



Internal Audit and Governance Practices: Their Impact on the Performance of Water Services Regional-Owned Enterprises (BUMDs) in Indonesia

Hana Aulia Diany¹, Hidayatullah^{*2}

^{1,2}Accounting Department, Universitas Bina Nusantara Jakarta, Indonesia

Corresponding Author e-mail: hidayat@binus.ac.id

Article History:

Received: 25-07-2025

Revised: 27-07-2025

Accepted: 28-07-2025

Keywords: Corporate Governance; Internal Audit Units; Performance Evaluation; Panel Data Analysis

Abstract: Water Services Regional-Owned Enterprises (BUMD Jasa Air) are entities owned by local governments that function to provide clean water to communities within their service areas. The objective of this study is to examine the effectiveness of corporate governance implementation, the number of internal audit unit personnel, and the number of company employees on the performance evaluation results of these enterprises. This research adopts a quantitative approach using secondary data. The population consists of 394 water utility BUMDs during the period from 2021 to 2023, while the sample was determined using purposive sampling, resulting in 22 BUMDs that met the research criteria. The analytical methods used include descriptive statistical analysis, classical assumption testing, and panel data regression model selection tests to test the hypotheses. The results indicate that the three independent variables collectively have a significant effect on the dependent variable. Corporate governance implementation, the number of internal audit personnel, and the number of employees all show a positive relationship with the performance evaluation results of water utility BUMDs. Specifically, corporate governance has a positive and significant effect; the number of internal audit personnel shows no significant effect; and the number of employees has a positive but not statistically significant impact on performance evaluation.

Introduction

The governance structure in Indonesia has undergone a significant transformation following the enactment of Law No. 22 of 1999, which marked a shift from a centralized system to one based on decentralization (Simanjuntak, 2015). A key component of this reform was fiscal decentralization, defined as the delegation of budgetary authority from the central government to subnational governments, encompassing financial management responsibilities and the delivery of public services (Vo, 2010).

In response to fiscal decentralization, local governments have increasingly engaged in regional development efforts, including the establishment of Regional-Owned Enterprises (Badan Usaha Milik Daerah or BUMD). These entities are businesses whose capital is wholly or partially owned by regional governments (Widiyastuti, 2019). One of the most critical forms of BUMD is the Water Services BUMD, which operates at the municipal or provincial level to provide clean water services. These enterprises are essential in meeting community needs, supporting economic activities, and contributing to local development (Angraini & Suhanda, 2023).

The corporatization of public services through the creation of BUMDs is expected to foster a competitive business environment and improve organizational performance by encouraging transparency, accountability, and control. This transformation necessitates the adoption of sound management practices, particularly the implementation of good corporate governance principles and effective internal audit systems (Angraini & Suhanda, 2023).

Corporate governance refers to the mechanisms and processes by which companies are directed and controlled to ensure a balance of interests among stakeholders. Agency theory provides the conceptual foundation for this by illustrating the relationship between principals (owners) and agents (managers), whereby authority is delegated to agents to act on behalf of the principals (Apriliani & Dewayanto, 2019). The

principles of good governance, transparency, accountability, responsibility, independence, and fairness are essential for optimizing resource management. Empirical evidence suggests that water utility companies adhering to sound governance practices demonstrate higher customer satisfaction and improved financial stability (Angraini & Suhandha, 2023).

An equally important determinant of performance is the presence of an Internal Audit Unit. Such units play a pivotal role in ensuring compliance with governance standards and evaluating the effectiveness of internal control mechanisms. Prior studies have established a positive correlation between internal auditing and the overall quality of governance (Karagiorgos et al., 2009). However, a large proportion of BUMDs still lack robust internal audit structures, posing significant challenges to accountability and organizational efficiency (Tica Darsa et al., 2015). Furthermore, human capital plays a vital role in driving organizational performance. Employees are not merely task executors; they are key contributors to value creation and innovation. The reciprocal relationship between employees and the organization forms a strategic foundation for organizational success (Coyle-Shapiro & Shore, 2007; Eldor & Vigoda-Gadot, 2017).

Given these considerations, there is a need to empirically investigate the extent to which the presence of Internal Audit Units, employee size, and the application of good corporate governance contribute to performance outcomes in Water Service Regional-Owned Enterprise. This study aims to investigate the impact of these three variables on the performance evaluation scores of BUMDs, as determined by relevant government authorities. The findings are expected to provide actionable insights for policymakers and stakeholders in enhancing the governance and operational effectiveness of Water Services BUMDs in Indonesia, while also offering a theoretical contribution to the literature on public enterprise management and corporate governance.

Definition of Regional-Owned Enterprises (BUMD)

According to Law No. 23 of 2014 on Regional Government, Regional-Owned Enterprises (BUMD) are business entities whose capital is wholly or predominantly owned by regional governments. Article 331 of the law states that the establishment of BUMDs aims to contribute to the overall economic development of the region, provide public benefits through the supply of quality goods and services to meet public needs, and generate profits. One strategic form of BUMD for the public is the Water Services BUMD, which is tasked with delivering clean water to communities within its operational area. A concrete example of a Water Services BUMD is the Regional Water Supply Company (Perusahaan Daerah Air Minum or PDAM), which is not only profit-oriented but also performs a social function in improving the quality of life for local communities.

Company Performance and Internal Control

Company performance refers to the outcomes of all business activities and serves as a benchmark for assessing organizational success (Apriliani & Dewayanto, 2019). It reflects a company's ability to generate profits, manage assets efficiently, and ensure long-term sustainability (Widjaya & Sisdianto, 2024). Performance assessment can be conducted through both financial and non-financial approaches. Internal control is a process designed to detect deviations from corporate plans or objectives (Suawah, 2021). An effective internal control system helps reduce irregularities, minimize fraud, and enhance transparency in organizational management.

Agency Theory

Agency theory defines the agency relationship as a contractual arrangement in which one or more individuals (principals) engage another party (agent) to perform a task on their behalf (Wirapratama & Murtanto, 2023). In this context, the government acts as the principal and BUMDs as agents. The relationship becomes problematic when the interests of the

principal and agent are not aligned. Therefore, oversight mechanisms such as internal control systems are necessary to enhance transparency and accountability, thereby strengthening the principal's trust in the agent (Firmansyah, 2024).

Corporate Governance Theory

Corporate governance refers to the system of control and regulation within a company, reflected in the mechanisms that govern relationships among internal stakeholders (Sari, 2021). Good governance practices are crucial for maintaining public trust and ensuring consistent organizational performance. In practice, corporate governance is based on five key principles: fairness, transparency, accountability, responsibility, and independence (Dwiridotjahjono, 2010). The implementation of these principles is crucial to establishing robust governance systems, improving operational efficiency, and ensuring long-term organizational stability.

Research Methods

This study uses quantitative methods by taking data from BPKP reports. Data is collected and processed.

Research Framework

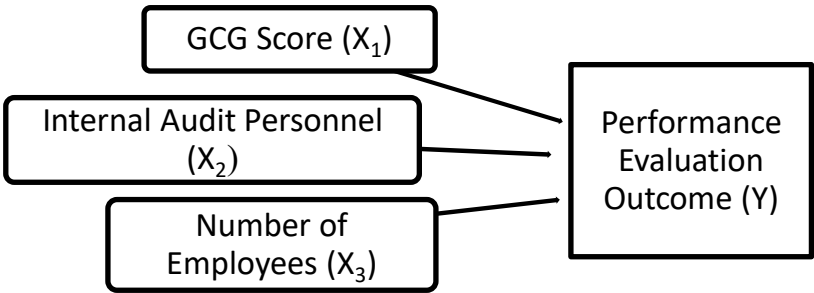


Figure. 1. Research framework

Hypothesis Development

Good corporate governance plays a crucial role in achieving optimal organizational performance outcomes. According to agency theory, delegating authority to agents involves entrusting them with full responsibility for managing the organization effectively (Apriliani & Dewayanto, 2019). In this context, corporate governance serves as a control mechanism designed to minimize conflicts of interest and promote the efficient and transparent achievement of organizational objectives.

Empirical evidence suggests that corporate governance can impact company performance, as measured by governance bodies such as the board of directors, commissioners, and committees responsible for monitoring organizational outcomes (Tica Darsa et al., 2015). Additionally, governance is reflected in operational practices that embody principles of transparency, accountability, and integrity (Sari, 2021).

H₁: Corporate governance has a significant effect on organizational performance evaluation.

Internal audit, or internal oversight, is another crucial component of an organization's control system. Internal audit is defined as an independent function established within an organization to review and evaluate its activities as a service to that organization (Karagiorgos et al., 2009). Beyond the mere existence of an Internal Audit Unit, the number of its personnel also impacts the effectiveness of performance evaluation. Personnel size is closely related to workload analysis, where workload is defined as the cost or value associated with achieving a set of operational objectives (Nabila & Syarvina, 2022).

A well-functioning internal audit function helps ensure that regulatory requirements are effectively integrated into operational activities and communicated throughout the organization. Prior studies have found that Internal Audit Units support the adoption of good corporate governance and that a positive relationship exists between

governance attributes and the presence of internal audit mechanisms (Karagiorgos et al., 2009).

H2: The number of Internal Audit personnel has a significant effect on organizational performance evaluation.

Human resources are a strategic factor in driving organizational success. The relationship between employees and the organization can be mutually beneficial (Coyle-Shapiro & Shore, 2007). Previous research indicates that employee engagement, characterized by high activation and reciprocal connection with the organization, serves as a strong foundation for enhancing organizational productivity (Eldor & Vigoda-Gadot, 2017). Therefore, an appropriately sized and effectively managed workforce is expected to make a significant contribution to organizational performance.

H3: The number of employees has a significant effect on organizational performance evaluation.

Population and Samples

This study employs a quantitative research approach, utilizing secondary data provided by the Financial and Development Supervisory Agency (Badan Pengawasan Keuangan dan Pembangunan, or BPKP). Quantitative research involves the use of numerical data to conduct statistical analysis (Candra Susanto et al., 2024), employing a causal-comparative approach, a research method designed to examine cause-and-effect relationships between the tested variables.

The sampling technique employed in this study is non-probability sampling, where samples are selected based on specific elements or criteria (Etikan, 2016). One type of non-probability sampling is purposive sampling, a method used to identify and select objects or groups of objects that are particularly relevant to the research focus (Palinkas et al., 2015). The sample selection criteria are as follows:

Table 1. Sample selection characteristics

No.	Description	Total
1	Regional-Owned Enterprises (BUMDs) that have prepared and reported performance evaluation results	394
2	Regional-Owned Enterprises (BUMDs) that have conducted a good corporate governance (GCG) assessment	22
3	Water Service Regional-Owned Enterprises (BUMDs) that formally have an Internal Audit Unit	112
Total Number of Samples		22
Research Period (2021 to 2023)		3
Total Data Observation during Research Period		66

The data collected in this study consist of both time-series and cross-sectional data, commonly referred to as panel data (Ghozi & Hermansyah, 2018). The analytical methods employed include descriptive statistical analysis, classical assumption testing, and panel data regression analysis to test the hypotheses. All statistical analyses were conducted using EViews 12.0 software.

Operationalization of Variables

BUMD Performance. The performance of Regional-Owned Enterprises (BUMD) serves as the dependent variable. It is measured based on performance evaluation scores assigned by the Ministry of Public Works and Housing (PUPR) to regional water companies (PDAM) across Indonesia. The evaluation encompasses financial, operational, service, and human resource aspects, all of which comprehensively reflect the company's performance. The performance score is measured on an interval scale ranging from 0.00 to 5.00. Company performance is a key indicator for management and stakeholders to assess the success of attaining

organizational goals (Angraini & Suhandha, 2023).

Corporate Governance Score. The corporate governance implementation score is an independent variable representing the extent to which Good Corporate Governance (GCG) principles are applied. It is measured based on assessments conducted by the Financial and Development Supervisory Agency (BPKP) regarding the implementation of governance principles such as transparency, accountability, and responsibility within BUMDs. The score is presented on an interval scale ranging from 0.00 to 100.00. The implementation of good corporate governance has been shown to have a positive impact on company performance and strengthen stakeholder trust (Angraini & Suhandha, 2023; Tica Darsa et al., 2015).

Number of Internal Audit Personnel. The number of personnel in the Internal Audit Unit (Satuan Pengawas Internal or SPI) is an independent variable that reflects the internal oversight capacity of each PDAM. These units are responsible for ensuring compliance with policies and corporate governance principles. The actual number of audit personnel measures this variable. Although theoretically SPI plays a crucial role in internal governance control, its effectiveness is primarily determined by the competency and empowerment of its members (Karagiorgos et al., 2009).

Number of Employees. The number of employees is an independent variable that reflects the human resource capacity of each PDAM in carrying out daily operational activities and delivering services to the public. The actual number of active employees measures this variable. However, many studies suggest that a larger workforce does not necessarily lead to better performance if not supported by effective human resource management systems and employee competency development (Nabila & Syarvina, 2022). Furthermore, the relationship between the company and its employees is theoretically framed through the employee–organization relationship approach, which emphasizes reciprocity, engagement, and

organizational support as key factors in enhancing employee productivity and loyalty (Coyle-Shapiro & Shore, 2007).

Result and Discussion

Results

Descriptive Statistics. Based on Table 2, descriptive statistical analysis was conducted on 66 observations derived from 22 Water Service Regional-Owned Enterprises (BUMDs) over three years. These companies were selected using purposive sampling, ensuring alignment with the research criteria and objectives (Asrulla et al., 2023). The results show that all variables in this study exhibit mean values greater than their respective standard deviations, indicating a relatively homogeneous dataset. The performance evaluation score ranged from a minimum of 2.86 to a maximum of 4.45. The average score across all observations was 3.74, with a standard deviation of 0.377, suggesting that most companies demonstrated moderate to high performance during the observed period. The corporate governance score (GCG) ranged from 0.00 to 92.25, with a mean value of 40.933 and a relatively high standard deviation of 36.982. This indicates considerable variation in the extent of GCG implementation across the sampled companies. The number of Internal Audit Unit (SPI) personnel ranged from 0 to 27 employees. On average, each company had approximately seven internal audit personnel, with a standard deviation of 4.680. This suggests differences in internal oversight capacity among the enterprises. The number of employees showed the widest dispersion, ranging from 36 to 1,909 employees. The average number of employees per company was 461, with a high standard deviation of 423.613, reflecting significant variations in organizational scale and operational capacity among the sample.

Table 2. Descriptive statistics

	Performance Evaluation Score	GCG Score	Internal Audit Personnel	Number of Employees
Mean	3.747273	40.93300	7.393939	461.7424
Median	3.715000	64.25800	6.500000	305.5000
Maximum	4.450000	92.25000	27.00000	1909.000
Minimum	2.860000	0.000000	0.000000	36.00000
Std. Dev.	0.376823	36.98258	4.680167	423.6133
Observations	66	66	66	66

Source: Processed using EViews 12.0

Classical assumption test. Normality testing can be conducted using graphical analysis, the significance of skewness and kurtosis, the Jarque-Bera (JB) test, and the non-parametric Kolmogorov-Smirnov test (Sholihah et al., 2023).

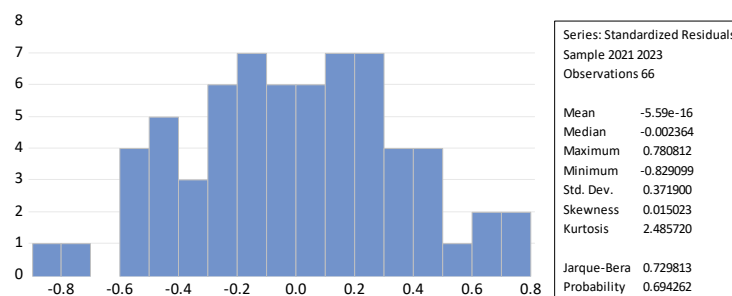


Fig. 2. Normality Test Result.

The results of the normality test show a probability value of 0.694262, which is greater than the significance level of 0.05 ($0.694262 > 0.05$). Therefore, it can be concluded that the data used in this study are typically distributed.

Multicollinearity Test can be performed using several approaches, including the R^2 value and t-statistics, pairwise correlation, auxiliary regression, partial correlation, eigenvalues and condition index, as well as tolerance and Variance Inflation Factor (VIF) values (Sholihah et al., 2023).

Table 3. Multicollinearity Test Result

	<i>GCG Score</i>	<i>Internal Audit Personnel</i>	<i>Number of Employees</i>
<i>GCG Score</i>	1.000000	0.110351	0.039845
<i>Internal Audit Personnel</i>	0.110351	1.000000	0.819000
<i>Number of Employees</i>	0.039845	0.819000	1.000000

Source: Processed using EViews 12.0

The correlation between the corporate governance score (GCG) and the number of employees is 0.039845. The correlation between the GCG score and the number of internal audit personnel is 0.110351. Based on the R^2 approach, multicollinearity is indicated when the R^2 value exceeds 0.80. Therefore, it can be concluded that no multicollinearity is present in these two correlations. However, the correlation between the number of employees and the number of internal audit personnel is 0.819000, indicating the presence of multicollinearity. In other words, a significant correlational relationship exists between these two independent variables.

Panel Data Regression Model Selection

Chow Test. The Chow test is conducted to compare the Common Effect Model (CEM) with the Fixed Effect Model (FEM). The decision rule is that if the p-value < α (significance level), the Fixed Effect Model (FEM) is preferred; otherwise, the Common Effect Model (CEM) is used (Hidayat et al., 2018).

Table 4. Chow Test Result

<i>Effect Test</i>	<i>Statistic</i>	<i>df.</i>	<i>Prob.</i>
<i>Cross-section F</i>	15.426638	(21,41)	0.0000
<i>Cross-section Chi-square</i>	144.290127	21	0.0000

Source: Processed using EViews 12.0

The Cross-Sectional Chi-Square statistic is 144.290127 with a p-value of 0.0000. Since the probability value is less than 0.05 ($0.0000 < 0.05$), the

Fixed Effect Model (FEM) is the appropriate model based on the Chow test results.

Hausman Test. The Hausman test compares the Fixed Effect Model (FEM) with the Random Effect Model (REM). The decision rule is that if the $p\text{-value} < \alpha$ (significance level), the Fixed Effect Model (FEM) is used; otherwise, the Random Effect Model (REM) is preferred (Hidayat et al., 2018).

Table 5. Hausman Test Result

<i>Test Summary</i>	<i>Chi-Sq. Statistic</i>	<i>Chi-Sq. d.f.</i>	<i>Prob.</i>
<i>Cross-section random</i>	0.768444	3	0.857

Source: Processed using EViews 12.0

The Chi-Square statistic is 0.768444 with a probability of 0.857. Since the likelihood is greater than 0.05 ($0.857 > 0.05$), the Random Effect Model (REM) is preferred based on the Hausman test.

Lagrange Multiplier Test. The Lagrange Multiplier (LM) test is conducted when the Chow and Hausman tests produce conflicting results. It is also used to determine whether the Random Effect Model (REM) is superior to the Common Effect Model (CEM) (Hidayat et al., 2018). Since the Chow test favoured FEM and the Hausman test favoured REM, the LM test was employed.

Table 6. Lagrange Multiplier Test Result

	<i>Test Hypothesis</i>		
	<i>Cross-section</i>	<i>Time</i>	<i>Both</i>
<i>Breusch-Pagan</i>	45.03396 (0.0000)	1.193143 (0.2747)	46.22710 (0.0000)

Source: Processed using EViews 12.0

The Cross-Section Breusch-Pagan probability is 0.0000, which is less

than 0.05. Thus, the Random Effect Model (REM) is preferred for panel data regression based on the Lagrange Multiplier test (Basuki, 2021).

Panel Data Regression Equation. The regression equation derived from the model is as follows:

$$\text{Performan Evaluation Score} = 3,70738007558 + 0,00216715434328 * \text{GCG Score} + 2,61373094742e-05 * \text{Employees} - 0,00823433471417 * \text{Internal Audit Personnel} + [\text{CX}=\text{R}] \quad (1)$$

The constant value of 3.70738007558 indicates that if the independent variables increase by one unit on average, the dependent variable is expected to increase by approximately 3.70738007558 units.

Individual Parameter Significance Test (t-Test)

The individual significance test concludes that if the significance value is greater than 0.05, the regression coefficient is not significant, meaning the respective independent variable does not significantly affect the dependent variable, and vice versa (Mahdiana & Amin, 2020).

Tabel 7. t-Test Result

<i>Variabel</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>C</i>	3.707380	0.129185	28.69821	0.0000
<i>GCG Score</i>	0.002167	0.000572	3.791317	0.0003
<i>Internal Audit Personnel</i>	-0.008234	0.010749	-0.766051	0.8898
<i>Number of Employees</i>	2.61E-05	0.000188	0.139172	0.4466

Source: Processed using EViews 12.0

The GCG score variable has a t-statistic of 3.791317 and a probability of 0.0003 (< 0.05), indicating a significant effect on the dependent variable. The number of internal audit personnel variable has a t-statistic of -0.766051 and a probability of 0.8898 (> 0.05), indicating no significant effect. The number of employees variable has a t-statistic of 0.139172 and a

probability of 0.4466 (> 0.05), also indicating no significant impact on the dependent variable.

Simultaneous Significance Test (F-Test)

The F-test concludes that if the significance value is greater than 0.05, the F-statistic is not significant, meaning the independent variables do not simultaneously affect the dependent variable, and vice versa (Mahdiana & Amin, 2020).

Table 8. F-Test Result and Coefficient of Determination (R^2)

<i>Weighted Statistics</i>			
<i>R-squared</i>	0.195678	Mean dependent var	0.897386
<i>Adjusted R-squared</i>	0.156759	S.D. dependent var	0.167511
<i>S.E. of regression</i>	0.153822	Sum of Squares resid	1.466996
<i>F-statistic</i>	5.027851	Durbin-Watson stat	1.370124
<i>Prob (F-statistic)</i>	0.003492		

Source: Processed using EViews 12.0

The F-statistic value of 5.027851 with a probability of 0.003492 (< 0.05) indicates that the independent variables (GCG score, number of internal audit personnel, and number of employees) collectively have a significant effect on the dependent variable (performance evaluation). The Adjusted R-Squared value of 0.156759, or 15.6759%, indicates that the three independent variables collectively explain approximately 15.68% of the variation in the company's performance evaluation.

Discussion

Based on the results of the regression analysis, it can be concluded that the three independent variables—corporate governance score (GCG), the number of Internal Audit Unit (SPI) personnel, and the number of employees—have a positive effect on the performance evaluation of Water Services Regional-Owned Enterprises (BUMD). Among these variables,

only the corporate governance score was found to have a statistically significant influence on performance outcomes.

This finding supports the first hypothesis, which posits that corporate governance has a positive and significant effect on company performance. It suggests that the implementation of sound governance principles—such as transparency, accountability, responsibility, independence, and fairness—can enhance corporate effectiveness and accountability. These principles support better decision-making processes, improving operational efficiency and effectiveness in achieving organizational objectives (Dwiridotjahjono, 2010).

Statistically, the t-test result shows that the GCG score variable has a t-statistic of 3.791 and a probability value of 0.0003 (< 0.05), indicating a significant impact on performance evaluation. This finding is consistent with agency theory, which posits that good governance enhances organizational performance through improved oversight, transparency, and accountability mechanisms (Firmansyah, 2024). Effective governance contributes to organizational success in achieving performance targets, increasing trust from both customers and government entities, and supporting the achievement of service delivery objectives (Widiyastuti, 2019).

However, the number of internal audit personnel did not have a statistically significant effect on company performance. This is evident from the probability value of 0.8898, which exceeds the significance threshold of 0.05. This result contradicts the second hypothesis and provides new insights: that the effectiveness of internal oversight is not solely determined by the number of personnel but rather by their competence and active role in carrying out supervisory functions. While the number of internal audit personnel is theoretically essential for ensuring compliance with governance principles and operational effectiveness, the number of personnel alone does not necessarily reflect the quality or effectiveness of the internal audit function. This may be due

to the lack of corresponding improvements in quality, competence, or empowerment of internal audit personnel. Thus, quantity alone does not guarantee performance effectiveness—competence and work discipline are also essential for improving internal control and organizational outcomes (Suartini & Bagia, 2022).

Meanwhile, the number of employees showed a positive effect on company performance, in line with the third hypothesis. However, this effect was not statistically significant. The variable's probability value was 0.4466, which exceeds the 0.05 threshold. This finding suggests that operational success is not solely dependent on workforce size, but also on factors such as employee competence, productivity, and effective human resource management. This supports the view that the number of employees provides only a limited contribution to performance improvement (Eldor & Vigoda-Gadot, 2017). The results suggest that quantity alone is insufficient for enhancing employee performance and company outcomes—other factors, such as workforce quality, employee development, and work management systems, are also required (Pramesrianto et al., 2019).

Simultaneously, the results of the F-test show that the three independent variables collectively have a significant effect on the dependent variable. The F-statistic value of 5.02785, with a probability of 0.003 (< 0.05), indicates that the regression model, as a whole, significantly explains the relationship between GCG score, the number of internal audit personnel, and the number of employees in the company performance evaluation. However, the Adjusted R-squared value is only 0.1567 or 15.67%, indicating that these three variables explain only a small portion of the variation in the performance of Water Services BUMDs. The remaining 84.33% may be influenced by other factors outside the scope of this study, such as leadership, organizational structure, technology, or organizational culture, which were not examined in this research.

Conclusion and Recommendation

The findings of this study indicate that the implementation of corporate governance, the number of Internal Audit Unit (SPI) personnel, and the number of employees all have a positive effect on the performance evaluation of Water Services Regional-Owned Enterprises (BUMD). Corporate governance was found to have a positive and statistically significant effect, suggesting that the application of governance principles enhances both the effectiveness and accountability of the organization. In contrast, the number of SPI personnel had no significant effect on performance evaluation. This finding provides insight that quantity alone is insufficient; the competence and active roles of individual SPI members must accompany it. The number of employees showed a positive but statistically insignificant effect on performance. This suggests that employee quantity alone is insufficient and must be supplemented by other factors, such as employee development and effective workforce management.

This study has several limitations that should be acknowledged. First, the absence of corporate governance assessment data for 2021 and the relatively small sample size limited the ability to conduct more complex statistical analyses, resulting in less statistically significant results. Additionally, the variables used in this study were limited in scope and may not fully capture the range of factors influencing the performance evaluation of BUMDs. The study did not assess the qualitative aspects of internal audit personnel and employees, focusing solely on quantity rather than effectiveness or competency.

For future research, it is recommended that additional variables, such as firm size, revenue, operating profit, or other financial ratios, be included to enhance the model's explanatory power and provide a more comprehensive understanding of the factors affecting organizational performance.

Acknowledge

The authors would like to acknowledge that the data used in this research can be accessed via the following link: <https://doi.org/10.5281/zenodo.15711252>. Hana Aulia Diany was responsible for conceptualizing the study, developing the quantitative methodology, analyzing secondary data, conducting formal statistical analysis using software, creating data visualizations, interpreting the results, and writing and editing the manuscript. Hidayatullah provided valuable supervision, conducted data verification and model validation, reviewed relevant literature, and contributed critical input to enhance the manuscript's quality.

References

- Angraini, A. S., & Suhandi, S. (2023). Corporate Governance of the Regional Water Service Company (PDAM) of Lima Puluh Kota Regency. *Owner*, 7(2), 1720–1731. <https://doi.org/10.33395/owner.v7i2.1305>
- Apriliyani, M. T., & Dewayanto, T. (2019). The Influence of Corporate Governance, Firm Size, and Firm Age on Company Performance. *7(1)*, 1–10.
- Asrulla, A., Risnita, R., Jailani, M. S., & Jeka, F. (2023). Population and Sampling (Quantitative), and Key Informant Selection (Qualitative) in a Practical Approach. *7(3)*.
- Basuki, A. T. (2021). *Panel Data Analysis in Economic and Business Research (Including the Use of EViews)* (1st ed., Vol. 1). Raja Grafindo.
- Candra Susanto, P., Ulfah Arini, D., Yuntina, L., Panatap Soehaditama, J., & Nuraeni, N. (2024). The Concept of Quantitative Research: Population, Sample, and Data Analysis (A Literature Review). *Jurnal Ilmu Multidisplin*, 3(1), 1–12. <https://doi.org/10.38035/jim.v3i1.504>
- Coyle-Shapiro, J. A.-M., & Shore, L. M. (2007). The employee–organization relationship: Where do we go from here? *Human Resource*

- Management Review, 17(2), 166–179.
<https://doi.org/10.1016/j.hrmr.2007.03.008>
- Dwiridotjahjono, J. (2010). Implementation of Good Corporate Governance: Benefits, Challenges, and Opportunities for Public Companies in Indonesia. 5(2), 101–112.
- Eldor, L., & Vigoda-Gadot, E. (2017). The nature of employee engagement: Rethinking the employee–organization relationship. The International Journal of Human Resource Management, 28(3), 526–552. <https://doi.org/10.1080/09585192.2016.1180312>
- Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Firmansyah, A. (2024). Revealing Weakness in Public Service Agencies: The Impact of Internal Control on Performance and Public Accountability. Jurnal Manajemen Keuangan Publik, 8(2), 87–103. <https://doi.org/10.31092/jmkp.v8i2.3068>
- Ghozi, S., & Hermansyah, H. (2018). Panel Data Regression Analysis on the Profitability of Regional Development Banks (BPD) in Indonesia. Jurnal Matematika, 8(1), 1. <https://doi.org/10.24843/JMAT.2018.v08.i01.p93>
- Hidayat, M. J., Hadi, A. F., & Anggraeni, D. (2018). Panel Data Regression Analysis on the Human Development Index (HDI) in East Java, 2006-2015. Majalah Ilmiah Matematika dan Statistika, 18(2), 69. <https://doi.org/10.19184/mims.v18i2.17250>
- Karagiorgos, T., Drogas, G., Gotzamanis, E., & Tampakoudis, I. (2009). Internal Auditing as an Effective Tool for Corporate Governance.
- Mahdiana, M. Q., & Amin, M. N. (2020). The Influence of Profitability, Leverage, Firm Size, and Sales Growth on Tax Avoidance. Jurnal Akuntansi Trisakti, 7(1), 127–138. <https://doi.org/10.25105/jat.v7i1.6289>
- Nabila, V. S., & Syarvina, W. (2022). The Effect of Workload on Employee Performance at PT Perkebunan Nusantara IV Medan. 6(2). <https://doi.org/10.31316/jk.v6i2.3133>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., &

- Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Pramesrianto, A., Amin, S., & Ratnawati, Rts. (2019). The Influence of Human Resource Development and Work Ability on Employee Performance at PT Jambi Media Grafika "Tribun Jambi." *Jurnal Dinamika Manajemen*, 7(1), 27–36. <https://doi.org/10.22437/jdm.v7i1.16661>
- Sari, I. P. (2021). The Implementation of Corporate Governance on Company Performance. *Juripol*, 4(1), 90–97. <https://doi.org/10.33395/juripol.v4i1.10987>
- Sholihah, S. M., Aditiya, N. Y., Evani, E. S., & Maghfiroh, S. (2023). The Concept of Classical Assumption Testing in Multiple Linear Regression. *Jurnal Riset Akuntansi Soedirman*. <https://doi.org/10.32424/1.jras.2023.2.2.10792>
- Simanjuntak, K. (2015). Implementation of Government Decentralization Policy in Indonesia. *Jurnal Bina Praja*, 07(02), 111–130. <https://doi.org/10.21787/JBP.07.2015.111-130>
- Suartini, N. K. S., & Bagia, I. W. (2022). The Influence of Competence and Work Discipline on Employee Performance. *Acman: Accounting and Management Journal*, 2(2), 158–163. <https://doi.org/10.55208/aj.v2i2.48>
- Suawah, M. A. (2021). Analysis of Cash Receipts Accounting Information Systems in Improving Internal Control at Gmim Siloam Sonder Hospital. *Jurnal EMBA*, 9(3), 1463–1471. <https://doi.org/10.35794/emba.v9i3.35785>
- Tica Darsa, Andreas Andreas, & Kasman Arifin. (2015). The Influence of Internal Governance on the Performance of Regional-Owned Enterprises (BUMD) in Riau Province. *Jurnal Akuntansi Keuangan Dan Bisnis*, 8, 1–9.
- Vo, D. H. (2010). The Economics of Fiscal Decentralization. *Journal of Economic Surveys*, 24(4), 657–679. <https://doi.org/10.1111/j.1467->

6419.2009.00600.x

- Widiyastuti, S.-. (2019). Legal Politics of Regional-Owned Enterprises (BUMD) in Business Activities to Realize Social Welfare. *Law and Justice*, 4(1), 12–22. <https://doi.org/10.23917/laj.v4i1.8050>
- Widjaya, M. A., & Sisdianto, E. (2024). Financial Statement Analysis to Assess Corporate Financial Stability. 1(6). <https://jicnusantara.com/index.php/jicn>
- Wirapratama, R. & Murtanto. (2023). The Influence of Bank Health Levels Using the CAMELS Model Approach on Banking Stock Performance. *Jurnal Ekonomi Trisakti*, 3(2), 2653–2662. <https://doi.org/10.25105/jet.v3i2.17485>