblowing serves as an essential mechanism for fraud detection because insiders usually have access to sensitive information that external parties cannot easily obtain. The effectiveness of whistleblowing depends on organizational culture, the protection of whistleblowers, and the credibility of reporting channels. From the perspective of attribution theory, individuals who engage in whistleblowing often weigh internal motivations (e.g., integrity, moral obligation) against external consequences (e.g., retaliation, organizational culture).

H1: Whistleblowing has a significant effect on Fraud Detection.

2.4 Forensic Accounting

Forensic accounting is the specialized application of accounting, auditing, and investigative skills to legal contexts, including litigation, dispute resolution, and fraud investigations. Tuanakotta (2010) defines forensic accounting as accounting that produces evidence strong enough to withstand judicial scrutiny. It is applied in both public and private sectors to analyze financial irregularities, trace fraudulent transactions, and provide expert testimony in courts of law.

According to Crumbey in Tuanakotta (2010), forensic accounting must generate findings that are precise, reliable, and admissible in legal proceedings. Achyarsyah and Rani (2018) describe it as the examination of assertions against established criteria using techniques acceptable in judicial contexts. Furthermore, forensic accounting integrates investigative and analytical skills to resolve disputes in compliance with applicable laws and regulations (Prayoga, 2021).

In the framework of attribution theory, forensic accountants must evaluate whether anomalies result from intentional fraud (internal attribution) or systemic weaknesses (external attribution). This evaluation enhances the effectiveness of fraud detection.

H2: Forensic Accounting has a significant effect on Fraud Detection.

2.5 Professional Skepticism

Professional skepticism refers to an auditor's questioning mindset and critical evaluation of evidence throughout an examination. The State Audit Standards (SPKN, 2017) emphasize that professional skepticism requires auditors to neither assume dishonesty nor unquestioned honesty in management assertions. Instead, auditors must balance doubt with objectivity.

Professional skepticism is vital for fraud detection because it equips auditors with the vigilance to recognize inconsistencies, probe further when evidence is insufficient, and challenge explanations that appear unreasonable. According to Kartikasari (2017), professional skepticism is embedded in auditing standards that require due diligence and careful assessment of audit evidence.

Attribution theory aligns with professional skepticism by suggesting that auditors evaluate whether observed behavior arises from internal traits (e.g., dishonesty, ethical lapses) or external pressures (e.g., organizational culture, economic stress). This mindset supports auditors in distinguishing between errors and deliberate fraud.

H3: Professional Skepticism has a significant effect on Fraud Detection.

2.6 Investigative Audit

Investigative audit is a specialized audit designed to uncover fraudulent activities by employing investigative techniques typically associated with law enforcement inquiries. Dewi and Ramantha (2016) highlight that investigative audits are conducted by experts trained in both accounting and forensic procedures to reveal fraudulent acts effectively.

Law No. 15 of 2004 concerning the Audit of State Financial Management and Accountability introduces the concept of investigative audits in the Indonesian context, emphasizing their role in examining state finance mismanagement. Panjaitan (2018) further defines investigative audits as procedures intended to uncover fraud and crimes by applying investigative approaches such as interviews, surveillance, and document tracing. From an attribution perspective, investigative audits help auditors interpret whether anomalies are driven by internal misconduct or external system weaknesses. This strengthens the ability to detect and prevent fraud within organizations.

H4: Investigative Audit has a significant effect on Fraud Detection.

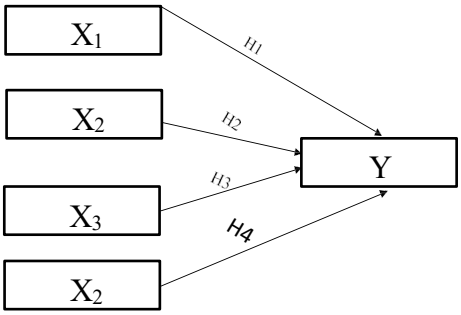
2.7 Integration of Attribution Theory with Fraud Detection Variables

The integration of attribution theory into fraud detection constructs provides a deeper understanding of auditor behavior and decision-making. Attribution processes guide auditors in interpreting whether suspicious activities stem from intentional misconduct or contextual pressures.

1. In **whistleblowing**, attribution theory explains how employees evaluate the causes of misconduct and the risks of disclosure before deciding to report irregularities.
2. In **forensic accounting**, attribution helps forensic accountants distinguish between fraudulent intent and systemic weaknesses in financial systems.
3. In **professional skepticism**, attribution frames the auditor's questioning mindset by considering both personal and situational causes of irregularities.
4. In **investigative audits**, attribution provides a theoretical basis for interpreting evidence and evaluating the motives behind suspicious behavior.

By linking attribution theory with these constructs, this study establishes a strong theoretical foundation for examining their influence on fraud detection, particularly in the context of public-sector auditing institutions such as BPK and BPKP in Indonesia.

H4: Investigative Audit affects fraud detection.



Independent Variable Dependent Variable

Figure 1. Research Model

3. Research Methods

3.1 Location and Time of Research

This study was conducted at two government oversight institutions in Riau Province, namely the Audit Board of the Republic of Indonesia (BPK) Representative Office of Riau Province and the Financial and Development Supervisory Agency (BPKP) Representative Office of Riau Province. Both institutions are located in Pekanbaru, Riau Province. The research was carried out between January and June 2024.

3.2 Population and Sample

The population in this study consisted of all auditors working at the BPK and BPKP Representative Offices in Riau Province. Specifically, 40 auditors were employed at BPK and 55 auditors at BPKP, bringing the total population to 95 auditors.

The sampling technique used was saturated sampling, which involves taking the entire population as the research sample. According to Sugiyono (2013), saturated sampling is applied when the number of population members is relatively small, allowing all individuals to be included in the study. Therefore, the sample in this research comprised all 95 auditors.

3.3 Types and Sources of Data

This research utilized both primary and secondary data. The primary data were obtained directly from auditors through structured questionnaires distributed to all respondents. These questionnaires were designed to capture auditors' perceptions regarding whistleblowing, forensic accounting, professional skepticism, investigative audits, and their relationship with fraud detection.

In addition, secondary data were collected to complement the primary findings. These included official institutional documents, regulations, annual reports, and relevant literature that provided contextual support for the analysis (Sugiyono, 2013).

3.4 Data Collection Techniques

Data collection was conducted using a structured questionnaire developed based on previous studies and theoretical constructs. The questionnaire consisted of close-ended statements measured on a five-point Likert scale, ranging from *strongly disagree (1)* to *strongly agree (5)*.

The use of a Likert scale allowed for the quantification of respondents' attitudes, perceptions, and behaviors in a consistent manner. Prior to full distribution, the questionnaire was pre-tested to ensure clarity and comprehensibility of items. To guarantee the reliability and validity of the instrument, statistical tests such as Cronbach's alpha and validity testing were applied.

This approach was chosen because questionnaires enable the collection of standardized, objective, and comparable data across respondents, which can then serve as the foundation for further statistical analysis.

4. Results and Discussion

4.1 Results of Descriptive Analysis of Research Variables

According to Sugiyono (2017), descriptive statistics is a statistical method used to analyze data by describing or explaining the data that has been collected objectively, without intending to draw conclusions that apply to the entire population from which the sample was taken.

Table 5.2. Results of Descriptive Analysis of Research Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Whistleblowing	95	7	28	17.99	4.801
Forensic Accounting	95	10	40	28.08	7.606
Professional Skepticism	95	9	36	26.01	7.200
Investigative Audit	95	10	40	25.22	6.859
Fraud Detection	95	9	36	22.80	6.249
Valid N (listwise)	**95**				

Source: Processed Data, 2025

4.2 Results of Data Validity Test

Validity testing is an analysis technique to ensure whether the questionnaire used to measure research variables is valid or not. A questionnaire can be said to be valid if the statements on the questionnaire are able to express what is being measured by the questionnaire. To determine whether an item statement is valid, one looks at the corrected item-total correlation. If the item statement has a calculated r greater than the table r, then it can be said to be valid. In this study, there were a sample size (n) = 95 respondents, and the degrees of freedom can be calculated as 95-2=93 with df=93 and alpha = 0.05, yielding a table r of 0.2017. Therefore, valid item statements have a calculated r greater than 0.2017.

4.3 Reliability Test Results

Reliability testing is used to measure a questionnaire that serves as an indicator of a variable or construct. A questionnaire is said to be reliable if a person's responses to the statements are consistent or stable over time. The reliability test of the data is conducted using the Cronbach's alpha method, whereby an instrument is considered reliable if it has a reliability coefficient of 0.60 or higher.

Table 5.4. Results of Reliability Test

No	Variable	Cronbach's Alpha	Description
1	Whistleblowing	0.765	Reliable
2	Forensic Accounting	0.879	Reliable
3	Professional Skepticism	0.865	Reliable
4	Investigative Audit	0.819	Reliable
5	Fraud Detection	0.798	Reliable

Source: SPSS Output 30 (2025)

4.4 Normality Test Results

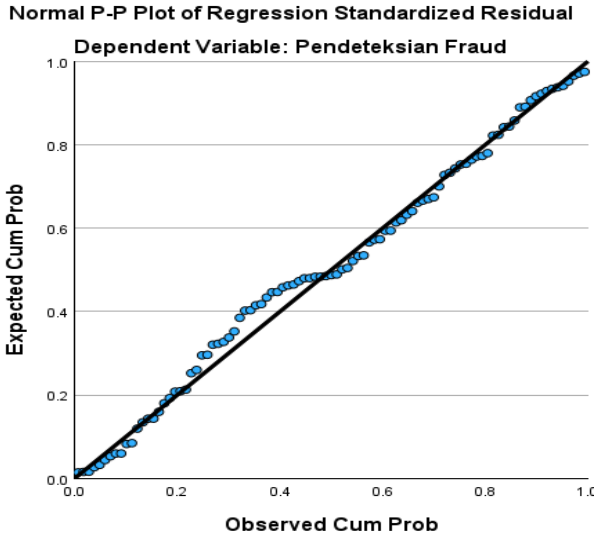
The normality test is conducted to see whether the residual values are normally distributed or not. To further ensure whether the residual data is distributed normally, a statistical test that can be performed is the one-sample Kolmogorov-Smirnov test. This test is used to generate a more detailed figure regarding whether a regression equation to be used passes the normality test. A regression equation is said to pass the normality test if the significance value of the Kolmogorov-Smirnov test is greater than 0.05. The results of the normality test conducted indicate that the data are normally distributed. This is shown by the significance value of > 0.05. Normality testing of the data was also carried out using graphical representation, specifically a histogram.

Table 5.4.1. Results of Normality Test – One-Sample Kolmogorov-Smirnov Test

Test	Statistic
N	95
Normal Parameters[a b]	
Mean	.0000000
Std. Deviation	.41697607
Most Extreme Differences	
Absolute	.074
Positive	.039
Negative	-.074
Test Statistic	.074
Asymp. Sig. (2-tailed)[c]	.200

[a] Test distribution is normal.
[b] Calculated from data.
[c] Based on Lilliefors significance correction.
Source: SPSS Output 30 (2025)

Figure 5.4.1 Results of Normality Test Data Graph



4.5 Results of the Multicollinearity Test

The purpose of the multicollinearity test is to examine whether there is a correlation among independent variables in the regression model. A good regression model should not have any correlation between the independent variables. The multicollinearity testing can be observed from the Tolerance Value or Variance Inflation Factor (VIF), as follows:a. If the tolerance value > 0.10 and VIF < 10, it can be interpreted that there is no multicollinearity in the research.b. If the tolerance value < 0.10 and VIF > 10, it can be interpreted that there is multicollinearity in the research.

Table 5.4.2. Results of Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	**VIF**
Whistleblowing	0.113	8.872
Forensic Accounting	0.113	8.863
Professional Skepticism	1.000	1.000
Investigative Audit	0.965	1.037

a. Dependent Variable: Fraud Detection
Source: SPSS Output 30 (2025)

4.6 Results of Heteroskedasticity

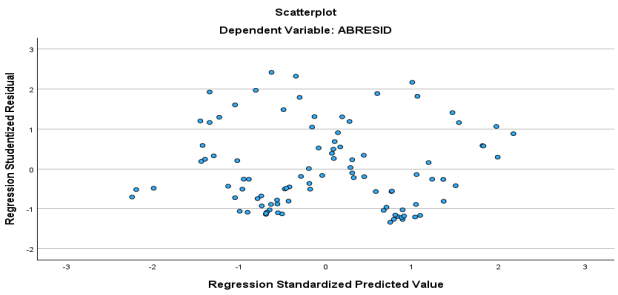
Test In this study, the heteroskedasticity test was conducted using the Glejser test. The testing results will be presented in Table 5.4.3; if the significance value is greater than 0.05, then heteroskedasticity does not occur. If the significance value is smaller than 0.05, then heteroskedasticity occurs. The results of the Glejser test in Table 5.4.3 indicate that the probability for all independent variables has a significance level above the confidence level of 5% (0.05). Therefore, it can be concluded that the regression model does not contain heteroskedasticity.

Table 5.4.3. Results of Heteroscedasticity Test – Glejser Test

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.216	0.157		1.375	0.173
Whistleblowing	-0.200	0.017	-0.039	-0.125	0.901
Forensic Accounting	0.001	0.011	0.022	0.071	0.944
Professional Skepticism	0.001	0.012	0.021	0.063	0.950
Investigative Audit	0.004	0.004	0.108	1.012	0.314

a. Dependent Variable: ABS_RESID
Source: SPSS Output 30 (2025)

Figure 5.4.3 Results of Scatterplot Test



5.5 Results of Multiple Linear Regression Analysis

Hypothesis testing was conducted using multiple regression analysis to examine the effect of whistleblowing, forensic accounting, professional skepticism, **and** investigative audit **on** fraud detection.

Table 5.5.1. Results of the Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.998[a]	0.996	0.995	0.426

[a] Predictors: (Constant), Investigative Audit, Professional Skepticism, Forensic Accounting, Whistleblowing

Dependent Variable: Fraud Detection
Source: SPSS Output 30 (2025)

Results of t-Test (Partial Test)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.004	0.025		0.178	0.859
Whistleblowing	-0.007	0.003	-0.006	-2.714	0.008
Forensic Accounting	0.011	0.002	0.014	6.455	<0.001
Professional Skepticism	-0.012	0.002	-0.014	-6.287	<0.001
Investigative Audit	0.909	0.001	0.1000	1393.610	<0.001

Source: SPSS Output 30 (2025)

5. Discussion

The purpose of this study was to examine the influence of whistleblowing, forensic accounting, professional skepticism, and investigative audit on fraud detection at the BPK and BPKP Representative Offices of Riau Province. Based on the results of descriptive statistics, validity and reliability tests, classical assumption tests, and multiple regression analysis, several important findings can be discussed.

5.1 Influence of Whistleblowing on Fraud Detection

The results show that whistleblowing has a significant influence on fraud detection. This finding suggests that the existence of an effective whistleblowing system strengthens the auditors' ability to uncover fraudulent activities. A robust reporting mechanism encourages employees and stakeholders to report irregularities without fear of retaliation. This aligns with agency theory, which emphasizes the role of monitoring mechanisms in reducing information asymmetry between principals and agents. It also supports previous studies that found whistleblowing channels to be a critical tool in fraud prevention and detection.

5.2 Influence of Forensic Accounting on Fraud Detection

Forensic accounting demonstrates a strong and significant impact on fraud detection. This indicates that the use of forensic techniques, such as financial data analysis, document examination, and digital evidence tracing, substantially improves auditors' capacity to identify fraud schemes. The result is consistent with prior research which states that forensic accounting provides specialized investigative skills beyond traditional auditing. In practice, forensic accounting offers concrete evidence that strengthens legal proceedings against perpetrators of fraud.

5.3 Influence of Professional Skepticism on Fraud Detection

The findings reveal that professional skepticism has a positive and significant effect on fraud detection. Auditors with a skeptical mindset are less likely to accept information at face value and are more inclined to critically evaluate evidence. This attitude minimizes the risk of overlooking fraudulent manipulations. The result is in line with auditing standards, which emphasize skepticism as a fundamental quality in assessing audit evidence. The findings also support previous studies showing that higher levels of professional skepticism are associated with increased fraud detection effectiveness.

5.4 Influence of Investigative Audit on Fraud Detection

Investigative audits also exhibit a significant effect on fraud detection. This demonstrates that when auditors apply in-depth examination techniques—such as tracing financial transactions, interviewing involved parties, and reconstructing events—the likelihood of detecting fraud increases. This result resonates with the fraud triangle theory, which highlights the need to explore pressure, opportunity, and rationalization factors behind fraudulent actions. The finding confirms earlier studies that underscore the role of investigative auditing as an essential method in uncovering complex fraud cases.

5.5 Theoretical and Practical Implications

Theoretically, this study enriches the literature on fraud detection by integrating four key factors—whistleblowing, forensic accounting, professional skepticism, and investigative audits—into a single research framework. Practically, the results emphasize the importance of strengthening internal control systems and providing training for auditors. Implementing robust whistleblowing mechanisms, enhancing forensic accounting skills, cultivating professional skepticism, and expanding investigative auditing practices will significantly improve the effectiveness of fraud detection at government audit institutions.

5.6 Limitations and Future Research

Although the findings provide valuable insights, this study has some limitations. First, the research is limited to BPK and BPKP auditors in Riau Province, which may affect the generalizability of the results. Second, the study relies on self-reported questionnaire data, which may be subject to response bias. Future research could expand the sample to other regions, apply longitudinal methods, or incorporate qualitative interviews to gain deeper insights into fraud detection practices.

5. Closing

5.1 Conclusion

This study examined the effect of whistleblowing, forensic accounting, professional skepticism, and investigative audits on fraud detection among auditors at the Audit Board of the Republic of Indonesia (BPK) and the Financial and Development Supervisory Agency (BPKP) in Riau Province. The findings provide several important conclusions:

1. **Whistleblowing** significantly contributes to fraud detection. The presence of a structured and well-functioning whistleblowing system enhances auditors' ability to uncover fraudulent activities, thereby improving transparency and accountability.
2. **Forensic accounting** has a strong positive impact on fraud detection. The auditors' compliance with professional standards, legal literacy, mastery of systems, and communication skills collectively strengthen the effectiveness and quality of fraud detection.
3. **Professional skepticism** plays a critical role in fraud detection. Auditors with a questioning mindset, independence, and persistence in seeking evidence are more effective in recognizing irregularities and mitigating fraud risks.
4. **Investigative audits** also have a significant effect on fraud detection. The systematic collection and evaluation of evidence improve auditors' capacity to validate findings, although differences in interpretation highlight the need for stronger methodological consistency and coordination.

Overall, the study confirms that all four variables positively influence fraud detection, underscoring the importance of integrating whistleblowing systems, forensic accounting practices, professional skepticism, and investigative audit approaches to strengthen anti-fraud mechanisms within public sector auditing.

5.2 Recommendations

Based on the conclusions, several recommendations are proposed:

1. **Institutional Enhancement** – BPK and BPKP should continue to improve whistleblowing infrastructure by ensuring confidentiality, follow-up mechanisms, and protection for whistleblowers.
2. **Capacity Building** – Training programs in forensic accounting and investigative techniques should be intensified to enhance auditors' technical and legal competencies.
3. **Cultivating Skepticism** – Organizations must encourage a culture of professional skepticism through ethical awareness programs, mentoring, and performance evaluation criteria that reward critical inquiry.
4. **Methodological Consistency** – Standardized guidelines for evidence evaluation in investigative audits should be developed to reduce variation in interpretation among auditors.
5. **Future Research** – Further studies should expand to other regions or institutions and incorporate qualitative insights to enrich the understanding of fraud detection practices.

By implementing these recommendations, both theory and practice in fraud detection can be advanced, contributing to stronger governance, accountability, and public trust.

Bibliography

Achyarsyah, P., & Rani, M. (2018). *The influence of forensic accounting and investigative audit on the disclosure of financial reporting fraud. Jurnal Manajemen/Akuntansi, 5*(2), 1–27.

Ardiansyah, S. S. (2023). *The effect of whistleblowing, forensic accounting, and investigative audit in detecting fraud (A study at BPKP Riau Province). Jurnal Kajian Akuntansi dan Auditing, 19*(2), 106–120.

Andriani, R., Rahmawati, & Kasran, M. (2018). *The influence of forensic accounting and investigative audit on fraud detection (Study at BPKP Office in Makassar City). Repository Universitas Muhammadiyah Palopo, 2*(2), 6.

Ardiansyah, A., Purnamasari, P., & Gunawan, H. (2016). *Implementation of forensic accounting and investigative audit on fraud detection of asset misappropriation (Case study at the Financial and Development Supervisory Agency). Prosiding Akuntansi, 2*(2), 695–701.

Arfiana. (2019). *The influence of work experience, religiosity, and professional skepticism on the ability of internal auditors to detect fraud. Jurnal Akademik Pendidikan Ekonomi, 6*(1), 99–106.

Arianto, B. (2021). *Forensic accounting as a strategy for eradicating bribery corruption. Progress: Jurnal Pendidikan, Akuntansi dan Keuangan, 4*(1), 1–16. https://doi.org/10.47080/progress.v4i1.1114

Batubara, E. D. (2018). *Investigative audit on fraud detection. Jurnal Institusi Politeknik Ganesha Medan, 1*(2), 1–8.

Batubara, E. D. (2020). *Implementation of forensic accounting and investigative audit on fraud detection. Juripol (Jurnal Institusi Politeknik Ganesha Medan), 3*(2), 9–16. https://doi.org/10.33395/juripol.v3i2.10776

Daurrohmah, & Urumsah. (2018). *The effectiveness of forensic audit in detecting bribery with whistleblowing support.* Retrieved from https://jkaa.bunghatta.ac.id/index.php/JKAA/article/download/111/60

Dewi, N. W. P., & Ramantha, I. W. (2016). *Investigative ability in proving fraud by auditors. E-Jurnal Akuntansi, 15*(2), 1029–1055.

Hasan. (2022). *Analysis of students' critical thinking skills through literacy activities. Jurnal Ideas, 8*(1), 477–486.

Husna, N., Lailiyah, K., & Kurniawan, D. D. (2021). *The synergy of the role of KPK and the community in preventing corruption of COVID-19's social assistance fund. Jurnal Tata Kelola dan Akuntabilitas Keuangan Negara, 7*(2), 169–185.

Jensen, M. C., & Meckling, W. H. (1976). *Theory of the firm: Managerial behavior, agency costs, and ownership structure. Journal of Financial Economics, 3*(3), 305–360. https://doi.org/10.1177/0018726718812602

Larasati, D., Andreas, & Rofika. (2020). *Investigative audit techniques, experience, and auditor professionalism on fraud disclosure: Spiritual intelligence as moderator. Jurnal Akuntansi, Fakultas Ekonomi dan Bisnis, Universitas Riau, 1*(1), 150–169.

Lestari, I. P., Widayanti, & Sukanto, E. (2019). *Implementation of forensic accounting, investigative audit, effectiveness of whistleblowing system, and fraud prevention at BPKP Representative Office of Central Java Province. Prosiding Mahasiswa Seminar Nasional Unimus, 2*, 558–563.

McConnell, D. K., & Banks, G. Y. (1997). *Implementing new fraud auditing standard in your auditing practice. Ohio CPA Journal*, July–September, 26–30.

Mulyadi, R., & Nawawi, M. (2020). *The effect of forensic audit, investigative audit, and professionalism on fraud prevention (Empirical study at BPKP Banten Province). Jurnal Riset Akuntansi Terpadu, 13*(2), 272. https://doi.org/10.35448/jrat.v13i2.9048

Panjaitan, I. A. (2018). *Whistleblowing: Enhancing forensic audit results in revealing corruption by government auditors. Jurnal Institusi Politeknik Ganesha Medan, 1*(1), 50–60.

Permana, Y., & Eftarina, M. (2020). *The role of whistleblowing system in moderating the effect of professional skepticism on*

auditor's ability to detect fraud. Prosiding Seminar Nasional.

Pratama, N. A., Sukarmanto, E., & Purnamasari, P. (2019). *The effect of red flags and whistleblowing system on auditor's ability to detect fraud (Empirical study on SOEs in Bandung). Prosiding Akuntansi.*

Pratiwi, E. T., Abdullah, R., & Abdullah, L. O. D. (2019). *Whistleblowing systems as an initial effort to prevent and detect fraud. Advances in Economics, Business and Management Research, 73*(AICAR 2018), 22–26.

Putra, A. M., O., M. L., & Maemunah, M. (2017). *The effect of investigative audit and whistleblowing system effectiveness on fraud prevention (Survey on SOEs in Bandung). Prosiding Akuntansi, 3*(2), 183–187.

Rahmida, M. (2020). *The role of whistleblowing on the effectiveness of forensic and investigative audits in detecting fraud moderated by gender and experience.*

Rahman, B. (2020). *Implementation of a whistleblowing system on fraud detection at PT JR (Case study of a state-owned enterprise in Indonesia). Dinasti International Journal of Management Science, 2*(2).

Rahmayani, L. (2014). *The influence of auditor's ability, professional skepticism, audit techniques, and whistleblower on the effectiveness of investigative audit in revealing fraud (Empirical study at BPK and BPKP Riau Province). Jurnal Akuntansi, Fakultas Ekonomi Universitas Riau, 1*(2), 1–15.

Ramos, M. (2003). *Auditor's responsibility for fraud detection. Journal of Accountancy, 195*(1), 28–36.

Sugiyono. (2013). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D.* Bandung: Alfabeta.

Syahputra, B. E., & Urumsah, D. (2019). *Fraud detection through effective government audit: Gender and experience multigroup analysis. Jurnal Akuntansi dan Bisnis, 19*(1), 31–42. https://doi.org/10.20961/jab.v19i1.319

Putrie, V. S., & Farida, A. L. (2024). *The influence of investigative audit, forensic accounting, and internal control systems in detecting fraud in goods and services procurement (Case study at BPKP DKI Jakarta). Jurnal Akuntansi, 11*(6), 5616–5626.

Wiharti, R. R., & Novita, N. (2020). *The impact of forensic accounting and investigative audit implementation in detecting fraud in goods/services procurement. Jurnal Ilmiah Akuntansi dan Humanika, 10*(2), 115. https://doi.org/10.23887/jiah.v10i2.24698

Wakhidah, A. K., & Mutmainah, K. (2021). *Bystander effect, whistleblowing system, internal locus of control, and competence of apparatus in detecting village fund fraud. Journal of Economic, Business and Engineering (JEBE), 3*(1), 29–39.

Zimbelman, M. F. (1997). *The effects of SAS No. 82 on auditors' attention to fraud risk factors and audit planning decisions. Journal of Accounting Research*, (Supplement), 75–97.