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THE NEXUS OF GOVERNANCE AND HUMAN DEVELOPMENT: THE ROLES OF PROFESSIONALISM, BUDGETING, PERFORMANCE ACCOUNTABILITY, AND BUREAUCRATIC REFORM

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Abstract

West Java, Indonesia's most populous province, still faces challenges in human development quality. Over the past six years, the average Human Development Index (HDI) in 17 of 27 cities/regencies has remained below the national level and, in 2024, did not meet regional development targets. This condition indicates a gap between governance and development outcomes that requires systematic examination. This study analyzes the effect of civil service professionalism, human development budget allocation, and government performance accountability on human development quality, with bureaucratic reform as a moderating variable. The research employs a moderated panel regression using a Fixed Effect Model, estimated on balanced panel data from 27 cities/regencies in West Java over the period 2019–2024. Results show that civil service professionalism and human development budget allocation have a positive and significant effect on human development quality, whereas performance accountability alone has a negative and insignificant effect. However, the interaction term between bureaucratic reform and performance accountability yields a positive coefficient, indicating that reform converts procedural-formal accountability into a substantive performance mechanism. These findings highlight bureaucratic reform as an institutional catalyst that transforms accountability into a substantive development instrument while also emphasizing the need for debureaucratization, strengthened professionalism, and consistent budget commitment to human development to accelerate development target achievement and improve the equity of living standards.

Kata Kunci
Indeks Pembangunan Manusia
Jawa Barat
Moderation
Orthogonalized Fixed Effect
Profesionalitas Aparatur Sipil Negara
Reformasi Birokrasi

Abstrak

Jawa Barat sebagai provinsi berpenduduk terbanyak di Indonesia masih menghadapi persoalan kualitas pembangunan manusia. Selama enam tahun terakhir, rata-rata Indeks Pembangunan Manusia (IPM) di 17 dari 27 kabupaten/kota berada di bawah capaian nasional dan pada tahun 2024 belum memenuhi target pembangunan daerah. Kondisi ini menunjukkan kesenjangan antara tata kelola dan capaian pembangunan yang perlu dikaji secara sistematis. Studi ini bertujuan menganalisis pengaruh profesionalitas aparatur, alokasi anggaran pembangunan manusia, dan akuntabilitas kinerja pemerintah terhadap kualitas pembangunan manusia, sekaligus mengevaluasi peran reformasi birokrasi sebagai variabel moderasi. Penelitian menggunakan regresi panel termoderasi dengan estimasi Fixed Effect Model pada 27 kabupaten/kota di Jawa Barat periode 2019–2024, berdasarkan data sekunder. Hasil penelitian menunjukkan bahwa profesionalitas aparatur dan alokasi anggaran pembangunan manusia berpengaruh positif dan signifikan terhadap kualitas pembangunan manusia, sedangkan akuntabilitas kinerja pemerintah berpengaruh negatif dan tidak signifikan. Namun, interaksi reformasi birokrasi dengan akuntabilitas kinerja mengubah arah pengaruh menjadi positif, menandakan bahwa akuntabilitas tanpa reformasi cenderung prosedural-formalistik dan belum menghasilkan kinerja substantif. Temuan ini menegaskan peran reformasi birokrasi sebagai katalis institusional yang mentransformasikan akuntabilitas menjadi instrumen substantif pembangunan, serta menggarisbawahi pentingnya debirokratisasi, penguatan profesionalitas aparatur, dan komitmen anggaran pembangunan manusia untuk mempercepat pencapaian target pembangunan dan pemerataan kualitas hidup.

INTRODUCTION

Human development is widely recognized as both the ultimate objective and final outcome of development policy at global and national levels. The United Nations Sustainable Development Goals Report 2024 (UN DESA, 2024) emphasizes that genuinely inclusive development directly enhances human capabilities, as reflected in the core pillars of Goal 3 (Good Health and Well-Being), Goal 4 (Quality Education), and Goal 8 (Decent Work and

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Economic Growth). In parallel, the World Bank's Global Economic Prospects report emphasizes that the Human Capital Project positions investment in human capital as a key driver of sustainable growth and poverty reduction (World Bank, 2024). This paradigm is consistent with the capability approach, which reframes development as the expansion of substantive freedoms and capabilities such as being healthy, educated, and productively engaged rather than merely an increase in aggregate income (Seckler and Volkert, 2021). Traditional growth-based metrics have proved insufficient to capture the complexity of well-being (Liu et al., 2024), prompting the widespread use of the Human Development Index (HDI) as a more holistic measure that incorporates health, education, and living standards (Ambya, 2021; Andriani et al., 2024; Hamsani et al., 2024; Sehnbruch et al., 2015). Yet, human development remains problematic, particularly at the subnational level, where substantial disparities persist (Scherbov and Gietel-Basten, 2020).

The Indonesian case illustrates these challenges clearly. According to Statistics Indonesia (Badan Pusat Statistik, 2025), roughly 30 out of 38 provinces have not yet reached the "very high" human development category, while several eastern regions, such as Central Papua and Highland Papua, still fall into medium or low human development. Similar disparities are also evident internationally, for example, across US states, where HDI values range from Mississippi (comparable to Poland) to Massachusetts (comparable to Norway) (Scherbov and Gietel-Basten, 2020). In West Java, the most populous and strategically important province in Indonesia, the HDI (Indeks Pembangunan Manusia, IPM) increased from 72.09 in 2020 to 74.43 in 2024 (Badan Pusat Statistik, 2025). The distribution of HDI categories across regencies and cities is presented in Table 1.

Table 1. Human Development Index (HDI) Categories of Regencies and Cities in West Java Province

Category	Regency/City	Remarks
Very High	Bandung City, Bekasi City, Depok City, Cimahi City	Urban areas, economic centers
High	Bogor City, Cirebon City, Sukabumi City, Bekasi Regency, Tasikmalaya City, Bandung Regency, Banjar City, Sumedang Regency, Karawang Regency, Purwakarta Regency, Ciamis Regency, Bogor Regency, Kuningan Regency	Industrial and economic regions or small urban areas
Medium	Cirebon Regency, Subang Regency, West Bandung Regency, Pangandaran Regency, Majalengka Regency, Indramayu Regency, Sukabumi Regency, Garut Regency, Tasikmalaya Regency, Cianjur Regency	Rural areas, underdeveloped regions

Source: BPS, 2025 (Processed)

However, 17 of its 27 cities/regencies still record average HDI levels below the national figure of 75.02 and have not met the targets set in the Regional Medium-Term Development Plan (RPJMD). The gap between Bandung City (82.36) and Cianjur Regency (66.00) exceeds 16 points, with large, industrialized cities dominating the very high and high categories, while rural regencies in the southern and central areas remain in the medium category (Badan Pusat Statistik, 2025). This pattern reveals a structural urban–rural divide that risks undermining West Java's long-term competitiveness and social cohesion.

The effective realization of global, national, and subnational human development agendas ultimately depends on the maturity of government institutions and their ability to transform public resources into high-quality health, education, and employment opportunities. Local governments are the primary frontline actors in this process. Empirical studies show that government spending directed to key human development sectors has a positive impact on HDI (Arfandi et al., 2025; Asnidar et al., 2025; Banase and Purwono, 2024; Sutono, 2022), but the magnitude of this impact is conditioned by transparent, accountable, and participatory budgeting processes, as well as institutional capacity (Nurvita et al., 2022; Sulastri et al., 2025). At the same time, comparative evidence from Asian countries indicates that governance dimensions such as government effectiveness, control of corruption, regulatory quality, and the rule of law significantly influence inclusive human development outcomes (Fahmi, 2018; Keser and Gökmen, 2018; Linawati et al., 2021; Stylianou et al., 2024).

Nevertheless, much of the existing literature treats governance as a monolithic construct operationalized through aggregate indices. This approach overlooks the mechanisms through which specific governance components—civil service professionalism, human development budget allocation, performance accountability, and bureaucratic reform—jointly shape education, health, and living standards at the provincial and regency or city levels (Ali, 2025; Stylianou et al., 2024; Sunardi et al., 2022). In West Java, an empirical paradox emerges: governance indicators such as the Government Agency Performance Accountability System (SAKIP) have achieved an "A" rating and improved steadily over time, and various bureaucratic reform initiatives have been implemented, yet the acceleration of HDI improvement remains below both national performance and RPJMD targets. This paradox raises a fundamental question: are governance improvements, as currently measured, genuinely substantive or still predominantly procedural and formalistic, and why have they not translated more effectively into higher-quality human development outcomes?.

Within this context, the professionalism of the civil service (Aparatur Sipil Negara, ASN) is a critical precondition for effective governance. Refering to Weberian bureaucracy

and human capital theory, civil service professionalism entails merit-based recruitment, technical competence, integrity, and autonomy from undue political interference (Syahraini et al., 2025). Empirical studies show that ASN professionalism significantly improves organizational performance, thereby supporting local HDI achievements (Firdausijah, 2022; Kahpi et al., 2022; Syahraini et al., 2025; Tobing, 2023). Human development budget allocation, understood here as the share of regional expenditure devoted to education, health, and social protection, can be explained by Keynesian fiscal multiplier theory and human capital theory, which posit that well-targeted public spending enhances capabilities and productivity (Arfandi et al., 2025; Banase and Purwono, 2024; Sutono, 2022). Government performance accountability, as reflected in SAKIP scores, is grounded in agency theory, emphasizing performance management, transparency, and results-based accountability as mechanisms for reducing information asymmetries between government and citizens (Apriani, 2024; Devi and Basyar, 2024; Nani et al., 2021; Sianturi and Dwicaksono, 2023). Bureaucratic reform, inspired by New Public Management and Good Governance, seeks to improve structures, processes, and organizational culture through decentralization, performance measurement, digitalization, and transparency, thereby enhancing service quality and contributing to better HDI outcomes (Lumenta et al., 2023; Marsdenia, 2018; Sandiasa and Agustana, 2018).

While previous studies have highlighted the importance of governance in human development, they typically examine variables in isolation or treat governance as a monolithic construct, thereby overlooking the complex mechanisms and interactions among specific subnational governance components. Furthermore, conventional panel-data analyses in this domain often suffer from multicollinearity and endogeneity when testing complex moderating effects. To address these gaps, the specific contribution of this study is twofold. Theoretically, it introduces an integrated analytical framework that decomposes governance into measurable, interacting components, specifically identifying bureaucratic reform as an institutional catalyst that moderates procedural performance accountability. Methodologically, it introduces the Orthogonalized Fixed Effect Moderation (OFEM) framework to resolve severe multicollinearity issues in governance metrics, yielding robust, precise, and replicable estimates for subnational development research.

Based on this background, this study aims to empirically analyze the effects of civil service professionalism, human development budget allocation, and government performance accountability on human development outcomes in 27 cities and regencies in West Java over the period 2019–2024, while also evaluating the moderating role of bureaucratic reform. More specifically, the research examines the following hypotheses: (1) civil service professionalism has a significant effect on human development; (2) human development budget allocation has a significant effect on human development; (3) government performance accountability has a significant effect on human development; and (4) bureaucratic reform moderates the relationship between performance accountability and human development, transforming accountability from a predominantly procedural mechanism into a more substantive driver of human development. To obtain more robust estimates in the presence of potential multicollinearity and endogeneity, the study develops an Orthogonalized Fixed Effect Moderation (OFEM) framework that integrates Gram–Schmidt orthogonalization, fixed-effect panel regression, and bias-reduced clustered standard errors to test interaction effects among governance variables in a statistically rigorous manner.

In general, the study offers theoretical, methodological, and practical contributions. Theoretically, it decomposes governance, often treated as an aggregate index, into measurable components (civil service professionalism, human development budget allocation, performance accountability, and bureaucratic reform) and examines their causal relationships with human development within the capability approach and contemporary governance theory. Methodologically, the OFEM framework provides a more robust and replicable moderated panel approach for governance and development research at the subnational level. Practically, the findings are expected to inform evidence-based policymaking by the Provincial Government of West Java and local governments in designing bureaucratic reform strategies, strengthening civil service professionalism, and sharpening human development–oriented budget allocation. Overall, the study seeks to help reduce interregional HDI disparities, accelerate the achievement of RPJMD targets, and enhance West Java's competitiveness at the national and global levels.

METHODS

This study employs a quantitative approach with a panel data design to examine the empirical relationships between civil service professionalism, human development budget allocation, and government performance accountability and human development outcomes across local governments in West Java Province. The analysis covers 27 cities and regencies over the period 2019–2024, generating a city/regency–year panel that captures both cross-sectional and temporal variation. The panel data design is chosen because it allows the study to control for unobserved, time-invariant heterogeneity across local governments while observing changes over time in key governance and development indicators. A distinctive feature of the research design is the treatment of bureaucratic reform as a moderating variable, used to assess how it strengthens or alters the direction of the relationship between the independent variables, particularly government performance accountability, and the dependent variable, namely human development quality as measured by the HDI.

West Java Province is selected as the study area because it is the most populous and one of the most economically strategic provinces in Indonesia, while simultaneously exhibiting considerable disparities in human development performance between urban and rural jurisdictions. The population of the study comprises all 27 cities/regencies in West Java. Because this number is manageable and policy-relevant, the research employs a census rather than sampling strategy. Thus, each city and regency is treated as an analytical unit observed annually, yielding 162 observations (27 × 6). In addition, the temporal scope from 2019 to 2024 is chosen to capture recent dynamics of human development, fiscal policy, performance accountability, and bureaucratic reform at the local government level, including the period in which many governance reforms and performance-based systems have been consolidated. The operationalization of the variables is presented in Table 2.

Table 2. Operationalization of Variables

No.	Variable	Indicator	Data Source
1	Human Development (HDI)	Human Development Index (Ratio)	Statistics Indonesia
2	Civil Service Professionalism (CSP)	Civil Servant Professionalism Index (Ratio)	State Civil Service Agency
3	Human Development Budget Allocation (HBA)	Ln Budget Amount on Human Development (Ratio)	Ministry of Finance
4	Government Performance Accountability (GPA)	SAKIP Score (Ordinal)	Ministry of Administrative and Bureaucratic Reform
5	Bureaucratic Reform (BRI)	Bureaucratic Reform Index (Ordinal)	Ministry of Administrative and Bureaucratic Reform

Source: Compiled by the Authors

Human development is operationalized using the Human Development Index (HDI) published by Statistics Indonesia (BPS). Substantively, this composite index measures the ultimate outcomes of regional development, specifically capturing health, education, and living standards. Civil Service Professionalism (CSP) is measured using the Civil Servant Professionalism Index (IP-ASN) issued by the State Civil Service Agency (BKN). Substantively, this index evaluates the capacity, competence, and ethical conduct of the local bureaucratic apparatus, specifically covering educational qualifications, technical and managerial competencies, objective performance appraisals, and adherence to disciplinary codes. Human Development Budget Allocation (HBA) goes beyond aggregate regional spending; it is operationalized as the natural logarithm of the regional expenditure devoted to education, health, and economic development. Government Performance Accountability (GPA) is quantified using the SAKIP score evaluated by the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB). This variable captures the substantive quality of a local government's results-based management, summarizing the quality of strategic planning, performance measurement, and results-based reporting. The Bureaucratic Reform Index (BRI), also evaluated by KemenPAN-RB, serves as a proxy for holistic institutional transformation. Substantively, it measures structural and procedural improvements in local governance, encompassing deregulation, structural right-sizing, merit-based human resource management, and the enhancement of public service delivery quality.

The analytical sequence begins with descriptive and exploratory analysis. Descriptive statistics are used to characterize the distribution of each variable, including measures of central tendency and dispersion, as well as minimum and maximum values, to understand the general profile of human development and governance indicators across West Java's cities and regencies. This step is crucial for detecting extreme or anomalous observations that might bias regression estimates and for assessing whether transformations such as logarithms have adequately normalized skewed distributions, as recommended in prior empirical studies (Sahputri and Siswidianto, 2023). Additional exploratory analysis, such as inspection of time trends and simple correlation patterns, helps to identify emerging trajectories in human development and governance measures and to flag potential multicollinearity between predictors and interaction terms that must be addressed at the modeling stage.

To analyze the complex relationships between governance variables and human development in this panel context, the study employs an Orthogonalized Fixed Effect Moderation (OFEM) strategy. This approach integrates a fixed effect model with sequential Gram–Schmidt orthogonalization of predictors and interaction terms and uses bias-reduced clustered robust standard errors to address heteroskedasticity and serial correlation within local government clusters, in line with recent methodological advances in panel econometrics (Millo, 2017). The modeling process begins with the estimation of a baseline fixed effect model in which HDI is regressed on civil service professionalism, human development budget allocation, and government performance accountability, while controlling for time effects and unobserved, time-invariant heterogeneity across cities/regencies. This baseline model establishes the direct effects of the key explanatory variables on human development before introducing moderation.

The next stage introduces Gram–Schmidt orthogonalization, applied progressively to the predictors at two conceptual levels, which are the individual or human resource level, represented by civil service professionalism, and the institutional level, represented by human development budget allocation, government performance accountability, and bureaucratic reform. Through forward variable selection on these orthogonalized predictors, the study defines an optimal stopping rule based on the marginal contribution of each

variable to model fit, thereby enhancing computational efficiency and stabilizing the estimation in a panel with multiple correlated governance indicators. Building on this orthogonalized structure, the study specifies a moderated regression model in which bureaucratic reform interacts with the main independent variables, with particular focus on the interaction between bureaucratic reform and performance accountability. The interaction term is orthogonalized with respect to the main effects, which substantially reduces multicollinearity between the interaction and its constituent variables and allows for more precise and interpretable estimates of both main and moderating effects, consistent with best practices discussed in the moderation literature (Memon et al., 2019). All specifications are estimated using cluster-robust standard errors at the city/regency level, adjusted through bias-reduced linearization to accommodate intra-cluster correlation and heteroskedasticity, thereby improving the reliability of statistical inference in the presence of complex error structures typical in public sector panel data.

The Orthogonalized Fixed Effect Moderation (OFEM) framework was implemented through three sequential steps. First, a standard Fixed Effect (FE) model was estimated to determine the direct effects of the governance variables. Next, Gram–Schmidt orthogonalization was applied to the interaction term to isolate the pure moderating effect by removing the variance it shares with its main effects. Finally, the orthogonalized model was estimated using bias-reduced clustered robust standard errors to correct for intra-cluster correlation and heteroskedasticity. To assess the advantages of OFEM relative to more conventional approaches, a comparative model assessment was conducted by estimating alternative specifications, including standard fixed effects without orthogonalization, random effects models, and selected dynamic panel models that include lagged dependent variables. Focusing on diagnostic indicators such as variance inflation factors (VIF) for multicollinearity, changes in coefficient magnitudes, and overall model fit, the comparison revealed that standard models yielded severe multicollinearity, with the VIF reaching 652 due to the interaction term. The results demonstrate that OFEM more effectively reduces this multicollinearity, yielding more precise, stable, and interpretable estimates of the moderating effects of bureaucratic reform on human development, in line with prior methodological advancements (Memon et al., 2019).

Robustness checks are implemented to ensure the stability and validity of the findings. These include sensitivity analysis with alternative sequences of orthogonalization for the independent and moderating variables, which confirms that the key moderation coefficients remain qualitatively consistent across different orthogonalization orders. Additional checks involve re-estimation after excluding potential outliers or extreme observations, as well as the use of alternative operationalizations of the budget variable to verify that results are not driven by specific modeling choices.

In methodological terms, this design not only addresses the technical challenges of panel data analysis in a complex governance context but also offers a substantive contribution to public administration and regional development research. By integrating fixed effects, orthogonalization, and robust clustered inference, the OFEM framework allows a more nuanced examination of how bureaucratic reform reshapes the influence of civil service professionalism and human development–oriented budget allocation on human development. The optimized moderation strategy clarifies under what conditions bureaucratic reform transforms accountability from a predominantly procedural compliance mechanism into a substantive driver of human development. These insights provide an analytically robust basis for designing adaptive and evidence-based bureaucratic reform policies in West Java and other subnational jurisdictions facing similar governance and development challenges.

RESULTS AND DISCUSSION

The empirical analysis begins with an examination of the descriptive statistics for all variables, as presented in Table 3.

Table 3. Descriptive Statistics Results

Variable	Mean	Median	Max	Min	Std. Dev.
HDI	72.48	71.51	83.54	65.36	4.72
CSP	66.98	68.00	89.43	31.25	14.64
HBA	28.21	28.26	29.47	26.83	0.56
GPA	4.62	5.00	6.00	4.00	0.62
BRI	4.25	4.00	6.00	3.00	1.06

Source: Processed by the Authors

Human development, measured by the city/regency HDI, has a mean of 72.48 and a median of 71.51, with a standard deviation of 4.72 and a range from 65.36 to 83.54. This pattern indicates a relatively symmetric distribution with moderate dispersion, suggesting that most cities and regencies cluster around the provincial average, while a few high-performing urban areas such as Bandung approach the upper bound of the distribution. By contrast, civil service professionalism exhibits a mean of 66.98 and a median of 68.00 but a very large standard deviation of 14.64 and a wide range from 31.25 to 89.43. This points to substantial heterogeneity in professional standards and human resource capacity across local governments in West Java. Human development budget allocation, already transformed into its natural logarithm, has a mean of 28.21, a median of 28.26, a very low standard deviation of 0.56, and a narrow range between 26.83 and 29.47. The transformation yields a highly homogeneous distribution, indicating that—once expressed in logarithmic form—differences in budget magnitude across jurisdictions are present but relatively compressed in statistical terms. Performance accountability (SAKIP) and bureaucratic reform indices also show modest variation, with means of 4.62 and 4.25, respectively, and standard deviations of 0.62 and 1.06. These patterns underscore that while fiscal and

governance frameworks are broadly standardized across West Java, the quality of human resources remains highly uneven, which has important implications for understanding interregional disparities in human development.

Before estimating the main model, classical assumption tests are conducted to ensure the appropriateness of the econometric specification. The results are summarized in Table 4.

Table 4. Classical Assumption Test Results

Assumption Test	Test	Result	Note
Normality	Skewness–Kurtosis Test	0.83	-
Heteroskedasticity	Breusch–Pagan/Cook–Weisberg Test	0.00	CRSE
Multicollinearity	VIF	652	Orthogonalization
Autocorrelation	Wooldridge Test	0.00	CRSE

Source: Processed by the Authors. Note: CRSE = cluster-robust standard errors; VIF = variance inflation factor.

The skewness–kurtosis test for normality yields a probability value of 0.8303, indicating that the residuals do not deviate significantly from normality. However, the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity returns a probability of 0.00, and the Wooldridge test for autocorrelation also produces a probability of 0.00, both suggesting the presence of heteroskedastic and serially correlated errors in the panel. In addition, the initial Variance Inflation Factor (VIF) reaches 652, implying severe multicollinearity among the predictors and especially between main effects and interaction terms. These diagnostic results justify the use of clustered robust standard errors and the orthogonalization strategy embedded in the Orthogonalized Fixed Effect Moderation (OFEM) framework. By applying Gram–Schmidt orthogonalization and bias-reduced clustered robust inference, the analysis effectively controls for unobserved heterogeneity, mitigates multicollinearity, and adjusts for heteroskedasticity and autocorrelation, thus providing statistically reliable estimates for the complex relationships under study.

Table 5. Moderated Regression Analysis Results

Variable	Coefficient	t-Statistic	Prob.
CSP	0.71	22.02	0.00
HBA	0.30	2.70	0.01
GPA	-0.04	-1.42	0.17
BRI	0.46	13.45	0.00
GPA × BRI	0.10	5.04	0.00
C	72.48		
Adjusted R-squared			0.90
Prob > F			0.00

Source: Processed by the Authors

The OFEM estimation results, presented in Table 5, show that the model has strong explanatory power. The adjusted R-squared reaches 0.90, indicating that nearly 90 percent of the variation in human development across cities and regencies and over time is explained by the set of governance variables and their interaction. The overall F-test is highly significant (Prob > F = 0.000), confirming that the model as a whole is statistically meaningful. Within this framework, civil service professionalism, human development budget allocation, and bureaucratic reform exhibit positive and statistically significant coefficients, while government performance accountability alone shows a negative but statistically insignificant effect. The interaction between accountability and bureaucratic reform is positive and strongly significant, revealing an important moderating role of reform in transforming the impact of accountability on human development. All regressors, including the interaction term, are centered at zero, and the fixed effects are normalized to have an average of zero. Consequently, the constant (72.48) equals the mean HDI in the estimation sample; it does not represent the predicted HDI when the original governance indicators equal zero.

The coefficient for civil service professionalism is 0.71 with a t-statistic of 22.02 and a p-value below 0.001, indicating a strong and highly significant positive relationship with human development. Substantively, this implies that, ceteris paribus, a one-point increase in the civil service professionalism index is associated with an increase of about 0.71 points in the HDI of a city or regency. Given the high variability of this index across jurisdictions, the magnitude of this effect is substantial and confirms that professional, competent, and ethically grounded civil servants are a foundational driver of local human development outcomes. This finding is consistent with Anggiani et al. (2024), who show that higher competence enhances employee performance and organizational outcomes, and with Zulkieflimansyah et al. (2023), who find that civil servant competence and motivation significantly improve service quality, while Sitio (2025) highlights that human resource quality alone is not sufficient without mediating organizational commitment.

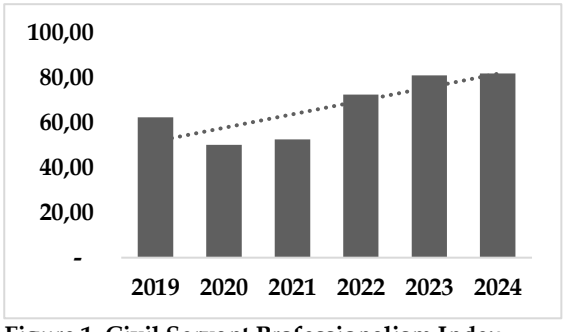

Figure 1. Civil Servant Professionalism Index
Source: BKN (2019–2024), processed

The analysis of city-level data in West Java (Figure 1) reinforces these findings. Evaluations of the Civil Service Professionalism Index (IP-ASN) identify Bogor Regency, Depok City, and Purwakarta Regency as the top performers, while Sukabumi City, Pangandaran Regency, and Garut Regency occupy the lowest ranks. Comparative analysis reveals a positive correlation between IP-ASN rankings and HDI achievements: Bogor Regency, which

ranks first in IP-ASN, records a consistently rising HDI trajectory, whereas low-IP-ASN areas such as Pangandaran struggle to accelerate their human development progress. At the sectoral level, professional civil servants in health contribute to higher life expectancy through better quality primary health services, as confirmed by Damayanti and Mustakim (2024), who show that health service factors managed by qualified civil servants explain 34.7 percent of the variance in HDI across West Java. In the economic domain, civil servants play a pivotal role in designing and implementing empowerment programs for micro and small enterprises, social assistance, and investment facilitation. Regions with high IP-ASN scores tend to have lower poverty rates and higher gross regional domestic product (GRDP) per capita, indicating that professional bureaucracy enhances people's purchasing power and thus the standard of living component of HDI (Utami et al., 2025).

From a governance perspective, these results empirically substantiate the Weberian and human capital foundations of civil service professionalism. The merit system, competency-based recruitment and promotion, performance-based incentives, and strong ethical standards emerge as indispensable conditions for translating public resources into tangible improvements in education, health, and economic welfare. Studies by Sandy et al. (2019) and evaluation reports from the West Java Civil Service Agency (BKD) underline the effectiveness of career development models that integrate competency assessment and performance incentives in achieving better human development outcomes. At the same time, the use of the IP-ASN as an early warning and monitoring tool, supported by big data analytics and digital dashboards, enhances transparency and accountability in civil service management and helps identify cities and regencies that require targeted interventions. For West Java, these findings suggest that strengthening civil service professionalism is not merely an internal organizational concern but a strategic lever for reducing interregional HDI disparities and accelerating the province's progress toward national and global development targets.

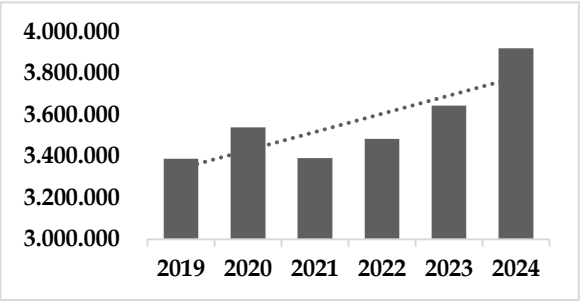

Figure 2. Human Development Budget Allocation
Source: Ministry of Finance (2019–2024), processed

The coefficient for human development budget allocation is 0.30 with a t-statistic of 2.70 and a p-value of 0.01, indicating a positive and statistically significant effect on HDI at the 5 percent level. This means that increases in logarithmic spending on education, health, and economic development are associated with higher levels of human development, even after controlling for professionalism, accountability, and bureaucratic reform. The result supports the Keynesian fiscal multiplier and human capital perspectives, according to which well-targeted public expenditure enhances human capabilities. It is in line with Sari et al. (2022), who find that education and health budgets have a significant positive impact on HDI, and with Azzahra et al. (2017), who show that capital expenditure positively affects HDI in Jambi Province. Pratama and Mandai (2023) similarly report that education and health spending jointly exert a significant influence on HDI in West Java cities and regencies, with a very high explanatory power.

Descriptive and comparative analysis of budget patterns in West Java (Figure 2) provides further nuance. On average, cities and regencies allocate about 22.3 percent of their regional budget to education and 12.8 percent to health, both exceeding the constitutional and regulatory minimums of 20 percent and 10 percent, respectively. Yet these averages conceal notable disparities. Bandung City, for example, allocates approximately 28.7 percent of its budget to education and 15.2 percent to health, whereas several cities allocate closer to 20.5 percent and 10.3 percent (Kementerian Keuangan Republik Indonesia, 2025). These differences reflect variations in policy priorities and fiscal capacity and help explain why urban and fiscally stronger jurisdictions tend to achieve higher HDI levels. Evidence from Bogor City, as documented by Djajuli et al. (2023), shows that substantial increases in education and health budgets over 2010–2016 coincided with an acceleration of HDI from 78.3 to 81.2, illustrating how sustained investments can gradually lift human development.

Mechanistically, education spending contributes to expanded access, better infrastructure, and improved learning quality. Sumiyarti and Pratama (2024) find that the government education expenditure significantly influence average years of schooling in West Java, with an elasticity of 0.312. Health spending, in turn, raises life expectancy by improving access to and quality of health services, particularly through health insurance subsidies, primary care facilities, and public health programs. Economic function spending supports local economic empowerment, infrastructure, and employment creation, which enhance purchasing power and the standard of living dimension of HDI. However, the relatively homogeneous distribution of the log-transformed budget variable in the descriptive statistics suggests that beyond a certain threshold, differences in spending levels alone are insufficient to explain HDI disparities unless they are accompanied by effective governance and implementation capacity. This emphasizes the importance of integrating performance-based budgeting, cross-sectoral coordination, and robust monitoring and evaluation systems, including digitalized financial and program management tools, to ensure that budget

allocations are translated into concrete improvements in human development across all regions of West Java.

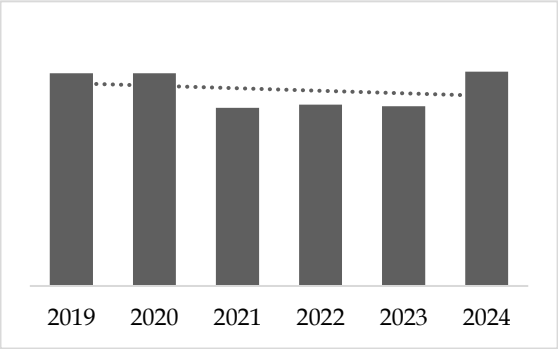

Figure 2. SAKIP Performance Evaluation Scores
Source: KemenPAN-RB (2019–2024), processed

In contrast to professionalism and budget allocation, the direct effect of government performance accountability, measured by SAKIP scores (Figure 3), is negative and statistically insignificant. The coefficient is approximately −0.04 with a p-value of 0.17, exceeding the 0.05 significance threshold. This finding indicates that, in the absence of strong bureaucratic reform, there is no statistically significant evidence to suggest that higher SAKIP scores directly translate into better human development outcomes. The lack of statistical significance implies that formal accountability mechanisms alone are insufficient to drive HDI improvements. The result resonates with Habibi's (2020) notion of a compliance trap in SAKIP implementation, where excessive focus on fulfilling administrative requirements diverts attention and resources away from substantive developmental objectives.

Field observations and earlier studies support this interpretation. In several cities and regencies in West Java, SAKIP is implemented primarily as a reporting obligation rather than as a strategic performance management instrument. Nani et al. (2021), studying East Sumba, show that SAKIP has not functioned effectively in terms of goal achievement, integration, and adaptation. Similar patterns emerge in West Java, where SAKIP processes can become an administrative burden that consumes bureaucratic time and energy without necessarily improving the design or execution of programs that directly affect education, health, and income. Institutional capacity heterogeneity further complicates the picture: jurisdictions with limited human resources and technical skills are prone to compliance overload, struggling to meet SAKIP documentation demands while lacking the capacity to link performance information to planning and budgeting decisions. Conversely, better-resourced jurisdictions are more capable of integrating SAKIP into their performance management systems, and in those cases, accountability is more likely to support human development outcomes.

The interaction term between SAKIP and the bureaucratic reform index has a positive coefficient of 0.10 with a t-statistic of 5.04 and a p-value below 0.001, indicating a strong and statistically significant moderating effect. This means that in cities and regencies with more advanced bureaucratic reform, the relationship between performance accountability and human development becomes positive and stronger. Put differently, bureaucratic reform converts accountability from a largely procedural, compliance-oriented mechanism into a substantive driver of human development. This finding aligns with Taufik (2021), who shows that reform elements such as the merit system, performance appraisal, and talent management can shift bureaucratic culture from rule orientation to outcome orientation, and with Sianturi and Dwicaksono (2023), who find that government performance accountability significantly enhances regional development when embedded within a broader reform context.

Conceptually, bureaucratic reform acts as an institutional catalyst that fosters synergistic integration effects between accountability instruments and development programs. Through digitalization of public services, merit-based human resource management, and results-based management systems, reform efforts create an environment in which SAKIP is integrated with planning, budgeting, and service delivery, rather than standing apart as a reporting exercise. In unreformed settings, SAKIP tends to suffer from goal displacement syndrome, where the pursuit of higher SAKIP scores becomes an end in itself and crowds out the original objective of improving citizens' welfare. In reformed jurisdictions, by contrast, SAKIP is used to prioritize programs that have the greatest impact on HDI, reallocate resources from low-impact to high-impact activities, and hold managers accountable for measurable improvements in education, health, and living standards.

The combined evidence from professionalism, budget allocation, accountability, and bureaucratic reform thus provides a coherent explanation for the persistent HDI disparities observed across West Java. Regions with high civil service professionalism, strong human development–oriented budgets, and deep bureaucratic reform are able to leverage accountability mechanisms to deliver substantial improvements in human development. Regions with weaker professionalism, limited fiscal capacity, and shallow reform remain trapped in formalistic compliance and struggle to convert resources and procedures into tangible welfare gains. For West Java, these findings underscore the need for an integrated policy package that simultaneously enhances civil service professionalism, sharpens and protects human development budgets, and deepens bureaucratic reform so that SAKIP and related instruments function as genuine strategic management tools. Such an integrated approach is essential not only to close the HDI gap between urban and rural areas but also to strengthen the province's overall competitiveness and resilience in the face of national and global development challenges.

CONCLUSION

This study concludes that governance quality, when decomposed into its key components, has a decisive impact on human development across cities and regencies in West Java. Civil service professionalism exerts a strong, statistically significant positive effect on HDI, confirming that merit-based, competent, and high-integrity bureaucrats are fundamental to improving education, health, and living standards.

Human development–oriented budget allocation to education, health, and the economy also significantly increases HDI, demonstrating that sustained public investment in these sectors effectively enhances people's quality of life. By contrast, performance accountability (SAKIP) alone does not exhibit a statistically significant direct effect on HDI. This lack of significance highlights that without deeper institutional change, formal accountability mechanisms are insufficient to substantively impact human development.

However, bureaucratic reform significantly moderates this relationship: in jurisdictions with more advanced reform, SAKIP becomes positively associated with human development, meaning that reform acts as an institutional catalyst that turns accountability from a compliance tool into a substantive driver of outcomes. These findings explain the wide HDI disparities—over 16 points between the highest and lowest regions—and show that reducing this gap requires an integrated strategy that strengthens civil service professionalism, protects and sharpens human development spending, and deepens bureaucratic reform so that accountability systems genuinely support the improvement of human development in West Java.

LIMITATIONS

This study has several limitations. First, treating ordinal governance indices (GPA and BRI) as continuous variables may introduce estimation biases, although this is mitigated by the use of robust standard errors. Second, the model excludes macroeconomic controls (e.g., GRDP per capita and poverty rates), limiting the analysis of socioeconomic drivers. Third, while the OFEM approach controls for unobserved heterogeneity, potential endogeneity issues remain. Finally, the study period (2019–2024) overlaps with the COVID-19 pandemic; the absence of a specific control variable for this shock may leave uncaptured biases related to budget reallocations and service disruptions. Future research should address these constraints by employing dynamic panel models or instrumental variables, incorporating macroeconomic controls, and expanding the geographic scope.

RECOMMENDATIONS

Grounded in the empirical findings, human development in West Java can be advanced only through an integrated agenda that simultaneously strengthens bureaucratic capacity, sharpens public spending, and deepens institutional reform. Civil service professionalism must be treated as a central development instrument by consolidating the merit system in recruitment and promotion, expanding competency-based training in education, health, and local economic development, and linking performance incentives explicitly to HDI gains. The IP-ASN index should function as a strategic management tool to target capacity building in lagging cities so that improvements in civil service capability translate directly into better services and higher human development.

Human development–oriented budgets must be protected and managed through integrated, performance-based budgeting rather than simply increased in volume. Although most jurisdictions already meet constitutional mandates for education and health, resources need to be systematically tied to measurable improvements in schooling, health status, and living standards. A unified human development financing framework across education, health, and economic empowerment, complemented by conditional transfers or matching grants, is required to support fiscally weaker cities, particularly in southern and peripheral regions where HDI remains low.

SAKIP and bureaucratic reform should be fused into a single, outcome-oriented performance management system. The finding that SAKIP is ineffective or weakly negative without reform but becomes development-enhancing within a reformed bureaucracy implies that accountability must be redesigned around HDI and its components as core performance indicators. Simplified reporting, integration of SAKIP with planning and budgeting, and digitalized performance information will reduce compliance burdens and refocus civil service effort on substantive programs. Coupled with territorially differentiated strategies for urban and rural areas and regular analytical reviews linking governance metrics to HDI, this integrated approach can narrow regional gaps, accelerate RPJMD targets, and consolidate West Java's position as a leading province in human development–oriented governance.

AUTHOR STATEMENTS

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Use of generative AI: The authors used gramarly solely to

correct grammar and improve language clarity in the manuscript. The authors reviewed and edited all suggested changes and take full responsibility for the content of the published article.

ABREVIATION

ASN (Aparatur Sipil Negara), BKN (Badan Kepegawaian Negara), BPS (Badan Pusat Statistik), BRI (Bureaucratic Reform Index), COVID-19 (Coronavirus Disease 2019), CRSE (Cluster-Robust Standard Errors), CSP (Civil Service Professionalism), FE (Fixed Effects), GPA (Government Performance Accountability), GRDP (Gross Regional Domestic Product), HBA (Human Development Budget Allocation), HDI (Human Development Index), IP-ASN (Indeks Profesionalitas Aparatur Sipil Negara), IPM (Indeks Pembangunan Manusia), KemenPAN-RB (Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi), OFEM (Orthogonalized Fixed Effect Moderation), RPJMD (Rencana Pembangunan Jangka Menengah Daerah), SAKIP (Sistem Akuntabilitas Kinerja Instansi Pemerintah), UN DESA (United Nations Department of Economic and Social Affairs), US (United States), VIF (Variance Inflation Factor).

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