

**Elok Heniwati<sup>1</sup>**

Universitas Tanjungpura, Pontianak, Indonesia

**Angga Hervianto<sup>2</sup>**

Universitas Tanjungpura, Pontianak, Indonesia

## Logistic Regression to Predict BPK's Audit Opinion

**Abstract.** The auditor uses the audit results of the local government financial reports to provide a professional statement in the form of an opinion and recommendations in the audit report. These opinions and recommendations are important for the local government's policy because they contain guidelines for its improvement.

**Purpose.** This study examines the effect of audit findings (Internal Control System, non-compliance with regulations, and audit recommendation follow-up) on BPK's audit opinion using a case study of the Regional Governments in Kalimantan Zone.

**Methodology/approach.** The logistic regression was used to determine the effect of audit findings and follow up on the BPK's opinion of audit results. This study uses secondary data (BPK Semester Examination Results Summary or IHPS) collected from 2018 to 2023.

**Findings.** The results showed that audit findings (the internal control system and non-compliance with regulations findings) significantly negatively affected the BPK audit opinion on the financial statements in the Kalimantan region. In addition, the follow-up examination results significantly positively impact the BPK audit opinion on the financial statements in the Kalimantan region. The result was that the lower findings of the internal control system and non-compliance with regulations resulted in a better audit opinion of BPK. In addition, the higher the index follow-up on audit results, the better the acquisition of BPK audit opinion is generated.

**Originality/value.** This study extends and contributes to the extant BPK audit opinion literature by providing new insight into how audit findings affect BPK's audit opinion in the Kalimantan zone settings.

**Practical implications.** This finding implies that local governments must improve the implementation of internal control systems and compliance with regulations and consistently undertake BPK recommendations to increase the quality of financial reporting. The findings offer vital evidence to improve the quality of financial reporting in driving local governments' service quality.

**Limitations.** This study only uses data from the Kalimantan region, so the generalization of the study results does not apply nationally and may cause bias in the method. To minimize bias, the next researcher can use a larger sample of data, not just one area.

**Keywords:** Audit opinion, Audit findings, BPK, Kalimantan, logistic regression.

### Suggested Citation

Heniwati, E., Hervianto, A. (2024). Logistic Regression to Predict BPK's Audit Opinion. *Oblik i finansi*, 2(104), 118-127. [https://doi.org/10.33146/2307-9878-2024-2\(104\)-118-127](https://doi.org/10.33146/2307-9878-2024-2(104)-118-127)

<sup>1</sup> **Elok Heniwati**, Universitas Tanjungpura, Pontianak, Indonesia.

**ORCID 0000-0002-1644-8243**

E-mail: [elok.heniwati@ekonomi.untan.ac.id](mailto:elok.heniwati@ekonomi.untan.ac.id)

<sup>2</sup> **Angga Hervianto**, Universitas Tanjungpura, Pontianak, Indonesia.

**ORCID 0009-0000-1320-3171**

Елок Хеніваті

Університет Танджунгпура, м. Понтіанак, Індонезія

Ангга Хервіанто

Університет Танджунгпура, м. Понтіанак, Індонезія

## Логістична регресія як інструмент прогнозування аудиторського висновку Аудиторської ради Індонезії

**Анотація.** Результати аудиту фінансових звітів органів місцевого самоврядування будуть використані аудитором для надання професійної думки у формі висновку та рекомендацій у звіті про аудит. Цей висновок та рекомендації є важливими для здійснення політики місцевого самоврядування, оскільки містять орієнтири щодо її вдосконалення.

**Мета цього дослідження** – вивчити вплив результатів аудиту (система внутрішнього контролю, невідповідність нормативним актам і подальші дії щодо рекомендацій аудиту) на аудиторський висновок Аудиторської ради Індонезії (ВРК) на прикладі регіональних урядів у Калімантані.

**Методологія.** Для визначення впливу результатів аудиту та подальших дій за результатами аудиту на висновок ВРК використано логістичну регресію. Для аналізу зібрано вторинні дані (резюме семестрових аудиторських звітів ВРК) за 2018-2023 роки.

**Результати** показали, що результати аудиту (система внутрішнього контролю та висновки щодо невідповідності нормативним актам) мали значний негативний вплив на аудиторський висновок ВРК щодо фінансової звітності в регіоні Калімантан. Проте, результати подальшої перевірки мають значний позитивний вплив на аудиторський висновок ВРК щодо фінансової звітності в регіоні Калімантан. Виявлено, що нижчі результати системи внутрішнього контролю та невідповідність законодавчим нормам призводять до більш позитивного аудиторського висновку ВРК. Крім того, чим вищий індекс відстеження результатів аудиту, тим більш якісний аудиторський висновок ВРК буде отримано.

**Внесок в теорію та практична цінність.** Це дослідження розширює існуючу літературу щодо аудиторських висновків ВРК, надаючи нове розуміння того, як результати аудиту впливають на аудиторський висновок ВРК у регіоні Калімантан. Результати свідчать, що органи місцевого самоврядування повинні покращити впровадження систем внутрішнього контролю та дотримання нормативних актів, а також послідовно виконувати рекомендації ВРК для підвищення якості фінансової звітності. Отримані у статті результати є важливими доказами для покращення якості фінансової звітності, а відповідно і якості послуг органів місцевого самоврядування.

**Обмеження.** У цьому дослідженні використовуються лише дані з регіону Калімантан, тому узагальнення результатів дослідження не стосується всієї країни та може спричинити упередження в методі. Щоб мінімізувати упередження, майбутні дослідники можуть використовувати більшу вибірку даних

**Ключові слова:** аудиторський висновок, результати аудиту, Аудиторська рада Індонезії, Калімантан, логістична регресія.

### INTRODUCTION

Presidential Regulation of the Republic of Indonesia, No. 81/2010 concerning the Grand Design of Bureaucratic Reform 2010–2025, is a guideline for ministry/institutions and local governments to implement bureaucratic reform to realize good governance (GC). Accountability for state financial management is one aspect of GC in the spotlight, mainly related to the quality of financial statements presentation under the Government Accounting Standards (or *Standar Akuntansi Pemerintah/SAP*). In this case, the quality of the financial reports of the ministry/institution and local governments still needs to be improved to obtain an unqualified (or *Wajar Tanpa Pengecualian/WTP*) opinion from the

auditor of the Supreme Audit Board of the Republic of Indonesia (or *Badan Pemeriksa Keuangan/BPK*).

Recently, in Indonesia, the phenomenon of WTP opinion on local government financial reports (or *Laporan Keuangan Pemerintah Daerah/LKPD*) has increased (see Table 1). During 2014–2019, obtaining WTP opinions increased significantly, from 47% to 89.5% and it continues to 2023 increasing by 91%. However, local governments continue to get opinions other than those of WTP. This condition indicates that there are still violations or irregularities in preparing financial statements with one or more criteria in auditing financial statements.

Table 1. Development of LKPD Opinions

Year	Unqualified (WTP)		Qualified (WDP)		Adverse (TMP)		Disclaimer (TW)		Total
2018	439	81.75%	89	16.57%	7	1.30%	2	0.37%	537
2019	485	89.48%	50	9.23%	6	1.11%	1	0.18%	542
2020	486	89.67%	47	8.67%	8	1.48%	1	0.18%	542
2021	494	90.31%	47	8.59%	6	1.10%	0	0.00%	547
2022	496	91.51%	41	7.56%	5	0.92%	0	0.00%	542
2023	522	93.05%	32	5.70%	7	1.25%	0	0.00%	561

Note: WTP= Wajar Tanpa Pengecualian; WDP= Wajar Dengan Pengecualian; TMP= Tidak Memberi Pendapat; TW= Tidak Wajar.

Source: BPK RI IHPS 2018-2023.

Article 16, paragraph 1 of the State Financial Governance Regulation (RI, 2004a) describes a rule to determine an opinion. Following these regulations, BPK, as the LKPD auditor, will provide a professional statement in the form of an opinion based on these criteria in the audit report. Furthermore, based on the audit findings, the BPK will provide recommendations. According to the BPK RI Regulation No. 2/2017 about Monitoring of Recommendation Follow-up on BPK's Examination Results, the local government must pursue the recommendations. The recommendation follow-up is in the form of answers or explanations on the follow-up implementation. It must be submitted to the BPK no later than 60 (sixty) days after receiving the audit report (BPK, 2017a).

This study examines the relationship between audit findings (internal control system, compliance with regulation, and audit recommendation follow-up) and audit opinion in the public sector. Given that public sector organizations in Indonesia have undergone reform (Harun et al., 2021; Harun et al., 2015; Prabowo, 2018), both in terms of accountability and budget (Harun et al., 2020; Sylvia et al., 2018), an audit including an assessment of public sector activities related to output, outcome, and evaluation (Nerantzidis et al., 2022) or performance-based measurement (Akbar et al., 2015) is increasingly needed. However, in Indonesia, public sector audits still focus on financial accountability, particularly audit findings such as SPI and compliance with regulations. For this reason, research focusing on accountability is still needed (Aikins, 2012). Several researchers have examined the factors that influence good audit opinions on local governments (Amyulianthy et al., 2020; Habiby & Ritonga, 2020; Kesuma & Ritonga, 2020; Ningsih, 2016; Nor et al., 2019; Nurdiono et al., 2016; Safitri & Darsono, 2015; Siregar & Rudiansyah, 2019; Widodo & Sudarno, 2017) and ministry/institution (Fitria et al., 2015; Sari, 2016; Tresnawati & Apandi, 2016). They examine how the findings of BPK's audit impact audit opinion. Generally speaking, their studies result in inconsistent findings. For example, Widodo and Sudarno (2017) examine the relationship between weaknesses in the internal control system and audit

opinions. They learned that weaknesses in the internal control system affected audit opinions. In contrast, studies by Nurdiono et al. (2016) and Safitri & Darsono (2015) state that the internal control system's weakness does not affect the audit opinion. The same results also occur in studies that examine the relationship between audit opinions using other factors, such as compliance with regulations and follow-up to the previous audit findings.

The inconsistency of previous studies' results opens up opportunities for the same test using samples from different regions. Thus, this study aims to close the gap by using all LKPD's sample data from the Kalimantan region during 2015-2020. Specifically, the research objectives are to examine:

1. Do the Internal Control System findings affect BPK's audit opinion?
2. Does compliance with the regulations' findings affect BPK's audit opinion?
3. Do the audit recommendation follow-up findings affect BPK's audit opinion?

Empirical evidence from this study will provide additional information regarding the factors that affect the accrual-based LKPD. This study can have implications for local governments whose financial statements are the object of research to understand better the factors that influence BPK's audit opinion. They can develop policies to expand or retain the previously acquired audit opinion. In this case, the governments can emphasize improving one of the significant criteria or sub-criteria in getting WTP opinions so that the quality of public services increases (Furqan et al., 2020). Furthermore, this study yielded findings that were in line with predictions. This finding implies that local governments must improve the implementation of internal control systems and compliance with regulations and consistently undertake BPK recommendations to increase the quality of financial reporting.

This paper has the following research structure: the literature review and hypothesis development, research methodology, and the analysis section, which discusses the results of hypothesis testing. Finally, it provides the conclusions, limitations, and further research suggestions.

**LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

Management of state finances is an essential aspect of the state economy because it is related to its ability to realize state goals and create prosperity. State finances must be managed under the law, orderly, effectively, efficiently, economically, and responsibly regarding a sense of justice and propriety.

Article 2(2) of Law No. 15/2004 concerning the Audit of State Financial Management and Responsibility states that BPK carries out state financial management and responsibility audits. Examination of the government's financial statements aims to obtain reasonable assurance in providing an opinion that the financial statements are presented fairly, in all material respects, regarding conformity with accounting standards, adequacy of disclosure, the effectiveness of the internal control system, and compliance with laws and regulations. Then, Article 1 of the Law states that an opinion is a professional statement as an examiner's conclusion regarding the fairness of the financial information presented in the financial statements. The basis of consideration for determining the opinion is stated by Article 16, Paragraph 1. In addition, the law also states that taking into account these various criteria, audit opinions issued by BPK can be categorized into Unqualified, Qualified, Disclaimer, and Adverse.

**SPI weaknesses findings and BPK's audit opinion**

The Internal Control System (or *Sistem Pengendalian Intern/SPI*) is an integral part of the process of actions and activities carried out continuously by an organization's team. Government Regulation No. 60/2008, adopted the Committee of Sponsoring Organizations (COSO) internal control framework, is the rule that underlies the implementation of the Central and Regional Government Internal Control System (*Sistem Pengendalian Intern Pemerintah/SPIP*). The law states that adequate internal control will rationalize the reliability of financial statements and free them from material misstatement. In addition, an adequate SPI also describes the interrelationships of each element, which can be observed from the integration between SPI elements in producing reliable entity financial statements (RI, 2008). Several studies (Fatimah et al., 2014; Pamungkas et al., 2018; Prasetyaningsih et al., 2014; Safitri & Darsono, 2015; Widodo & Sudarno, 2017) examined the relationship between those variables, and they found that the weakness of the SPI had a negative impact on the approval of the audit opinion. Thus, the hypotheses proposed in this study are:

*H<sub>1</sub>: Findings of the SPI Weaknesses have a negative effect on BPK's opinion.*

**Non-compliance with regulation findings and BPK's audit opinion**

Findings related to regulation compliance reveal entity deviations against regulations. The State Financial Auditing Standard (or *Standar Pemeriksa Keuangan Negara/SPKN*) confirms that the entity's compliance with laws is an aspect that is considered to obtain assurance of

fair financial statements that are free from material misstatement. The state audit standard (BPK, 2017b) states that auditors must disclose information about the entity's non-compliance with regulations, such as administrative irregularities, civil engagement violations, and other significant non-compliance (Prasetyaningsih et al., 2014). The information is essential to disclose as it can result in loss of territory and revenue, potential losses, and inefficient and ineffective administration (Atmaja & Probohudono, 2015). Therefore, the auditor considers the entity's compliance with the regulations when providing an audit opinion. Studies by Fatimah et al. (2014), Pamungkas et al. (2018), Safitri and Darsono (2015), and Widodo and Sudarno (2017) support the regulation. Thus, the proposed hypothesis is as follows:

*H<sub>2</sub>: Findings of non-compliance with regulation have a negative effect on BPK's opinion.*

**Prior audit results follow-up findings and BPK's audit opinion**

The follow-up to BPK's findings is a series of activities/improvements carried out by local governments according to BPK recommendations (Furqan et al., 2020) and are efforts made by local governments to increase public financial accountability (Setyaningrum, 2017). BPK has the authority to make suggestions to the auditee regarding findings during the audit process (BPK, 2017b). In this regard, the local government as auditee is responsible for implementing the suggestion or audit recommendation from the BPK. Effective follow-up on audit recommendations can result in the financial management of local governments being more liable in the following year. Studies by Setyaningrum (2017), Sari (2016) and Mainingrum et al. (2023) show a positive influence between audit recommendations follow-up and audit opinion. Thus, this study builds the following hypotheses:

*H<sub>3</sub>: The follow-up to the audit results in the previous period has a positive effect on BPK's audit opinion.*

**RESEARCH METHODS**

**Research data and sample**

This study explains the causal relationship between the dependent variable (audit opinion) and the independent variable (internal control system, compliance with regulations, and follow-up on audit results). It uses secondary data from the Audit Results Report, Follow-up to BPK's Audit Recommendations, and IHPS. This period is the latest time the LKPD has been prepared using the accrual accounting method. The data was collected for six years (2018-2023) from the study population: all provincial/district/city governments in West Kalimantan, Central Kalimantan, and South Kalimantan, totalling 44 entities (36 districts, five cities, and three provinces). The purposive sampling method was applied to determine the research sample using the following criteria:

1. Local governments (provinces/districts/cities) in the Kalimantan region whose financial reports were audited by the BPK from 2018 to 2023.
2. Local governments (provinces / districts / municipalities) in the Kalimantan region where follow-up

monitoring has been carried out on the recommendations of the BPK's audit results for the 2018-2023 audit results. Three hundred fifty-four (354) observational data were obtained during the study period (see Table 2).

Table 2. Research Data

Criteria	Total
Number of local governments in the Kalimantan region	61
Local governments in Kalimantan that do not monitor the BPK's audit recommendations follow-up during the whole observation period	(2)
The number of samples	59
Year of observation	6
Number of observations during the research period	354

Source: Processed Data (2024).

**Empirical model and variable operationalization**

To answer research questions and, at the same time, test research hypotheses, this study uses logistic regression as applied by Atmaja and Probohudono (2015), Pamungkas et al. (2018), Tresnawati and Apandi

(2016), Dashtbayaz et al. (2022). The analysis is reasonable because the study uses the dependent variable as a dichotomy or binary with code 0 or 1. The logistic regression model developed in this study is as follows:

$$\ln \frac{OPI}{1 - OPI} = \gamma_0 + \gamma_1 SPI + \gamma_2 KPU + \gamma_3 TLHP$$

where:

- OPI = *opini audit* (audit opinion)
- SPI = *sistem pengendalian intern* (internal control system)
- KPU = *kepatuhan pada perundang-undangan* (compliance with regulation)
- TLHP = *tindak lanjut hasil pemeriksaan* (audit recommendation follow-up)
- $\gamma_0$  = constant
- $\gamma_1, \gamma_2, \gamma_3$  = regression coefficient

The dependent variable used is BPK's opinion (OPI), a dummy variable with a score of 1 for WTPs and 0 for non-WTPs. It means that if the LKPD obtains a WTP opinion, then the LKPD has presented financial information fairly. On the other hand, if the LKPD receives an opinion other than the WTP, the LKPD has not given proper financial statements. This study uses three independent variables: the internal control system, compliance with regulations, and follow-up on the examination results. Table 3 presents information about each variable's operational definition and measurement scale, referring to the research of Furqan et al. (2020).

This research uses Hosmer and Lemeshow's test to test the model's suitability with empirical data. If the value of Hosmer and Lemeshow > 0.05, the model can predict observation values. The Nagelkerke R Square measures how far the model can explain the dependent variable's variation. The smaller the value of R2, the smaller the dependent variable's ability to explain the relationship. Moreover, we conduct the overall model fit test (Overall Model Fit) by comparing the chi-square

values generated from the statistical SPSS test results from calculating the logistic regression model with chi-square. According to Ghazali (2016), the chi-square value in logistic regression is a "model fit" comparison model. The criteria for determining the results of the statistical decision model of the simultaneous test are if the chi-square statistic is more than the chi-square table and the probability of the significance level < 5%, then H0 is rejected, and Ha is accepted. The study uses the Wald test to test partially whether or not the independent variable's effect on the dependent variable. We conduct the test by comparing the Wald statistical value to the comparison value of chi-square with a significance level of 5%. If the p-value is smaller than the significance level, the hypothesis is accepted, or the independent variable significantly affects the dependent variable. Suppose the Wald statistic is more than the chi-square table and the probability of significance level is less than 5%; then H0 is rejected, and Ha is accepted. That is, the independent variables partially affect the BPK's audit opinion.

Table 3. Operational Definition and Variable Measurement Scale

Variable	Definition	Parameter	Scale
Audit Opinion (OPI)	The auditor's professional statement regarding the fairness of the financial information presented in the financial statements	BPK's audit opinion	Dummy
Internal Control System (Sistem Pengendalian Intern/SPI)	An integral part of the actions and activities process performed continuously by the management and all employees to provide adequate conviction in reaching organizational targets through effective and efficient activities, reliability of financial reporting, safeguarding assets, and compliance with regulations	Total number of the internal control system findings	Ratio
Compliance with regulation (Kepatuhan pada Undang-Undang/KPU)	Information on irregularities/violations against regulations	Total number of non-compliance with regulations findings	Ratio
Audit recommendation follow-up (Tindak Lanjut Hasil Pemeriksaan/TLHP)	A series of activities/improvements carried out by the local government following BPK recommendations	Follow-up index following BPK recommendations	Ratio

**RESULTS AND DISCUSSION**

The characteristics of the dependent variable are categorical, with 1 for WTPs and 0 for non-WTPs (Table 4 panel A). Moreover, the characteristics of the independent variables (the internal control system, compliance with regulations, and audit recommendations follow-up) are presented as minimum, maximum, average, and standard deviation values because the data is measured in a ratio scale (Table 4 panel B).

It can be seen from Panel A in Table 4 that the BPK audit opinion on LKPD in the Kalimantan region during the observation period was 354 data consisting of two types of opinions, WTPs and non-WTPs. The number of local governments with a WTP opinion is 283 entities or 79.9 percent, and those with a non-WTP opinion are 71 entities or 20.1 percent. Turning to Panel B, the SPI variable is measured using internal control system findings. The average number of internal control system findings during the observation period was ten, with the lowest and highest scores, 1 and 42, respectively.

Table 4. Descriptive Statistic

A. Dependent variable: Audit opinion					
	Frequency		Percentage		
0	71		20,1		
1	283		79,9		
Total	354		100,0		
B. Independent variables: SPI, KPU, TLHP					
	N	Minimum	Maximum	Mean	Deviation Standard
SPI	354	1	42	10,08	4,786
KPU	354	1	39	8,39	4,209
TLHP	354	0,06	1,00	0,74	0,211

Source: Processed Data (2024).

The KPU variable measured using findings on non-compliance with regulations is divided into several types: findings of state/regional losses, potential state/regional losses, lack of revenue, and administrative irregularities. During the observation period, the average findings related to compliance with regulations in the Kalimantan region amounted to 8-9 findings.

Most (74 percent) local governments in the Kalimantan region followed up on BPK's recommendations during the observation period. Only a minuscule percentage (6 percent) have not followed up on BPK's recommendations. Meanwhile, local governments that follow up on BPK's recommendations in total (100 percent) are different for each year. Table 5 presents the results of the logistic regression test, which constructs the following regression equation:

$$\ln \frac{OPI}{1 - OPI} = 10,637 - 0,472SPI - 0,841KPU + 1,975TLHP$$

Table 5. Results of Hypothesis Testing

	B	S.E.	Wald	Sig.	Exp(B)
SPI	-,472	,069	46,731	,000	,624
KPU	-,841	,133	39,743	,000	,431
TLHP	1,975	,842	5,501	,019	7,204
Konstanta	10,637	1,403	57,493	,000	41652,642
Hosmer and Lemeshow Test			9,712(,286)		
-2Log likelihood			178,226		
Nagelkerke R Square			,622		
Omnibus Tests			174,490(,000)		

Source: Processed Data (2024).

In addition, Table 5 also provides information about the regression results. The results show that the chi-square value ( $X^2$ ) is 9.712 and significant (0.286), indicating the model can predict observation value and is feasible to use. The Nagelkerke R Square is 0.622, meaning the independent variable's variability in explaining the dependent variable is 62.2%. Furthermore, other variables outside the research model explain the remaining 37.8%. Testing the overall model fit is 174,490 (0.000), concluding that SPI, KPU, and TLHP simultaneously affect the BPK audit opinion.

Furthermore, hypothesis testing for the SPI variable statistically affects BPK's audit opinion [p-value = 46,731(0.000)]. It concludes that the first hypothesis of this study is accepted. The coefficient on the SPI variable is negative (-0.472), indicating that the lower the SPI findings, the higher the superior audit opinion from the BPK. For example, if there is a decrease in SPI findings by one or 0.472 units, it will impact or increase the better opinion either by one or 0.472 units with the assumption that the other values are constant. The odds ratio (0.624) means that a decrease in SPI findings increases better audit opinion by 0.624 times.

It is turning to the KPU variable, which is compliance with regulations. The Wald statistic value is 39.743(0.000). This result indicates that hypothesis H2 is accepted; regulation compliance significantly affects BPK's audit opinion. The KPU variable that produces negative (-0.841) suggests that the lower the non-compliance finding, the higher the superior audit opinion from BPK. This means that if there is a decrease in the finding of non-compliance by one or 0.841 units, the opinion will increase by one or 0.841 units, with the assumption that the other values are constant. The odds ratio (0.431) means that a decrease in non-compliance findings will increase better opinion by 0.431 times.

Meanwhile, the statistical test result for the recommendation follow-up variable (TLHP) is 5.501 with a significance of 0.019, meaning that H3 is accepted or the TLHP variable significantly affects the BPK's audit opinion. The resulting TLHP value is positive (1.975), indicating that if there is an increase in the follow-up index following BPK's recommendations by one or 1.975 units, it will increase the opinion by one or 1.975 units, assuming the other values are constant. Then, the odd ratio (7.204) means that the follow-up to the BPK recommendations tends to increase better opinion by 7.204 times.

## Discussion

The findings of this study indicate that the effectiveness of SPI, compliance with regulations, and follow-up actions taken by the auditee on the auditor's recommendations are essential elements in determining the audit opinion. An unqualified audit opinion indicates the optimal quality of auditee (local government) services.

As predicted, using data from the Kalimantan region's LKPD, the SPI findings influence the BPK's audit. The test of this variable uses the number of findings of the internal control system and shows that these findings significantly negatively affect BPK's audit opinion. Conceptually, internal control is needed in organizational governance to support organizational goals. LKPD Examination Guide (2021) No. 1/K/I-XIII.2/1/2021 describes weak internal controls resulting in incomplete accounting records and inadequate documents, and the system does not produce valid accounting data. Also, the condition does not allow the auditor to carry out adequate audit procedures. As a result, the auditor will provide an opinion other than the WTP.

The result supports the studies conducted by Fatimah et al. (2014), Munawar et al. (2016), and Widodo and Sudarno (2017), which state that the internal control system affects the increase in audit opinion that a government entity will accept. If the control system gets better in implementation, it will result in fewer findings from the internal control system, so the opinions obtained will be better. This research also supports Irman and Suryati's (2017) and Zufadin and Maulina's (2017) study. They attribute the weakness of the SPI to changes in audit opinion, and the results show that weaker internal control influences the decline in audit opinion on an entity. However, the results of this study are not in line with the research conducted by Budiawan and Purnomo (2014), Nurdiono et al. (2016), Pamungkas et al. (2018), Safitri and Darsono (2015), which state that the internal control system has no significant effect on the results of local government financial statement opinions. Thus, this study's result supports the legislation's statement (RI, 2004b), which states that the SPI findings determine an audit opinion.

Moreover, compliance with regulations in this study is the second factor assumed to influence the BPK's audit opinions on the financial statements of local governments in the Kalimantan region. Testing this variable using the amount of non-compliance with regulations shows that

## Audit, Analysis & Control

these findings significantly negatively affect BPK's audit opinion. According to LKPD Examination Guidelines (2021), if the auditors believe that the entity commits unlawful acts that materially impact the financial statements and does not correct the violation or adequately disclose the information, the auditor should consider not giving a WTP opinion.

The result supports research conducted by Fatimah et al. (2014), Munawar et al. (2016), Safitri and Darsono (2015), and Widodo and Sudarno (2017), stating that compliance with regulations affects increasing the LKPD's opinions. Munawar et al. (2016) explained that if an entity shows compliance with rules, the number of audit findings on non-compliance will be smaller, and the opinion on LKPD obtained will be better. Fatimah et al. (2014) explain that non-compliance with regulations results in regional/company losses and administrative irregularities; thus, they conclude that there is a relation between WTP's audit opinion and compliance with regulations – however, other studies found otherwise (Yusuf & Gustiana, 2022).

Finally, the follow-up to the examination results in this study is the third factor assumed to have influenced the BPK's audit opinion on the financial statements of local governments in the Kalimantan region. Testing this variable shows that TLHP has a significant positive effect on BPK's audit opinion. TLHP is one of the efforts to rectify audit findings following the recommendations stated in the Audit Results Report (or *Laporan Hasil Pemeriksaan/LHP*) of BPK on local government financial reports. Local governments following up on the audit recommendations

will produce higher-quality financial reports in the next period because the same or similar findings may not be repeated. In addition, determining the materiality level also considers follow-up actions taken by local governments. The higher the appropriate follow-up, the higher the materiality level on the account. Thus, it will affect the materiality level of the findings. The more the results are deemed immaterial, the more favourable the opinion.

The results of this study support research conducted by Furqan et al. (2020), Sari (2016), Tresnawati and Apandi (2016), and Saipuloh et al. (2023). The greater the number of audit results that conform with BPK's recommendations, the higher the quality of financial reports; thus, the entity is likely to increase audit opinion quality. It follows Article 16, paragraph 1 of Law No. 15/2004. However, the results do not support research conducted by Nurdiono et al. (2016), which states that the follow-up to the BPK's recommendations has no significant effect on the disclosure level in the financial statements.

### Robustness check

This study uses a robustness check model to test whether the research results are robust. We consider using different estimators (outlier patterns), as suggested by Ahmad et al. (2010), Rousseeuw and Christmann (2003) and Tabatabai et al. (2014). The results show that each independent variable significantly affects the dependent variable (see Table 6). However, the resulting coefficient value is small, at 8 percent. The presence of outlier data strengthens the main findings of this study.

Table 6. Robustness check results

	B	S.E.	Wald	Sig.	Exp(B)
SPI	-,065	,027	5,827	,016	,937
KPU	-,278	,128	4,742	,029	,757
TLHP	1,389	,577	5,793	,018	4,011
Konstanta	1,754	,347	25,520	,000	5,777
Hosmer and Lemeshow Test			16,837(,052)		
-2Log likelihood			335,865		
Nagelkerke R Square			,082		
Omnibus Tests			18,974(,000)		

Source: Processed Data (2024).

### CONCLUSION

This study is intended to empirically prove the factors that influence BPK's audit opinion by using estimation parameters derived from 354 IHPS reports for the Kalimantan region during 2018-2023. The results show that all the proposed hypotheses are supported. SPI and compliance with regulations' findings significantly and negatively affect BPK's audit opinion. This means that acquiring BPK audit opinions on local governments is better. Furthermore, the results of TLHP have a significant positive effect on BPK's audit opinion, which indicates that the higher the TLHP index, the better the BPK audit opinion will be. This result has implications for local governments to understand better the factors that influence BPK's audit opinion to shrink the right strategy

to maintain WTP opinions or increase opinions to become WTP.

The next researcher can follow up on the limitations of the research. The study only uses data from provinces, districts, and cities in the Kalimantan region, so it may cause bias in the method (Jakobsen & Jensen, 2015). To minimize bias, the next researcher can use a larger sample of data, not just one area. In addition, the measurement of the examination findings variable using the number of findings approach does not fully describe its effect on opinion (Atmaja & Probohudono, 2015). Each examination finding has different characteristics and conditions, thus impacting opinion determination differently. For that, the next researcher can use other measurements.

## 4 References

- Ahmad, S., Ramli, N. M., & Midi, H. (2010). Robust estimators in logistic regression: A comparative simulation study. *Journal of Modern Applied Statistical Methods*, 9(2), 502–511. <https://doi.org/10.22237/jmasm/1288585020>
- Aikins, S. (2012). Determinants of auditee adoption of audit recommendations: Local government auditors' perspective. *Public Budgeting, Accounting & Financial Management*, 24(2), 195–220. <https://doi.org/10.1108/JPBAFM-24-02-2012-B002>
- Akbar, R., Pilcher, R. A., & Perrin, B. (2015). Implementing performance measurement systems: Indonesian local government under pressure. *Qualitative Research in Accounting and Management*, 12(1), 3–33. <https://doi.org/10.1108/QRAM-03-2013-0013>
- Amyulianthy, R., Anto, A. S. U., & Budi, S. (2020). Temuan dan tindak lanjut hasil pemeriksaan terhadap opini audit (Studi pada pemerintah provinsi di Indonesia). *Jurnal Penelitian Akuntansi*, 1(1), 14–27.
- Atmaja, R. S. A., & Probohudono, A. N. (2015). Analisis audit BPK RI terkait kelemahan SPI, temuan ketidakpatuhan dan kerugian negara. *INTEGRITAS Jurnal Anti Korupsi*, 1(1), 81–110.
- BPK. (2017). Peraturan BPK Nomor 2 Tahun 2017 Pemantauan Pelaksanaan Tindak Lanjut Rekomendasi Hasil Pemeriksaan Badan Pemeriksa Keuangan [BPK Regulation No. 2/2017 Monitoring the implementation of audit recommendation follow-up]. Jakarta: Republic of Indonesia.
- BPK. (2017). Standar Pemeriksaan Keuangan Negara [State audit standard]. Jakarta: Republic of Indonesia.
- Budiawan, D. A., & Purnomo, B. S. (2014). Pengaruh sistem pengendalian internal dan kekuatan koersif terhadap kualitas laporan keuangan pemerintah daerah. *Jurnal Riset Akuntansi Dan Keuangan*, 2(1), 276–288. <https://doi.org/10.17509/jrak.v2i1.6581>
- Dashtbayaz, M. L., Salehi, M., & Hedayatzadeh, M. (2022). Comparative analysis of the relationship between internal control weakness and different types of auditor opinions in fraudulent and non-fraudulent firms. *Journal of Financial Crime*, 29(1), 325–341. <https://doi.org/10.1108/JFC-01-2021-0005>
- Fatimah, D., Sari, R. N., & Rasuli, M. (2014). Pengaruh sistem pengendalian intern, kepatuhan terhadap peraturan perundang-undangan, opini audit tahun sebelumnya dan umur pemerintah daerah terhadap penerimaan opini wajar tanpa pengecualian pada laporan keuangan pemerintah daerah di seluruh Indonesia. *Jurnal Akuntansi*, 3(1), 1–15.
- Fitria, N., Suratno, & Sailendra. (2015). Faktor-faktor yang mempengaruhi opini disclaimer BPK (Studi empiris pada Inspektorat Jenderal Kementerian Komunikasi dan Informatika Perhubungan Republik Indonesia). *Jurnal Ilmiah Akuntansi & Humanika*, 5(1), 97–116.
- Furqan, A. C., Wardhani, R., Martani, D., & Setyaningrum, D. (2020). The effect of audit findings and audit recommendation follow-up on the financial report and public service quality in Indonesia. *International Journal of Public Sector Management*, 33(5), 535–559. <https://doi.org/10.1108/IJPSM-06-2019-0173>
- Ghozali, I. (2016). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 21* (8th ed.). Semarang: Badan Penerbit Universitas Diponegoro.
- Habiby, A. L. E., & Ritonga, I. T. (2020). Analisis hubungan antara tingkat kepatuhan pemerintah daerah terhadap peraturan perundang-undangan dengan opini atas laporan keuangan daerah. *Accounting and Business Information System Journal*, 8(1), 1–20.
- Harun, H., Carter, D., Mollik, A. T., & An, Y. (2020). Understanding the forces and critical features of a new reporting and budgeting system adoption by Indonesian local government. *Journal of Accounting and Organizational Change*, 16(1), 145–167. <https://doi.org/10.1108/JAOC-10-2019-0105>
- Harun, H., Eggleton, I. R. C., & Locke, S. (2021). An integrated model of IPSAS institutionalisation in Indonesia: a critical study. *International Journal of Public Sector Management*, 34(2), 155–170. <https://doi.org/10.1108/IJPSM-07-2020-0195>
- Harun, H., Van-Peursem, K., & Eggleton, I. R. C. (2015). Indonesian public sector accounting reforms: Dialogic aspirations a step too far? *Accounting, Auditing and Accountability Journal*, 28(5), 706–738. <https://doi.org/10.1108/AAAJ-12-2012-1182>
- Irman, M., & Suryati. (2017). Pengaruh kelemahan sistem pengendalian internal, ketidakpatuhan pada perundang-undangan, opini tahun sebelumnya dan umur pemerintah daerah terhadap opini audit di Kabupaten/Kota Provinsi Riau tahun 2011-2014. *Jurnal Akuntansi, Kewirausahaan Dan Bisnis*, 2(2), 197–209. Retrieved from <http://www.ejournal.pelitaIndonesia.ac.id/ojs32/index.php/KURS/article/view/203>
- Jakobsen, M., & Jensen, R. (2015). Common method bias in public management studies. *International Public Management Journal*, 18(1), 3–30. <https://doi.org/10.1080/10967494.2014.997906>
- Kesuma, I., & Ritonga, I. T. (2020). Analysis of relationship between effectiveness of internal control system and audit opinions on local government financial statements. *The Indonesian Journal of Accounting Research*, 23(03), 467–490. <https://doi.org/10.33312/ijar.497>
- Mainingrum, R., Sylvia, Oktaviani, A. R., & Meuthia, R. F. (2023). The effect of audit findings, follow-up audit recommendations, and BPK opinions from the previous year on the determination of opinions in local government financial statements. *Economics, Business, Accounting & Society Review*, 2(1), 58–73. <https://doi.org/10.55980/ebasr.v2i1.56>
- Munawar, Nadirsyah, & Abdullah, S. (2016). Pengaruh jumlah temuan audit atas SPI dan jumlah temuan audit atas kepatuhan terhadap opini atas laporan keuangan pemerintah kabupaten/kota di Aceh. *Jurnal Magister Akuntansi Pascasarjana Universitas Syiah Kuala*, 5(2), 57–67.
- Nerantzidis, M., Pazarskis, M., Drogalas, G., & Galanis, S. (2022). Internal auditing in the public sector: a systematic

- literature review and future research agenda. *Journal of Public Budgeting, Accounting and Financial Management*, 34(2), 189–209. <https://doi.org/10.1108/JPBAFM-02-2020-0015>
- Ningsih, S. (2016). The antecedents of non-unqualified opinions of local governments financial statements: A study on counties and cities in East Java Province. *Asian Journal of Accounting Research*, 1(1), 16–27. <https://doi.org/10.1108/AJAR-2016-01-01-B003>
- Nor, W., Hudaya, M., & Novriyandana, R. (2019). Financial statements disclosure on Indonesian local government websites: A quest of its determinant(s). *Asian Journal of Accounting Research*, 4(1), 112–128. <https://doi.org/10.1108/AJAR-06-2019-0043>
- Nurdiono, N., Sugiri, S., Halim, A., & Gudono, G. (2016). The effect of budgets proportion and non-financial factors on the audit results of local governments' financial statements in Indonesia. *Journal of Indonesian Economy and Business*, 31(2), 178–191. <https://doi.org/10.22146/jieb.15288>
- Pamungkas, B., Ibtida, R., & Avrian, C. (2018). Factors influencing audit opinion of the Indonesian municipal governments' financial statements. *Cogent Business and Management*, 5(1), 1–18. <https://doi.org/10.1080/23311975.2018.1540256>
- Prabowo, T. J. W. (2018). Reforms in public sector accounting and budgeting in Indonesia (2003-2015): Confusions in implementation. *Journal of Public Budgeting, Accounting and Financial Management*, 30(1), 2–21. <https://doi.org/10.1108/JPBAFM-03-2018-002>
- Prasetyaningsih, E., Yuhalfiyah, G., & Susanto, H. (2014). Internal control system weakness and non-compliance to the provision of legislation in practicing audit of local government in Indonesia. *Open Journal of Political Science*, 4(4), 257–264. <https://doi.org/10.4236/ojps.2014.44028>
- RI. (2004). Undang-Undang Pemeriksaan Pengelolaan dan Tanggung Jawab Keuangan Negara Nomor 15 Tahun 2004 [The audit of the management and responsibility of the State Finance Act No. 15/2004]. Jakarta: Government of Indonesia.
- RI. (2004). Undang-Undang Perbendaharaan Negara Nomor 1 Tahun 2004 [The State Treasury Act No. 1/2004]. Jakarta: Government of Indonesia.
- RI. (2008). Peraturan Pemerintah Nomor 60 Tahun 2008 Sistem Pengendalian Intern Pemerintah [Government Regulation No. 60/2008 on Government Internal Control System]. Jakarta: Government of Indonesia.
- Rousseuw, P. J., & Christmann, A. (2003). Robustness against separation and outliers in logistic regression. *Computational Statistics and Data Analysis*, 43(3), 315–332. [https://doi.org/10.1016/S0167-9473\(02\)00304-3](https://doi.org/10.1016/S0167-9473(02)00304-3)
- Safitri, N. L. K. S. A., & Darsono. (2015). Pengaruh sistem pengendalian internal dan temuan kepatuhan terhadap opini audit pada pemerintah daerah. *Diponegoro Journal of Accounting*, 5(1), 1–12.
- Saipuloh, S., Ismail, T., & Adha, W. M. (2023). The effect of audit findings, local government losses, and follow-up of audit recommendations on the public services quality through the audit opinion of local government financial statements in Sulawesi. *International Journal of Applied Business and International Management*, 8(3), 1–16. <https://doi.org/10.32535/ijabim.v8i3.2639>
- Sari, A. P. (2016). Faktor-faktor yang mempengaruhi opini audit dengan tingkat pengungkapan laporan keuangan kementerian/lembaga sebagai variabel intervening. *Jurnal BPPK*, 9(1), 33–46. Retrieved from <https://jurnal.bppk.kemenkeu.go.id/jurnalbppk/article/view/117>
- Setyaningrum, D. (2017). The direct and mediating effects of an auditor's quality and the legislative's oversight on the follow-up of audit recommendation and audit opinion. *International Journal of Economic Research*, 14(13), 269–292.
- Siregar, M. I., & Rudiansyah, J. (2019). Pengaruh jumlah temuan audit terhadap opini audit kabupaten/kota se-Sumatera. *Jurnal Ecoment Global*, 4(1), 101–124. <https://doi.org/10.35908/jeg.v4i1.576>
- Sylvia, Sukoharsono, E. G., Prihatiningias, Y. W., & Roekhuudin. (2018). Public interest and accrual accounting: are they aligned? *Journal of Accounting and Organizational Change*, 14(4), 366–380. <https://doi.org/10.1108/JAOC-10-2017-0094>
- Tabatabai, M. A., Li, H., Eby, W. M., Kengwoung-Keumo, J. J., Manne, U., Bae, S., ... Singh, K. P. (2014). Robust logistic and probit methods for binary and multinomial regression. *Journal of Biometrics & Biostatistics*, 5(4), 202. <https://doi.org/10.4172/2155-6180.1000202>
- Tresnawati, F., & Apandi, R. N. N. (2016). Pengaruh tindak lanjut hasil pemeriksaan terhadap kualitas laporan keuangan dengan tingkat pengungkapan laporan keuangan sebagai variabel moderating (Studi empiris pada kementerian/lembaga Republik Indonesia). *Jurnal ASET (Akuntansi Riset)*, 8(1), 13–24. <https://doi.org/10.17509/jaset.v8i1.4017>
- Widodo, O. P., & Sudarno. (2017). Pengaruh temuan kelemahan sistem pengendalian intern dan temuan ketidakpatuhan terhadap ketentuan peraturan perundang-undangan terhadap opini BPK atas laporan keuangan pemerintah daerah. *Diponegoro Journal of Accounting*, 6(1), 153–161.
- Yusuf, M., & Gustiana, N. (2022). Pengaruh sistem pengendalian internal dan kepatuhan terhadap opini audit pemerintah pusat dengan rekomendasi audit sebagai variabel moderasi. *RELEVAN: Jurnal Riset Akuntansi*, 3(1), 56–64. <https://doi.org/10.35814/relevan.v3i1.4147>
- Zufadin, Y., & Maulina, R. (2017). Opini audit dan sistem pengendalian intern (Studi kasus di Pemerintah Kota Lhokseumawe yang mengalami penurunan opini audit). *Media Riset Akuntansi Dan Bisnis*, 1(1), 83–93. <https://doi.org/10.35308/akbis.v1i1.362>