

## How Government Internal Control System Supporting Regional Development Goals: Empirical Evidence from Internal Control System in Indonesia

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### Abstract

This study provides an empirical understanding of how integrated internal government controls in Indonesia can support regional development goals. Using Path analysis, we test the relationship between government internal control systems, budget efficiency, and regional development, with emphasis on health, education, and poverty. Surprisingly, the study revealed that instruments within the government's internal control systems, the corruption prevention effectiveness index, and the government's internal oversight positively impacted budget efficiency. However, we found that the risk management index negatively affected budget efficiency. In conclusion, this study establishes a link between internal government control, budget efficiency, and development goals. These findings underscore the importance of implementing high-quality internal oversight to support regionalized national development objectives.

**Keywords:** SPIP, Government Internal Supervision, Indonesia, Budget Efficiency, Development Goals.

### Abstrak

*Studi ini memberikan pemahaman empiris tentang bagaimana sistem pengendalian internal pemerintah yang terintegrasi di Indonesia dapat mendukung tujuan pembangunan daerah. Menggunakan path analysis, kami menguji hubungan antara sistem pengendalian internal pemerintah, efisiensi anggaran, dan pembangunan daerah, dengan penekanan pada kesehatan, pendidikan, dan kemiskinan. Kami menemukan bahwa instrumen dalam SPIP, IEPK, dan APIP berdampak positif terhadap efisiensi anggaran. Akan tetapi, di sisi lain kami menemukan bahwa indeks manajemen risiko berdampak negatif terhadap efisiensi anggaran. Kami menyimpulkan bahwa terdapat hubungan antara pengendalian internal pemerintah, efisiensi anggaran, dan tujuan pembangunan. Temuan ini menggarisbawahi pentingnya penerapan pengawasan internal yang berkualitas tinggi untuk mendukung tujuan pembangunan regional.*

**Kata Kunci:** SPIP, Sistem Pengawasan Internal Pemerintah, Indonesia, Efisiensi Anggaran, Tujuan Pembangunan

### Introduction

Good governance is the primary basis for measuring quality and effectiveness. Since 2010, research on the quality of government has developed increasingly from a quantitative

perspective, especially with the introduction of the World Governance Indicators by Kaufmann et al. (2010). This indicator is the result of development based on the UNDP (1997) assessment, which covers three main aspects such as economic, administrative, and political sectors. One of the most important aspects of enforcing good governance on the administrative side is the government's internal control system. Although it plays a crucial role, implementing the government's internal control system is not applied without challenging, especially those related to budget control and government program planning.

Measuring the effectiveness of government programs has always been aligned with the Sustainable Development Goals (SDGs), which encourage the government to focus its internal control system on this alignment (Y. Liu, 2018; Su et al., 2022). The SDGs provide a global blueprint for sustainable future long-term economic growth, including poverty, inequality, and climate change, as well as protection from environmental degradation, peace, and justice (Ramirez-Rubio et al., 2019; Sharma et al., 2021). Integrating internal control systems with SDGs involves aligning core elements, processes, and government strategies with specific targets and indicators outlined in the SDG framework (Sauvé et al., 2016). This ensures that government activities adhere to the principles of good governance and actively contribute to sustainable development on a broad scale. For example, internal controls can be designed to monitor and evaluate government initiatives related to poverty alleviation, environmental conservation, and social justice. A government's internal control system gives management and staff enough assurance that the organization's goals will be met through dependable financial reporting, secure financial reporting, and effective and efficient operations (Sutaryo & Sinaga, 2018). This is an integrated process for actions and activities that are conducted continuously, and compliance with government assets and regulations can be achieved through government-applicable laws. An effective internal control system is the most important aspect for realizing a good and clean government, especially for measuring government effectiveness and accountability (OECD, 2010; GAO, 2014). In recent decades, assessments of government effectiveness have been increasingly linked to regional development goals. Most previous studies, such as those by Abhayawansa et al. (2021), Biermann et al. (2022), and Morita I. (2020), have focused on evaluating the impact of government programs on the achievement of Sustainable Development Goals (SDGs) after their implementation, examining both the output of politics and the government's role in the process.

Some studies, such as those by Kemisola & Magret (2019); Silva et al., (2023); Ujkani & Vokshi (2019), show that the development of an internal control such as Public Internal Financial Control (PIFC) plays a key role in providing good financial management, increasing

transparency, and increasing efficiency and effectiveness in the public sector. The importance of the budget in the government's internal control process has encouraged us to include government budget variables in the analysis that we will carry out. This reflects the awareness of the close relationship between government financial management and the overall quality of the government. Fukuyama (2013) measures of bureaucratic quality, such as the Bertelsmann Transformation Index which focuses more on how effectively policymakers facilitate and direct the development and transformation process, and also the Political Risk Service's Group (PRSG) International Country Risk Guide. In addition, four of the six World Governance Indicators (WGI) by the World Bank are intended to provide measurements of a country's capacity in terms of government effectiveness, regulatory quality, stability, and the absence of conflict, as well as to control corruption.

Concurrently, a significant shift in governance models has been observed, marked by decentralization and the involvement of numerous actors, challenging the traditional "hierarchical" approach (Tosun & Schoenefeld, 2017). While the government may harbor positive intentions in its pursuit of development goals, Allen et al. (2023) underscore the complexity arising from overlapping theories and approaches within the transformative governance of the SDGs. This study, while not delving into the empirical effectiveness of these approaches, sheds light on the key scales of interest and addresses the substantial scalar challenges and problem frameworks associated with the six major governance approaches.

In Indonesia, the Financial and Development Supervisory Agency (*Badan Pengawas Keuangan dan Pembangunan*, or BPKP) has been appointed as the organizer of the government's internal control system (hereinafter referred to as SPIP) and is accountable for the development of technical guidelines, outreach, education and training, guidance and counseling on the government's internal control system, as well as the enhancement of the capabilities of the government's internal supervision apparatus (APIP). Along with the issuance of Government Regulation Number 60 in 2008, their appointment was a proposal to strengthen and support the effectiveness of the government's internal control system. The guidelines issued by BPKP to local governments, despite BPKP not being formally included in the organizational structure of any local government, might be referred to as internal source audits. Outsourcing internal audits facilitates collaboration to address several issues.

The measurement of government effectiveness and accountability has remained a serious issue faced by the government of Indonesia in recent decades, especially since the enactment of Law Number 32 of 2004, which changed centralized power to an autonomous regional authority. Implementing regional autonomy in different ways in each region can

significantly change the pattern of government management in implementing its main functions (Mursyidah & Abadi, 2018). With the fragmentation of power, which was initially centralized and divided into provincial, district, and city levels, it became more difficult to implement a good system for internal supervision. Moreover, as regional autonomy appears, the development goals in Indonesia, previously led by the central government, have been given to 552 at the regional level (416 districts, 98 cities, and 38 provinces). This means that the government needs to carry out 552 different internal controls. In 2021, the government of Indonesia started an integrated internal control system through Financial and Development Supervisory Agency Regulation Number 8 of 2021. However, how the effectiveness of the internal control system influences Indonesia's development goals, which have now been established at the regional level, remains a huge question.

Therefore, to bridge the gap, this study intends to analyze how the implementation and effectiveness of an internal control system can influence Indonesia's current development goals. The rest of this article is organized as follows: Section 2 elaborates on the methodology and research model, Section 3 explains the results of the discussion, and Section 4 discusses the conclusions, research limitations, and future work.

## **Methods**

In this quantitative study, we used three secondary data sources in the analysis. The first data source was the integrated government internal control system report (SPIP-T) collected by the Financial and Development Supervisory Agency. The SPIP-T is an assessment instrument used to measure the quality of internal government supervision collected from planning evaluations for each region. Measurements are carried out using various instruments, including goal setting, the structure and process of planned activities, and goal achievement. These three assessments will ultimately form several composite scores in the form of government internal control scores (SPIP Scores), index risk management (MRI), the level of the corruption prevention effectiveness index (IEPK), and the Government Internal Oversight Apparatus (APIP). The forms of measurement in SPIP, MRI, IEPK, and APIP are explained in Table 1.

The second data source is a financial report collected by the Ministry of Finance of the Republic of Indonesia, which includes a report on local government expenditure, local government own-source revenue, the amount of transfers to the local government, and other economic flows by region in 2022. The third data source is the development goals including poverty, health, and education in each region obtained from Statistics Indonesia, which covers

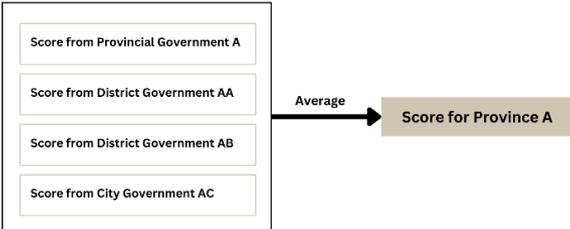
the regional development goals. We used several dependent variables, including poverty, health, and education.

**Table 1.** SPIP, MRI, and IEPK Maturity Level Measurements

Level		Characteristics of Government
<b>Level 0</b>	Absent	There are no policies and procedures within the government that are necessary to implement internal control practices.
<b>Level 1</b>	Initiated	The government has at least one of internal control practice. However, the risk and control techniques that are necessary are still in their ad hoc form and are not organized. Furthermore, there is no communication or monitoring, which results in weaknesses that have not been discovered.
<b>Level 2</b>	Developing	The practice of internal control has been established by the government; however, the documentation of this practice is lacking. The implementation of this plan is extremely dependent on individuals, and not all of the organization's units have been involved in its implementation. Despite the fact that the effectiveness of the control has not been examined, a significant number of problems have not been appropriately addressed.
<b>Level 3</b>	Defined	Internal control procedures have been put into place by the government, and that implementation is thoroughly documented. The evaluation of such an internal check, however, is carried out without sufficient documentation.
<b>Level 4</b>	Managed and Measured	Internal control has been efficiently implemented by the government, with individuals responsible for carrying out each activity maintaining control of the activity in order to achieve the objectives of both the activity and the Local Government. The evaluation is carried out in a professional manner and is meticulously documented.
<b>Level 5</b>	Optimal	The government has created a sustainable internal control system, which is integrated with activity performance and is backed by automatic computer application monitoring.

Source: Financial and Development Supervisory Agency Regulation Number 4 of 2016

The selection of development goals was in line with the Indonesian government's development goals after the recovery period of COVID-19 (Bappenas, 2020). The independent variables used in this study included budget efficiency and internal government supervision, as measured using SPIP, MRI, IEPK, and APIP. Because each data level was different, we performed several treatments for each data source. We performed several steps to equalize the data levels into one composite form through several processes.



**Figure 1.** Average Composite on Province-Level Treatment

The SPIP-T data include the SPIP, MRI, IEPK, and APIP scores collected by the Financial and Development Supervisory Agency, which consists of 542 districts, cities, and provincial governments. Based on these data, we carried out a composite average treatment for each district, city, and provincial government in a province, thus forming the data at the provincial level, which can be explained in Figure 1.

**Table 1.** Variable used in analysis

Variables	Definition	Source	Construct
SPIP	Government internal control scores	Financial and Development Supervisory Agency (BPKP)	Single construct
MRI	Index risk management (MRI)		
IEPK	Level of the corruption prevention effectiveness index (IEPK)		
APIP	Government Internal Oversight Apparatus (APIP)		
Poverty	Level of poverty in each region	Statistic Indonesia	1. Percentage of poor people 2. Poverty depth index
Education	Quality of education in each region		1. Literacy rate 2. Elementary school net enrollment 3. Junior high school net enrollment 4. Senior high school net enrollment 5. Higher education net enrollment 6. Average years of schooling 7. Human development index
Health	Condition of people's health in each region		1. Percentage of Health Complaints 2. Percentage of women whose births were attended by health workers 3. Percentage of the population who self-medicate 4. Level of stunting
Budget Efficiency	A composite score of how local governments spend their budgets towards their goals efficiently	Ministry of Finance of Indonesia	Single construct

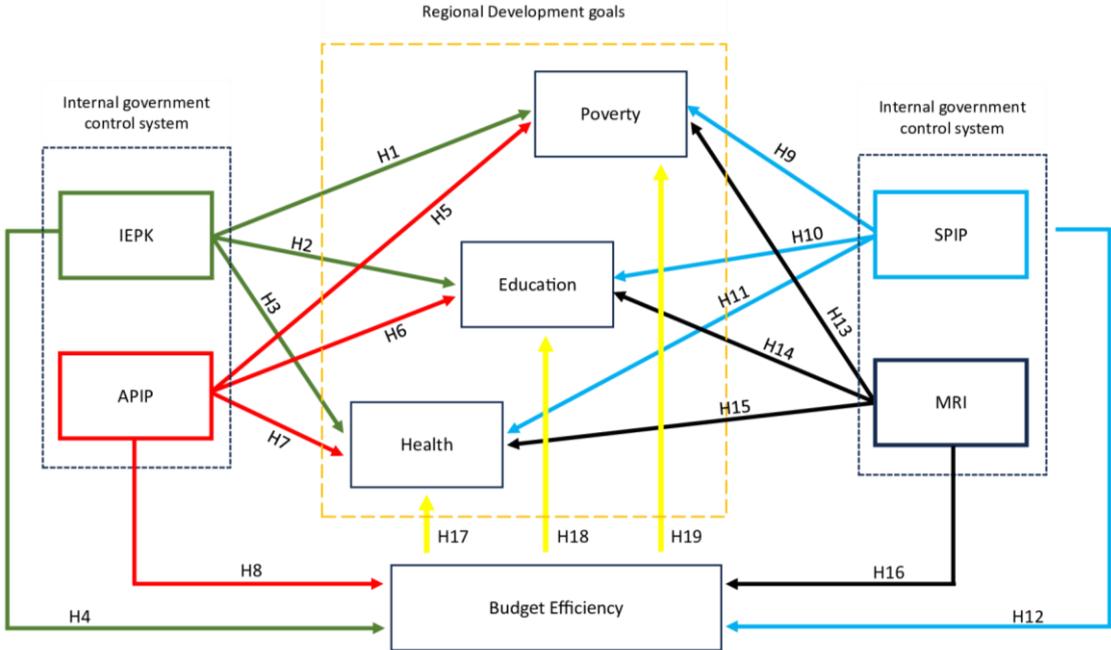
We used data from the Ministry of Finance of the Republic of Indonesia to determine budget efficiency. The treatment performed to obtain these data is complex. This is based on differences in regional income, allocation of regional budget use, and transfers made by the central government to regional governments. Of course, this could be the difference between the achievements of local governments in achieving their expected development goals. Therefore, we attempted to balance these assessments through data envelope analysis using the following equation:

$$\max \theta_j = \frac{\sum_{m=1}^M a^x_m u^x_m}{\sum_{n=1}^N \beta^y_n v^y_n} \dots\dots\dots (1)$$

Where M outputs  $\alpha_1^x \dots, \alpha_m^x$  are multiplied by their respective weights  $u_1^x \dots, u_m^x$  and divided by N inputs  $\beta_1^y \dots, \beta_n^y$  multiplied by their respective weights  $v_1^y \dots, v_n^y$ . From these values, we found the budget efficiency value of the local government in the form of a composite value of 0-1, where 0 means the government budget is inefficient and one means the government budget is very efficient. For the regional development goal data, we used Statistics Indonesia data in the form of poverty, education, and health data. The choice of goals was based on the Indonesian government's development goals after the recovery period from COVID-19 (Bappenas, 2020). Table 2 summarizes the variables used in this study.

**Model Developments**

Most previous studies such as Gebreyesus (2022); Kewo (2017); Sutaryo & Sinaga (2018) assessing the effectiveness and quality of the government based on the implementation of programs that have been carried out and producing output in the form of data used in analysis. However, research analyzing how internal government supervision is designed before program implementation is conducted is not very limited. Therefore, we analyze the effectiveness of the government through internal government supervision as our focus variable.



**Figure 2.** Model and Hypothesis Development

The government plays an important role in planning and implementing development goals, such as health alleviation programs (Naik et al., 2023; Xu et al., 2022). However, it remains unclear how the government controls the achievement of its developmental goals. Therefore, we hypothesized that an internal government control system would affect the development goals of health outcomes. A study conducted by Bin-Feng et al. (2023) states that

there is a relationship between government internal control, poverty alleviation, and education quality. Therefore, we also include the influence of internal controls on poverty and education quality in our analysis.

The budget is an important aspect for the smooth running of government programs. Without a budget, it is impossible for government programs to be implemented (Premchand, 2001). However, questions regarding the effectiveness of budgets are still rarely addressed in empirical analysis. Therefore, we included budget efficiency in our analysis. To determine how internal government supervision influences national development goals, we used a path analysis model to answer this research question. Figure 2 shows the path analysis model used in this study.

### Descriptive Statistics

We sampled 34 of 38 provinces in Indonesia in this study. In the SPIP, MRI, IEPK, and APIP data, we reconstructed samples from 542 city and district governments to a composite score at the provincial level, and the average government condition was at levels 2 to 3, which means that most local governments are still in the development stage, both in planning, monitoring, and overcoming corruption. Similarly, with budget efficiency, we converted 542 city and district governments using a composite index into 34 provinces through data envelope analysis and found that in Indonesia, the average was 0.77, which means that the condition of government budget use in cities, districts, and provinces in Indonesia tended to be low. Towards efficiency.

**Table 2.** Descriptive Statistics

Variables	Construct Measurement	Mean	Max	Min	SD	N
SPIP	SPIP (Government internal control systems)	2.941	3.322	1.880	0.270	34
MRI	MRI (Index risk management)	2.727	3.331	1.623	0.302	34
IEPK	IEPK (Corruption Prevention Effectiveness Index)	2.429	2.994	1.654	0.325	34
APIP	APIP (Government Internal Oversight Apparatus)	2.655	3.000	2.164	0.250	34
Budget Efficiency	Budget Efficiency	0.770	1.000	0.572	0.115	34
Education	Literacy rate	99.627	99.970	92.040	1.348	34
	Elementary net enrollment	97.265	99.430	81.660	3.183	34
	Junior high school net enrollment	78.738	86.880	59.140	6.176	34
	Senior high school net enrollment	63.109	74.730	47.630	5.955	34
	Higher education net enrollment	126.132	174.460	93.750	17.509	34
	Average years of schooling	8.839	11.310	7.020	0.923	34
	Human development index	71.968	81.650	61.390	3.901	34
Poverty	Percentage of poor people	10.299	26.800	4.610	5.286	34
	Poverty depth index	1.799	7.280	0.430	1.417	34
	Open unemployment rate	4.966	8.310	2.340	1.600	34

Variables	Construct Measurement	Mean	Max	Min	SD	N
Health	Percentage of Health Complaints	27.616	43.620	11.680	7.097	34
	Percentage of women whose births were attended by health workers	94.526	99.780	75.860	6.083	34
	Percentage of population who self-medicate	83.528	92.530	74.460	4.481	34
	Level of stunting	23.291	35.300	8.000	6.472	34

Source: Data Processed (2024)

### Path Analysis

The results of the hypothesis testing are presented in Table 4 and Figure 3. The analysis results show that the corruption prevention effectiveness index significantly and positively affects budget efficiency ( $\beta = 0.378$ ,  $p$ -value = 0.100). This shows that when the corruption prevention effectiveness index strengthens the government's internal control by one point, it increases the budget efficiency by 37.8% from the current level. These findings support those of Arens et al. (2017) and Johnstone et al. (2014), who state that the government's internal control, especially in the prevention of acts of corruption, can increase budget efficiency, organizational effectiveness, and reliable financial reporting, as well as the desire for compliance with applicable laws.

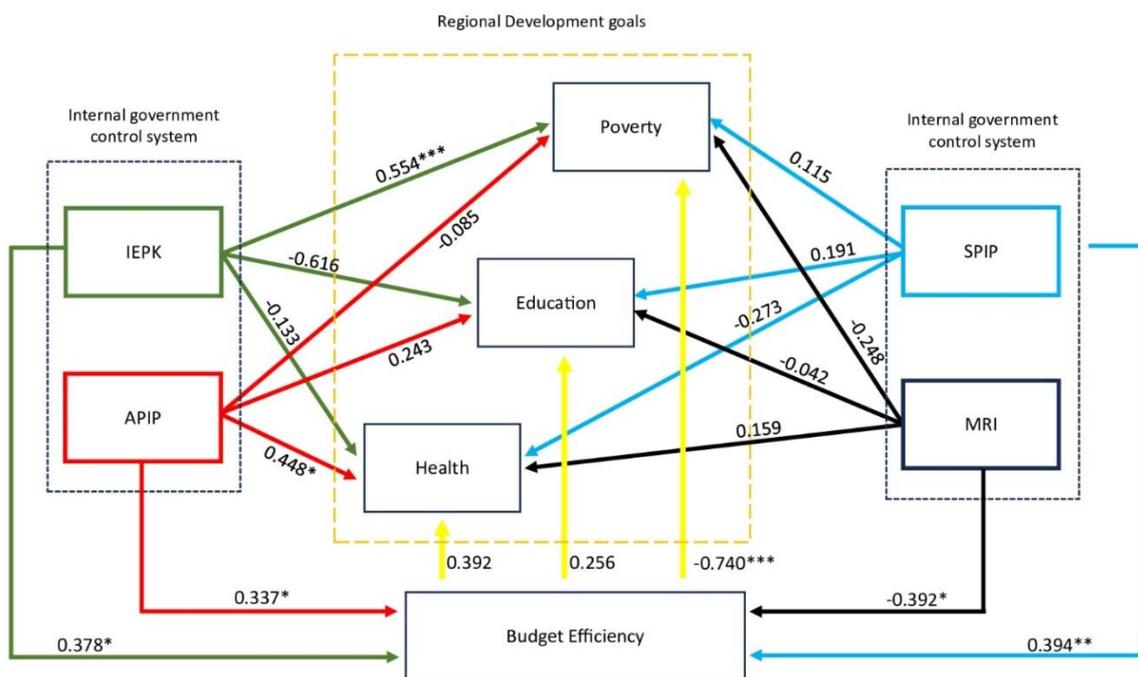
**Table 3.** Path Analysis Results

Hypothesis	Structural Path to	$\beta$	$t$ -value	$p$ -values	Results
H1	IEPK → Poverty	0.554	2.587	0.120	Rejected
H2	IEPK → Education	-0.616	1.395	0.164	Rejected
H3	IEPK → Health	-0.133	0.291	0.771	Rejected
H4	IEPK → Budget Efficiency	0.378*	1.483	0.100	Accepted
H5	APIP → Poverty	-0.085	0.567	0.571	Rejected
H6	APIP → Education	0.243	0.942	0.347	Rejected
H7	APIP → Health	0.448*	1.824	0.069	Accepted
H8	APIP → Budget Efficiency	0.337*	1.816	0.070	Accepted
H9	SPIP → Poverty	0.115	0.804	0.422	Rejected
H10	SPIP → Education	0.191	0.76	0.447	Rejected
H11	SPIP → Health	-0.273	1.019	0.309	Rejected
H12	SPIP → Budget Efficiency	0.394**	2.147	0.032	Accepted
H13	MRI → Poverty	-0.248	1.047	0.296	Rejected
H14	MRI → Education	-0.042	0.125	0.901	Rejected
H15	MRI → Health	0.159	0.494	0.622	Rejected
H16	MRI → Budget Efficiency	-0.392*	1.482	0.094	Accepted

Hypothesis	Structural Path to	$\beta$	<i>t</i> -value	<i>p</i> -values	Results
H17	Budget Efficiency → Health	0.392	1.462	0.144	Rejected
H18	Budget Efficiency → Education	0.256	0.936	0.350	Rejected
H19	Budget Efficiency → Poverty	-0.740***	4.892	0.000	Accepted

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

The capability of the government's internal oversight apparatus to monitor and assess internal controls influences the level of health ( $\beta = 0.448$ ,  $p$ -value = 0.069). This shows that when the level of the government's internal oversight apparatus increases, the level of health in regional conditions also increases. The government's internal oversight apparatus also influences budget efficiency ( $\beta = 0.337$ ,  $p$ -value = 0.070). This shows that when the performance of the government's internal oversight apparatus improves, it will encourage more efficient use of regional budgets. This finding is in line with those of studies conducted by Bin-Feng et al. (2023) and Xu et al. (2022), which state that government agencies, such as planners and supervisors, play an important role in development; thus, when their performance is better, they can provide development benefits, especially poverty, education, and health.



**Figure 3.** Path Analysis Results

Internal government control systems also influenced budget efficiency ( $\beta = 0.394$ ,  $p$ -value = 0.032). This indicates that when the government's internal control system score increased, the budget efficiency level was 39.4% of the current level. These findings support the findings of Bandiyono (2020); Choiriah (2019); Kewo (2017), and Zakirova et al. (2021),

which state that government internal control is a form of government system that is able to support regional development, especially in the realm of administration and budget planning. The risk management index significantly negatively affects budget efficiency ( $\beta = -0.392$ ,  $p\text{-value} = 0.094$ ). This shows that when the government attempts to minimize risk, it makes the budget more inefficient. Reducing risk management to a lower level can lead to wastage of resources and, worse, can damage the system (Z. Liu et al., 2023). In fact, in some cases, serious problems, especially opportunistic behavior, are often faced when the government or an organization tries to improve risk management by increasing resources. (Zhang & Qian, 2017).

Budget efficiency strongly influences poverty level reduction in a region ( $\beta = -0.740$ ,  $p\text{-value} = 0.000$ ). This indicates that a region with higher budget efficiency can reduce poverty rates by 74% from the current level. These findings support those of Kewo (2017) and Zakirova et al. (2021), who stated that budget efficiency can support development goals, especially through budget efficiency. From the overall results, it can be said that the government's internal control system influences budget efficiency within the government. Ultimately, budget efficiency can influence regional development goals, particularly the poverty level in a region.

## **Conclusion**

This study provides empirical evidence of how Indonesia's new integrated government internal controls can support regional development goals. To explain this relationship, we used a path analysis, which connects the government's internal control system, budget efficiency, and regional development goals, particularly health, education, and poverty. Surprisingly, our analysis shows that the instruments for government internal control systems, the corruption prevention effectiveness index, and the government's internal oversight apparatus positively influence budget efficiency. This shows that improving the quality of internal controls in planning, supported by the capability of a competent state apparatus, can make budget allocation in the government more efficient. Strengthening government strategies through index risk management negatively affects budget efficiency. This shows that when the government attempts to reduce risks to a very low level, it will require greater resources, and the budget will automatically become very inefficient. In conclusion, we found that government internal controls can influence the government through budget efficiency, and simultaneously, budget efficiency itself influences development goals. Based on these findings, it is hoped that the government will be able to implement better-quality internal supervision to support national development goals at the regional level.

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