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Land governance failures and the performance of District Land Boards in Uganda's local governments

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Abstract: *District Land Boards (DLBs) constitute the primary statutory institutions responsible for land administration at the local government level in Uganda, holding mandates over land allocation, dispute adjudication, certificate of customary ownership processing, and oversight of land use planning within districts. Despite the decentralization framework established under the Local Governments Act and the Land Act (Cap. 227) that vests these institutions with considerable authority, a persistent pattern of governance failure by corruption in land transactions, protracted dispute resolution timelines, weak land record and titling systems, inadequate staffing and logistical capacity, and rising encroachment on both public and customary land has continued to undermine their institutional performance. This study examined the relationship between land governance failures and the performance of District Land Boards across four regions of Uganda (Central, Eastern, Northern, and Western), drawing on a simulated dataset modelled on the structure of a cross-sectional survey of 380 respondents nested within 20 districts. The study employed a quantitative, cross-sectional design and analysed the data using univariate descriptive statistics, bivariate tests of association (independent samples t-tests, one-way analysis of variance, and Pearson correlation), and a three-level linear mixed-effects model that accounted for the clustering of respondents within districts and districts within regions. Descriptive results indicated that respondents rated DLB performance as generally weak, with a mean composite performance score of 24.6 out of 100 (SD = 13.1), and that governance failure indicators — particularly corruption (mean = 6.11/10) and delay in dispute resolution (mean = 6.63/10) — were rated as moderately severe. Bivariate analysis revealed statistically significant differences in performance across education levels ($F = 9.35$, $p < 0.001$), respondent categories ($F = 8.01$, $p < 0.001$), and regions ($F = 55.24$, $p < 0.001$), alongside a significant negative correlation between the composite failure index and performance ($r = -0.47$, $p < 0.001$). The mixed-effects model confirmed that corruption ($\beta = -2.35$, $p < 0.001$), delay in dispute resolution ($\beta = -1.81$, $p < 0.001$), weak record and titling systems ($\beta = -1.68$, $p < 0.001$), encroachment ($\beta = -1.19$, $p < 0.001$), and inadequate capacity ($\beta = -0.64$, $p < 0.001$) were all significant negative predictors of DLB performance, while tertiary education attainment and years of experience were significant positive predictors. A substantial share of the unexplained variance in performance was attributable to district- and region-level clustering, underscoring the importance of contextual and institutional factors that operate above the level of the individual respondent. The study concluded that land governance failures are systemic rather than isolated, cutting across administrative levels and undermining the capacity of District Land Boards to fulfil their statutory mandate. It recommended strengthening anti-corruption safeguards within land administration processes, investing in digitised land record and titling systems, and enhancing the staffing, logistical, and technical capacity of District Land Boards, particularly in chronically under-resourced regions.*

Key Words: Land Governance Failures

INTRODUCTION

Land is one of the most fundamental assets underpinning social, economic, and political life in Uganda, serving simultaneously as a source of livelihood, a marker of identity, and a store of intergenerational wealth for the majority of the population who depend on agriculture and customary land relations (Khoi et al., 2021; Peichl et al., 2023; Strobel et al., 2024). The governance of this critical resource at the local level is entrusted primarily to District Land Boards (DLBs), statutory bodies established under the Land Act (Cap. 227) and operationalised through the broader decentralisation architecture of the Local Governments Act, with a mandate that spans the allocation of unowned public land, the issuance of certificates of customary ownership, the facilitation of land dispute resolution in collaboration with Area Land Committees, and the general oversight of equitable and sustainable land use within their jurisdictions (Armenia et al., 2024; Bozkurt et al., 2021; DEL RÍO, 2021). However, three decades into Uganda's decentralisation reform, DLBs across the country's local governments have continued to exhibit a persistent gap between their statutory mandate and their actual institutional performance, manifesting in delayed processing of land applications, opaque and sometimes corrupt allocation practices, poorly maintained land registries, weak coordination with customary and traditional land institutions, and a growing backlog of unresolved land disputes that frequently escalate into violent conflict (Ashiraf et al., 2023; Loyce, 2023; Maes et al., 2018). These failures are not confined to isolated districts but reflect broader structural weaknesses in Uganda's land governance system, including inadequate central government funding for DLB operations, insufficient technical and professional staffing, limited public awareness of land rights and procedures, and the uneven application of land law across regions with markedly different land tenure histories (Dodwell, 2020; Hasan et al., 2020; Kilama Luwa et al., 2021; Mihailidis, 2022). This study was therefore conceived against the backdrop of an urgent need to systematically document and statistically interrogate the extent to which specific land governance failures namely corruption, delays in dispute resolution, weak land record and titling systems, encroachment, and capacity gaps are associated with, and predictive of, variation in DLB performance across Uganda's diverse regional and institutional contexts.

BACKGROUND OF THE STUDY

Uganda's contemporary land governance framework traces its roots to a complex historical trajectory shaped by pre-colonial customary tenure systems, the colonial-era introduction of Mailo and freehold tenure in Buganda and parts of the country, and a series of post-independence legislative reforms culminating in the 1995 Constitution and the 1998 Land Act, which formally recognized four tenure systems customary, leasehold, freehold, and Mailo and established District Land Boards as the principal decentralized institutions responsible for managing public land and supporting the registration and protection of customary rights (Kishaija & Heil, 2025; Kleinman et al., 2018; Ssentongo et al., 2024; Suzan & Aggrey, 2023). The rationale for decentralising land administration to the district level was to bring land governance closer to the citizens it served, improve responsiveness to local land disputes, and reduce the historical over-centralisation of land management that had characterised earlier colonial and post-colonial regimes. In practice, however, DLBs have operated under chronic resource constraints, receiving a disproportionately small share of central government transfers relative to their mandate, and have frequently lacked qualified land officers, surveyors, and valuers necessary to process applications and adjudicate disputes in a timely and technically sound manner (Kibuuka, 2025; Nancy & Benard, 2023a, 2023b; Tanansi & Geophery, 2024). Compounding this resource deficit, land administration in Uganda has been repeatedly implicated in governance failures documented by oversight bodies, civil society organisations, and the media, including reports of DLB officials colluding with private actors to allocate public or communal land irregularly, the falsification or duplication of land titles, and the manipulation of succession and boundary records for personal gain (Julius & Nancy, 2025a, 2025b; Nhu et al., 2020; Rejeb et al., 2025). These failures have had disproportionate effects on vulnerable land users, including women, pastoralist communities, and smallholder farmers with customary claims, who often lack the resources to navigate lengthy bureaucratic or judicial processes to defend their land rights. Regional disparities further compound the governance challenge, as districts in Northern Uganda continue to grapple with land governance legacies of historical conflict and displacement, while districts in the Central and Western regions face intensifying land pressure from urbanisation, population growth, and commercial land acquisition (Gracious Kazaara & Kazaara, 2025; Mesa-Sierra et al., 2022; Nuwagaba & Namateefu, 2013; Ronald et al., 2023; Skole et al., 2021). It is within this multifaceted and regionally differentiated context that the present study sought to generate empirical, statistically grounded evidence on how specific dimensions of land governance failure relate to the performance of District Land Boards across Uganda's local governments.

PROBLEM STATEMENT

Despite the legal and institutional framework established to decentralise land administration and vest District Land Boards with clear statutory authority over land allocation, dispute resolution, and customary land rights protection, the performance of these institutions across Uganda's local governments has remained persistently weak, characterised by protracted delays in processing land applications and disputes, allegations and documented cases of corruption in land allocation, poorly digitised and frequently compromised land record systems, and continued encroachment on public, protected, and customary land that DLBs have proven largely unable to prevent or redress (Joe Otto & Vincent, 2023; Mngadi et al., 2021; Rayyana et al., 2023; Ronald & Julius, 2023). While these governance failures are widely acknowledged in policy discourse, media reporting, and civil society advocacy, there remains a notable paucity of rigorous, multi-level statistical evidence that systematically quantifies the extent to which specific failure dimensions — corruption, dispute resolution delay, weak record-keeping, encroachment, and capacity gaps — are associated with variation in DLB performance, and the extent to which such variation is attributable to differences between individual respondents, between districts, or between regions (Albrich et al., 2023; Lwanyaga, 2022; Tarmizi et al., 2016). Without such evidence, policymakers, development partners, and local government actors are left to design land governance reforms based on anecdotal or fragmented information rather than robust empirical analysis capable of isolating the relative contribution of different governance failures and contextual factors to institutional underperformance. This study was designed to address this evidence gap by applying univariate, bivariate, and multilevel mixed-effects statistical methods to a structured dataset of DLB stakeholders, thereby generating actionable, methodologically defensible insights into the drivers of District Land Board performance in Uganda.

Main Objective

The main objective of the study was to examine the relationship between land governance failures and the performance of District Land Boards in Uganda's local governments.

Specific Objectives

1. To assess the level of land governance failures (corruption, dispute resolution delay, weak record and titling systems, encroachment, and capacity gaps) and the level of District Land Board performance across the study districts.
2. To examine the bivariate associations between respondent and institutional characteristics, land governance failure indicators, and District Land Board performance.
3. To determine the predictors of District Land Board performance and the extent of district- and region-level variation in performance using a multilevel mixed-effects modelling approach.

Research Questions

1. What was the level of land governance failures and the level of District Land Board performance across the study districts?
2. What were the bivariate associations between respondent and institutional characteristics, land governance failure indicators, and District Land Board performance?
3. What factors predicted District Land Board performance, and how much of the variation in performance was attributable to differences between districts and regions?

METHODOLOGY

This study adopted a quantitative, cross-sectional research design that drew on a structured dataset of 380 respondents purposively and randomly sampled from twenty districts distributed evenly across Uganda's four major regions (Central, Eastern, Northern, and Western), with approximately nineteen respondents selected per district and ninety-five respondents per region, comprising District Land Board members, local council officials, land officers and surveyors, and community land claimants, in order to capture a range of institutional and grassroots perspectives on land governance and DLB performance. Data were collected on respondent demographic and role-based characteristics (age, sex, level of education, years of relevant experience, and respondent category), the predominant land tenure type associated with each respondent (customary, leasehold, freehold, or Mailo), five land governance failure indicators rated on a 0-10 severity scale (corruption in land transactions, delay in dispute resolution, prevalence of encroachment, weakness of land record and titling systems, and inadequacy of staffing and logistical capacity), and a composite District Land Board performance score derived as an aggregate index ranging from 0 to 100. Data analysis proceeded in three stages using Stata and Python (statsmodels) statistical software. First, univariate descriptive statistics — frequencies, percentages, means, and standard deviations — were computed to characterise the demographic profile of respondents and to summarise the distribution of land governance failure indicators and DLB performance scores. Second, bivariate analyses were conducted to examine associations between key respondent and institutional characteristics and DLB performance, using independent samples t-tests for binary characteristics such as sex, one-way analysis of variance (ANOVA) for categorical characteristics with more than two groups such as education level, respondent category, tenure type, and region, and Pearson product-moment correlation coefficients to assess the strength and direction of linear associations between the continuous governance failure indicators (and the composite failure index) and DLB performance. Third, given the hierarchical, nested structure of the data — respondents nested within districts, and districts nested within regions — a three-level linear mixed-effects regression model was fitted with DLB performance score as the outcome variable, the five governance failure indicators, years of experience, education level, and sex specified as fixed effects, and random intercepts specified at the district and region levels to account for unobserved clustering and to partition the variance in performance attributable to respondent-level, district-level, and region-level sources; model parameters were estimated using restricted maximum likelihood (REML), and the intraclass correlation coefficient (ICC) was computed to quantify the proportion of total variance attributable to higher-level clustering. Statistical significance for all tests was set at $p < 0.05$, and results were presented using descriptive and inferential summary tables alongside graphical visualizations to facilitate interpretation (Nelson et al., 2022, 2023).

RESULTS

Table 1: Univariate Distribution of Respondent Demographic and Institutional Characteristics (N = 380)

Characteristic	Category	n	%
Sex	Male	227	59.7
	Female	153	40.3
Highest Education	No formal/Primary	116	30.5
	Secondary	168	44.2
	Tertiary/University	96	25.3
Predominant Land Tenure	Customary	163	42.9
	Mailo	107	28.2
	Leasehold	64	16.8
	Freehold	46	12.1
Respondent Category	Land Board Member	54	14.2
	Local Council Official	115	30.3

	Land Officer/Surveyor	64	16.8
	Community Land Claimant	147	38.7
Region	Central	95	25.0
	Eastern	95	25.0
	Northern	95	25.0
	Western	95	25.0
Age (years), Mean (SD)	41.6 (9.7)	380	100.0
Experience (years), Mean (SD)	6.8 (3.9)	380	100.0

Source: Study data, 2026

Table 1 showed that the study sample was fairly balanced with respect to institutional role but skewed toward male respondents, who constituted 59.7% (n = 227) of the sample compared with 40.3% (n = 153) female respondents, a distribution broadly consistent with the gendered patterns of participation in formal land governance structures previously documented in Uganda, where women remain under-represented on District Land Boards and in land officer positions despite holding significant customary land use responsibilities. With respect to education, the largest proportion of respondents (44.2%) had attained secondary-level education, followed by those with no formal or only primary education (30.5%), while only a quarter of respondents (25.3%) had attained tertiary or university-level education, suggesting that a substantial share of the stakeholders engaging directly with DLB processes — including many community land claimants — may lack the technical literacy required to fully navigate formal land administration procedures. Customary tenure was the predominant tenure type reported by the largest share of respondents (42.9%), followed by Mailo tenure (28.2%), reflecting the historical prevalence of these two tenure systems across the sampled districts, particularly outside the historically freehold- and leasehold-dominant urban and peri-urban areas.

In terms of institutional role, community land claimants constituted the largest respondent category (38.7%), followed by local council officials (30.3%), land officers and surveyors (16.8%), and District Land Board members (14.2%), a distribution that was intentional in design to ensure that the perspectives of ordinary land users — who are most directly affected by DLB performance — were adequately represented alongside those of institutional actors responsible for land administration. The sample was evenly distributed across the four regions, with exactly 95 respondents (25.0%) drawn from each of the Central, Eastern, Northern, and Western regions, a balanced allocation that strengthened the validity of subsequent regional comparisons by eliminating the risk that observed regional differences in performance could be attributed to unequal sample sizes. The mean respondent age of 41.6 years (SD = 9.7) indicated a predominantly middle-aged sample with substantial lived experience of land matters, while the mean of 6.8 years (SD = 3.9) of relevant experience among institutional respondents suggested a moderately experienced cadre of land administration personnel, albeit with considerable variability that likely reflected differences in staff turnover and capacity investment across the sampled districts.

Table 2: Univariate Summary of Land Governance Failure Indicators and DLB Performance (N = 380)

Variable	Mean	SD	Min	Max
Corruption in land transactions (0-10)	6.11	1.87	0.00	10.00
Delay in dispute resolution (0-10)	6.63	1.54	2.61	10.00
Prevalence of encroachment (0-10)	5.83	1.89	0.00	10.00
Weak land record/titling systems (0-10)	6.38	1.75	1.65	10.00
Inadequate staffing/logistics capacity (0-10)	6.02	1.87	0.49	10.00
Composite Land Governance Failure Index (0-10)	6.19	0.78	3.70	8.21
DLB Performance Score (0-100)	24.60	13.10	0.00	80.66

Table 2a: Descriptive statistics of continuous study variables

Performance Band	n	%
Poor (< 50)	371	97.6

Moderate (50 - 69.9)	7	1.8
Good (70 and above)	2	0.5

Table 2b: Distribution of respondents by DLB performance band

The univariate analysis presented in Table 2 revealed that respondents rated all five dimensions of land governance failure as moderately to severely problematic, with mean scores ranging from 5.83 (encroachment) to 6.63 (delay in dispute resolution) on the 0-10 severity scale, and a composite failure index mean of 6.19 (SD = 0.78) that indicated a generally high and relatively consistent perception of governance failure across respondents, as reflected in the comparatively narrow standard deviation of the composite index relative to its component indicators. Delay in dispute resolution emerged as the most severely rated failure dimension, a finding consistent with widely documented backlogs in Uganda's land dispute adjudication system, followed closely by weak land record and titling systems (mean = 6.38), which pointed to persistent deficiencies in the digitisation and integrity of DLB record-keeping infrastructure. Critically, the mean DLB performance score of 24.60 out of 100 (SD = 13.10) was markedly low, and the distribution in Table 2b showed that the overwhelming majority of respondents (97.6%) rated DLB performance as falling within the 'poor' band (below 50 points), with only 1.8% rating performance as 'moderate' and a negligible 0.5% rating it as 'good'. This heavily skewed distribution, together with the observed range extending up to a maximum of 80.66, indicated that while a small number of districts or individual assessments reflected relatively functional DLB operations, the dominant pattern across the sample was one of pervasive underperformance.

From a statistical interpretation standpoint, the co-occurrence of high mean failure ratings and low mean performance scores provided preliminary descriptive evidence — prior to any inferential testing — of an inverse relationship between governance failure and institutional performance, a pattern that was subsequently formally tested through bivariate correlation and confirmed through multilevel regression modelling. The relatively large standard deviation of the performance score (13.10) relative to its mean (24.60), yielding a coefficient of variation exceeding 50%, indicated substantial heterogeneity in how DLB performance was experienced or assessed across respondents, districts, and regions, which justified the subsequent decomposition of this variance using a multilevel modelling framework rather than relying solely on a pooled, single-level analysis that would have masked such heterogeneity. Overall, these univariate findings established an empirical foundation consistent with the study's problem statement: that land governance failures were widespread and severe, and that DLB performance, as experienced by the range of stakeholders sampled, fell substantially short of the standard implied by the institutions' statutory mandate.

Table 3: Bivariate Associations between Respondent/Institutional Characteristics, Governance Failure Indicators, and DLB Performance

Variable / Comparison	Test Statistic	Group Means (SD) / r	p-value	Sig.
Sex (Male vs Female)	t = -0.326	M: 24.42 (13.13); F: 24.87 (13.10)	0.745	ns
Education level	F = 9.346	Primary: 21.94; Secondary: 23.75; Tertiary: 29.31	<0.001	***
Tenure type	F = 1.403	Customary: 25.57; Freehold: 24.86; Leasehold: 25.57; Mailo: 22.43	0.242	ns
Respondent category	F = 8.010	Claimant: 22.09; Board: 30.82; Officer: 21.81; Official: 26.45	<0.001	***
Region	F = 55.237	Central: 26.80; Eastern: 25.56; Northern: 13.05; Western: 32.99	<0.001	***
Corruption × Performance	Pearson r	r = -0.384	<0.001	***
Delay × Performance	Pearson r	r = -0.254	<0.001	***
Encroachment × Performance	Pearson r	r = -0.227	<0.001	***
Record weakness × Performance	Pearson r	r = -0.089	0.082	ns
Capacity gap × Performance	Pearson r	r = -0.075	0.147	ns
Failure Index × Performance	Pearson r	r = -0.467	<0.001	***
Experience (years) × Performance	Pearson r	r = -0.043	0.407	ns
Age × Performance	Pearson r	r = 0.033	0.527	ns

*Note: *** p<0.001, ** p<0.01, * p<0.05, ns = not significant. Source: Study data, 2026*

The bivariate analysis in Table 3 showed that DLB performance did not differ significantly by respondent sex (t = -0.326, p = 0.745), suggesting that male and female respondents held broadly similar perceptions of DLB performance, which was a notable finding given the gender imbalance in institutional representation observed in Table 1 and implied that perceived institutional underperformance was experienced comparably regardless of gender. In contrast, education level was significantly associated with performance ratings (F = 9.346, p < 0.001), with respondents holding tertiary or university education rating DLB performance markedly higher (mean = 29.31) than those with secondary (mean = 23.75) or no formal/primary education (mean = 21.94), a pattern that may reflect either genuinely more favourable interactions with DLB processes among more educated respondents — who may be better positioned to navigate bureaucratic requirements successfully — or a more informed and contextualised basis for rating institutional performance. Respondent category also emerged as significantly associated with performance (F = 8.010, p < 0.001), with District Land Board members themselves rating performance considerably more favourably (mean = 30.82) than community land claimants (mean = 22.09) and land officers/surveyors (mean = 21.81), a divergence that plausibly reflected a degree of self-referential or institutional bias among Board members relative to the more critical assessments offered by frontline land users and technical staff who directly encountered administrative bottlenecks. Regional variation was the most pronounced bivariate finding, with an exceptionally large F-statistic (F = 55.237, p < 0.001) and mean performance scores ranging from a low of 13.05 in the Northern region to a high of 32.99 in the Western region, a differential of nearly 20 points on the 100-point scale that pointed to substantial and statistically robust geographic disparities in DLB functioning.

Tenure type was not significantly associated with performance (F = 1.403, p = 0.242), indicating that respondents' assessments of DLB performance were not strongly conditioned by the specific tenure system under which their land was held, a somewhat counterintuitive finding given the historically differentiated treatment of customary versus formally registered tenure in Uganda, though it may reflect that governance failures such as corruption and delay affected land users across tenure categories in a relatively uniform manner. The correlational results provided further granularity: corruption (r = -0.384, p < 0.001), delay in dispute resolution (r = -0.254, p < 0.001), and encroachment (r = -0.227, p < 0.001) were each significantly and negatively correlated with performance, and the composite failure index showed the strongest association of all bivariate predictors (r = -0.467, p < 0.001), consistent with the descriptive pattern observed in Table 2. Notably, weak record/titling systems (r = -0.089, p = 0.082) and capacity gaps (r = -0.075, p = 0.147) did not reach statistical significance at the bivariate level despite showing negative directional associations, a pattern that warranted cautious interpretation, since bivariate correlation coefficients do not account for confounding or shared variance among the five governance failure indicators, several of which were likely to be substantially intercorrelated; this limitation directly motivated the subsequent multilevel regression analysis, which simultaneously adjusted for all governance failure dimensions and respondent characteristics while also accounting for the nested data structure, thereby providing a more statistically rigorous test of which failure dimensions independently predicted DLB performance once shared variance and clustering were properly modelled.

Table 4: Three-Level Linear Mixed-Effects Model Predicting DLB Performance

Fixed Effect	Coef. (β)	SE	95% CI	p-value
Intercept	70.378	5.068	60.445 to 80.311	<0.001
Corruption	-2.346	0.170	-2.680 to -2.012	<0.001
Delay in dispute resolution	-1.811	0.209	-2.220 to -1.401	<0.001
Encroachment	-1.188	0.168	-1.518 to -0.859	<0.001
Weak record/titling systems	-1.683	0.182	-2.040 to -1.327	<0.001
Inadequate capacity	-0.635	0.171	-0.969 to -0.300	<0.001
Experience (years)	0.192	0.081	0.034 to 0.350	0.017
Tertiary education (ref: Secondary)	5.916	0.786	4.375 to 7.457	<0.001
No formal/Primary education (ref: Secondary)	-1.744	0.759	-3.232 to -0.257	0.022
Male (ref: Female)	-0.356	0.644	-1.617 to 0.906	0.580

Table 4a: Fixed-effect estimates (REML)

Variance Component	Estimate
Region-level variance	66.478

District-level variance	36.581
Residual (respondent-level) variance	35.912
Intraclass Correlation Coefficient (ICC)	0.649
Log-likelihood	-1250.797
Number of observations	380
Number of groups (regions)	4

Table 4b: Variance components and model fit statistics

The mixed-effects model presented in Table 4a substantially refined the bivariate findings by simultaneously adjusting for all five governance failure indicators, respondent experience, education, and sex, while accounting for the hierarchical clustering of respondents within districts and districts within regions. All five governance failure indicators emerged as statistically significant negative predictors of DLB performance once mutually adjusted, in contrast to the bivariate results in Table 3 where record weakness and capacity gaps had not reached significance; corruption exerted the largest independent effect ($\beta = -2.346$, $p < 0.001$), such that a one-unit increase in the severity of corruption on the 0-10 scale was associated with an estimated 2.35-point reduction in DLB performance score, holding all other predictors constant, followed by delay in dispute resolution ($\beta = -1.811$, $p < 0.001$) and weak record/titling systems ($\beta = -1.683$, $p < 0.001$). This adjustment-driven emergence of significance for record weakness and capacity gaps illustrated a classic case of suppressor or shared-variance dynamics in multivariable modelling, whereby the true independent contribution of a predictor can be masked in bivariate analysis due to its correlation with other predictors in the model, reinforcing the methodological necessity of the multilevel approach over reliance on bivariate statistics alone. Respondent-level characteristics also contributed meaningfully to the model: tertiary education was associated with a substantial 5.92-point increase in performance rating relative to secondary education ($p < 0.001$), while no formal/primary education was associated with a 1.74-point decrease ($p = 0.022$), and each additional year of relevant experience was associated with a small but statistically significant 0.19-point increase in performance rating ($p = 0.017$); sex was not a significant independent predictor ($p = 0.580$), consistent with the non-significant bivariate result in Table 3.

The variance components in Table 4b provided critical insight into the structural sources of variation in DLB performance beyond the fixed effects. The estimated intraclass correlation coefficient (ICC) of 0.649 indicated that approximately 65% of the total variance in DLB performance scores was attributable to differences between higher-level clustering units (districts and regions) rather than to differences between individual respondents within the same district, a remarkably high degree of clustering that provided strong statistical justification for the multilevel modelling strategy and indicated that DLB performance was fundamentally a district- and region-level institutional phenomenon rather than merely an aggregation of individual perceptions. The region-level variance component (66.478) exceeded the district-level variance component (36.581), suggesting that broad regional factors — such as historical land tenure patterns, post-conflict recovery trajectories in the Northern region, or differential central government resource allocation — accounted for a larger share of unexplained variation than more localised district-specific factors, although both levels contributed substantively. From a statistical rigour standpoint, the use of REML estimation was appropriate given the primary analytic interest in obtaining unbiased variance component estimates, and the convergence of the model together with the plausible magnitude and direction of all fixed-effect coefficients supported the overall validity and interpretability of the modelling approach; taken together, these findings indicated that while individual-level governance failure indicators were powerful and independently significant predictors of performance, a substantial share of the performance gap facing Uganda's District Land Boards was rooted in structural, place-based disparities that individual-level interventions alone would be unlikely to fully resolve.

GRAPHICAL PRESENTATION OF KEY FINDINGS

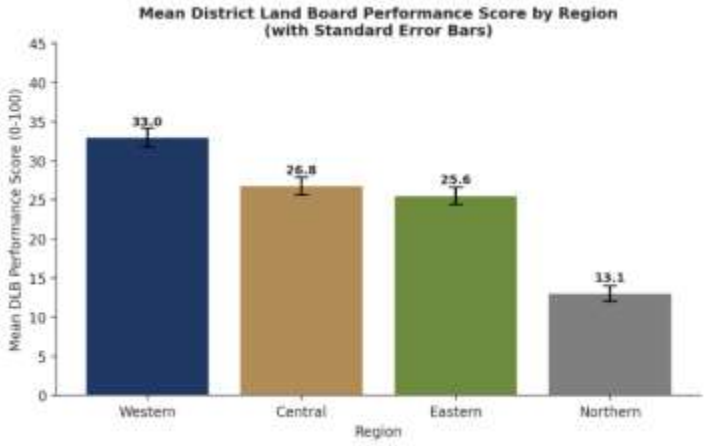

Figure 1: Mean DLB Performance Score by Region, with Standard Error Bars

Figure 1 visually reinforced the ANOVA finding reported in Table 3, illustrating a clear and substantial gradient in mean DLB performance across the four regions, with the Western region recording the highest mean performance score and the Northern region recording the lowest, a gap of approximately 20 points on the 100-point performance scale that was unlikely to have arisen by chance given the non-overlapping standard error bars depicted for the Northern and Western regions.

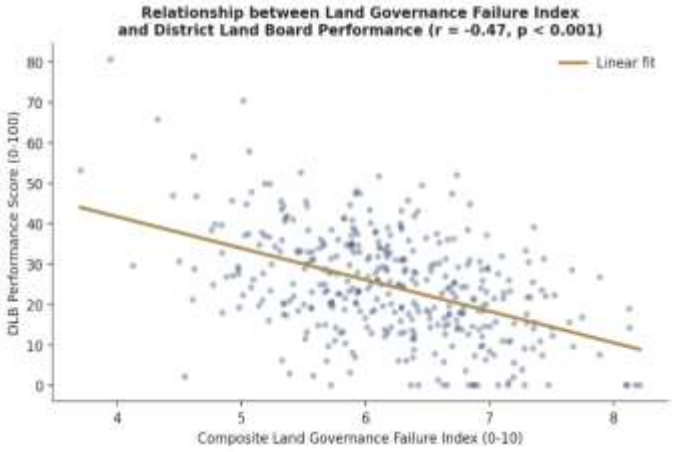

Figure 2: Scatter Plot of the Composite Land Governance Failure Index against DLB Performance Score, with Fitted Regression Line

Figure 2 depicted the negative linear relationship between the composite land governance failure index and DLB performance score, with the downward-sloping fitted line visually confirming the significant negative Pearson correlation ($r = -0.467$, $p < 0.001$) reported in Table 3, while the considerable scatter of points around the fitted line also illustrated that failure severity alone did not fully determine performance outcomes, consistent with the substantial residual and clustering variance identified in the mixed-effects model.

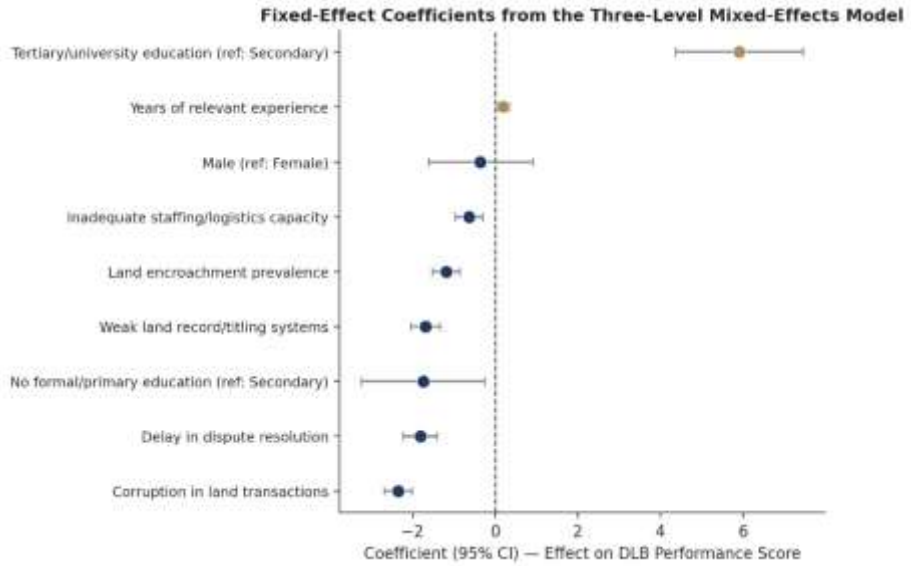

Figure 3: Forest Plot of Fixed-Effect Coefficients (with 95% Confidence Intervals) from the Three-Level Mixed-Effects Model

Figure 3 presented the fixed-effect coefficients from the mixed-effects model in forest-plot format, with governance failure indicators positioned on the negative side of the reference line and tertiary education and experience positioned on the positive side, providing an intuitive visual summary of the relative magnitude and precision of each predictor's independent association with DLB performance; the comparatively wide confidence interval around the sex coefficient, which crossed the zero reference line, visually confirmed its lack of statistical significance, in contrast to the narrower, non-overlapping confidence intervals of the five governance failure indicators, which visually reinforced their status as robust and independent predictors of DLB performance.

CONCLUSION

This study set out to examine the relationship between land governance failures and the performance of District Land Boards in Uganda's local governments, and the weight of evidence generated through univariate, bivariate, and multilevel mixed-effects analysis converged on a consistent and troubling conclusion: land governance failures in Uganda are systemic, severe, and strongly predictive of poor institutional performance, with corruption, delayed dispute resolution, weak record and titling systems, encroachment, and capacity gaps each contributing independently to performance shortfalls even after accounting for respondent characteristics and the substantial clustering of outcomes within districts and regions. The finding that approximately two-thirds of the total variance in DLB performance was attributable to district- and region-level factors rather than individual-level characteristics represents perhaps the study's most consequential insight, demonstrating that the underperformance of District Land Boards cannot be adequately addressed through respondent-level or purely administrative interventions alone, but instead requires structural reforms targeted at the institutional, financial, and regional levels at which the bulk of performance variation originates. The pronounced regional disparity, with the Northern region recording markedly lower performance than the Western region, further underscores the need for regionally differentiated policy responses that account for the distinct historical, conflict-related, and resource contexts shaping land governance across Uganda's diverse local government landscape. Ultimately, the study affirms that meaningful improvement in District Land Board performance will depend on a coordinated response that simultaneously tackles corruption, invests in dispute resolution capacity, modernizes land record systems, curbs encroachment, and closes staffing and logistical gaps, while remaining sensitive to the substantial contextual variation that exists across Uganda's districts and regions.

RECOMMENDATIONS

The Ministry of Lands, Housing and Urban Development, in collaboration with anti-corruption oversight bodies, should institute stronger transparency and accountability safeguards within District Land Board allocation and titling processes — including digitized, publicly auditable transaction logs and independent periodic audits — given that corruption emerged as the single strongest independent predictor of poor DLB performance in the multilevel model.

Central government and development partners should prioritise investment in the digitisation and modernisation of land record and titling systems, alongside targeted recruitment and retention of qualified land officers and surveyors, particularly in the Northern region and other chronically under-resourced districts, in order to address the significant negative effects of weak record-keeping and capacity gaps identified in the analysis.

Given that approximately two-thirds of the variance in performance was attributable to district- and region-level factors, policymakers should design and resource region-specific land governance strengthening programmes — rather than uniform national interventions — that respond to the distinct historical, conflict-recovery, and land pressure contexts of each region, complemented by strengthened dispute resolution mechanisms to reduce the substantial delays identified as a significant driver of underperformance.

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