

Bivariate Predictor Screening for Teacher Retention Intention in Urban Public Schools Under Kenya's Cross-County Deployment Policy: Evidence from Bungoma County

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Abstract- Teacher retention in urban public schools remains a persistent challenge in Kenya, driven in part by the cross-county deployment policy of the Teachers Service Commission (TSC). Before an individual-level predictive model of retention intention can be estimated, the field of candidate predictors must be reduced to those carrying genuine signal. This paper reports the bivariate screening stage of a larger modelling study. Fifteen candidate predictors drawn from three theoretical domains—teacher characteristics (Human Capital Theory), school factors (Institutional Theory), and policy variables (Push–Pull Theory)—were screened against a binary measure of teacher retention intention using data from 325 teachers in three urban sub-counties of Bungoma County (Bungoma Town, Webuye, and Kimilili). Each predictor was tested individually with Pearson chi-square tests for categorical variables, Welch independent-samples t-tests for ordinal and continuous variables, and simple binary logistic regression for unadjusted odds ratios; effect sizes were quantified with Cramér's V and Cohen's d . Applying the liberal retention threshold of $p \leq 0.25$, eleven of the fifteen candidate predictors were retained. The four non-retained predictors were all categorical teacher characteristics (Gender, Marital Status, Subject Specialisation, and School Level), each with negligible effect size ($V \leq 0.069$). The strongest associations were policy- and workload-driven: Teaching Workload ($d = 1.190$), Housing Adequacy ($d = 1.041$), and Transfer Application Status ($V = 0.513$; unadjusted odds ratio = 9.78). The three domains formed a clear ordering, with policy variables strongest, school factors intermediate, and teacher characteristics weakest. The retained set yields an events-per-variable ratio of 16.5, confirming that multivariate estimation can proceed without overfitting. The screening identifies housing inadequacy, geographic displacement, and heavy workload as the candidate risk factors most deserving of policy attention.

Keywords: Teacher Retention Intention, Bivariate Screening, Binary Logistic Regression, Cross-County Deployment

I. INTRODUCTION

Teacher attrition and the intention that precedes it are enduring concerns for education systems worldwide, because the loss of teachers disrupts instructional continuity, imposes recurrent recruitment and induction costs, and depresses learner outcomes [1].

The problem is especially acute in Sub-Saharan Africa, where high pupil–teacher ratios, difficult working conditions, and limited career progression combine to erode job satisfaction and inflate turnover intention [2, 3].

Because behavioural intention is the most proximal antecedent of actual turnover, retention intention is widely used as the outcome of interest in workforce studies of the teaching profession [1, 4].

In Kenya, teacher deployment is governed centrally by the Teachers Service Commission (TSC). Under a cross-county deployment framework, teachers may be posted to any county irrespective of their country of origin [5].

Teachers deployed to urban postings far from home frequently seek reassignment soon after arrival, generating a cycle of turnover that burdens school management and undermines teaching continuity [4, 5].

Regional evidence indicates that the drivers of teacher turnover intention are multi-dimensional,

spanning individual attributes, the quality of the school environment, and the policy circumstances of a posting [4, 6, 7].

Existing studies in Kenya and the wider region have largely examined these drivers descriptively or through single-factor analyses, establishing which conditions are associated with dissatisfaction and turnover intention [2, 4, 8].

What they have not produced is an individual-level predictive tool that classifies teachers by their probability of non-retention using observable administrative data. Building such a tool—a binary logistic regression model—requires a disciplined preliminary stage in which the pool of candidate predictors is screened and reduced to those that carry genuine bivariate signal [9].

This paper reports that screening stage. Its objective is to screen the bivariate associations between fifteen candidate predictors and teacher retention intention among urban public-school teachers in Bungoma County, as a preliminary step to multivariate model building, and to identify and rank the candidate risk factors that should enter the predictive model.

II. STATEMENT OF THE PROBLEM

Urban public schools in Bungoma County operate under a cross-county deployment policy that posts many teachers far from their home counties. A substantial share of these teachers do not intend to remain at their postings: in the present sample, more than half expressed non-retention intention.

The prevailing administrative response is reactive. Education officers engage a teacher only after a transfer application has been filed, at which point the decision to leave has effectively been made, the administrative cost of processing the application is high, and the probability of successful retention is low.

There is at present no proactive instrument that allows administrators to identify teachers at elevated risk of non-retention before they apply to leave, and no prior study has screened and ranked the predictors that such an instrument would require.

The consequences of this gap are concrete. Continual transfer-seeking and turnover fragment teaching teams, interrupt syllabus coverage, and impose repeated induction costs on receiving schools [1, 4].

A workforce a large fraction of which is not invested in its posting is associated with lower instructional quality, weaker school cohesion, and poorer learner outcomes [4, 8]. Because interventions are triggered only after teachers signal exit, scarce administrative resources are spent on the least recoverable cases.

Absent an evidence-based screening of candidate predictors, education managers lack even the vetted variable set needed to build a predictive early-warning model. This study addresses that deficiency by systematically screening fifteen candidate predictors of teacher retention intention and determining, for each, whether it carries sufficient bivariate association to enter a multivariate predictive model.

III. THEORETICAL FRAMEWORK

The candidate predictors were drawn from three complementary theoretical perspectives, each supplying a distinct class of variables.

3.1 Human Capital Theory.

Developed by Schultz [10] and extended by Becker [11], Human Capital Theory frames retention as a function of accumulated career investment and opportunity cost: teachers who are older, more experienced, and more qualified have invested more in their situation, face higher switching costs, and are predicted to show stronger retention intention.

Recent African evidence that demographic and career-stage attributes act as antecedents of turnover intention is consistent with this account [2, 6]. This domain supplies the teacher-characteristic predictors.

3.2 Institutional Theory.

Institutional Theory examines how the social, normative, and regulatory environment of an organisation shapes the behaviour of its members [12, 13].

Applied to retention, it predicts that the quality of the school environment—adequate infrastructure, supportive administration, a collegial professional community, and a manageable workload—conditions a teacher's willingness to remain, a prediction supported by studies that link school-based factors and teaching resources to teacher outcomes in Kenya [4, 8]. This domain supplies the school-factor predictors.

3.3 Push–Pull Theory.

Lee's theory of migration [14] conceptualises movement as the product of push factors at the origin and pull factors at the destination. Applied to cross-county deployment, teachers are pushed from a posting by adverse policy conditions—inadequate housing allowances, displacement from their home county, and a history of transfer-seeking—and pulled toward home [5, 7].

This domain supplies the policy-variable predictors, which are the most direct behavioural indicators of intent to leave.

Together the three frameworks motivate a candidate set spanning who the teacher is, where they work, and the policy circumstances of their posting.

IV. LITERATURE REVIEW

4.1 Teacher characteristics and retention intention

Studies of individual-level antecedents report mixed findings. Muhangi [6], examining secondary school teachers in Mbarara District, Uganda, treated demographic attributes as antecedents of turnover intention and found their influence to be modest relative to workplace conditions.

Nyamubi [2], analysing determinants of job satisfaction among Tanzanian secondary school teachers, likewise found that career-stage and experience-related factors mattered more for satisfaction—and hence retention—than fixed demographic categories.

The regional pattern suggests that, where teacher-level signal exists, it operates through ordinal career-stage variables such as age and experience rather than

through categorical group membership, consistent with Human Capital Theory [10, 11].

4.2 School factors and retention intention

A consistent body of evidence links the quality of the institutional environment to teacher retention. Achieng Ayall, Wambura and Simatwa [4], studying public secondary schools in Rachuonyo North Sub-County, Kenya, found that school-based factors—including administrative support and working conditions—were significantly associated with teacher turnover intention. Leley, Simiyu and Njoroge [8] reported that the adequacy of teaching and learning resources shaped teacher job satisfaction and, by extension, retention in Uasin Gishu County, Kenya.

At the psychological level, Madigan and Kim's [1] meta-analysis established that burnout—strongly driven by excessive workload—and low job satisfaction together explain a substantial share of variance in teachers' intentions to quit, with workload-related exhaustion the dominant component. These findings motivate the inclusion of infrastructure quality, administrative support, professional community, and teaching workload as candidate school-factor predictors.

4.3 Policy variables and retention intention

The policy environment of cross-county deployment is central to the Kenyan case. The TSC's own reporting documents large volumes of transfer applications from teachers seeking to return to their home counties, with housing and distance from home recurrently cited [5].

Odongo, Kobusingye and Kibanja [7], examining context-based determinants of turnover intention among in-service teachers in Lira City, Uganda, found that structural and contextual conditions of the posting exerted strong effects on intent to leave.

Opoku, Jiya, Kanyinji and Nketsia [3] similarly reported that placement conditions, including rural and displaced postings, depressed retention and satisfaction among primary teachers in Malawi.

These studies support treating housing adequacy, distance from home county, transfer history, and

transfer application status as candidate policy predictors under a Push–Pull framing [14].

4.4 Methodological gap

Across the reviewed literature, associations between predictors and retention outcomes are typically established descriptively, through correlation, or through single-method significance testing, and few studies proceed to a validated individual-level predictive model.

Fewer still document a transparent predictor-screening stage—the point at which a large candidate set is reduced to an estimable one before multivariate modelling. This omission matters: entering an unscreened candidate set into a logistic model wastes degrees of freedom, inflates standard errors, and risks overfitting when candidate predictors are numerous relative to events [9, 17].

The present study addresses this gap by applying a structured bivariate screening protocol to fifteen theoretically grounded candidate predictors, reporting significance tests, effect sizes, and unadjusted odds ratios for each, and ranking them across the three theoretical domains.

V. RESEARCH METHODOLOGY

5.1 Design, population, and sample

A quantitative cross-sectional survey design was adopted. The target population comprised teachers in urban public schools in Bungoma County, Kenya. Data were collected from teachers in three urban sub-counties—Bungoma Town, Webuye, and Kimilili—through a structured, self-administered questionnaire.

Of the questionnaires distributed, 325 were returned fully completed and met the inclusion criterion (fewer than 10% of items unanswered), yielding an overall response rate of 75.6%, which exceeds the conventional adequacy benchmark for survey research. Data collection ran over four weeks during the second term of the 2025/2026 academic year.

Ethical approval was obtained from the Kibabii University School of Graduate Studies and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI); participation was voluntary and anonymous.

5.2 Outcome variable

Teacher retention intention was measured with the single item, “Do you intend to remain at your current school posting for the next three years?”, answered on a five-point scale (Definitely Yes, Probably Yes, Uncertain, Probably No, Definitely No).

For analysis the item was dichotomised: responses of Definitely Yes or Probably Yes were coded 1 (intends to stay) and responses of Uncertain, Probably No, or Definitely No were coded 0 (does not intend to stay), following the convention of Hosmer et al. [9]. Of the 325 respondents, 143 (44.0%) intended to stay and 182 (56.0%) did not; the 182 non-retention cases constitute the “events” for events-per-variable calculations.

5.3 Candidate predictors

Fifteen candidate predictors were organised into three theoretical domains (Table 1). Teacher characteristics comprised four categorical variables (Gender, Marital Status, Subject Specialisation, School Level) and three ordinal variables (Age, Academic Qualifications, Teaching Experience).

School factors comprised four Likert composite subscales on a 1–5 scale (Infrastructure Quality, Administrative Support, Professional Community, Teaching Workload). Policy variables comprised one Likert composite (Housing Adequacy, 1–5), two ordinal variables (Distance from Home County, 1–4; Transfer History, 0–3), and one binary categorical variable (Transfer Application Status). All Likert composites achieved acceptable internal consistency (Cronbach’s $\alpha \geq 0.79$).

The fifteen candidate predictors by theoretical domain and measurement type

Domain (theory)	Predictor	Measurement
Teacher characteristics (Human Capital)	Gender	Categorical (2)
	Marital Status	Categorical (3)
	Subject Specialisation	Categorical (5)
	School Level	Categorical (2)
	Age	Ordinal
	Academic Qualifications	Ordinal
	Teaching Experience	Ordinal
School factors (Institutional)	Infrastructure Quality	Likert composite (1–5)
	Administrative Support	Likert composite (1–5)
	Professional Community	Likert composite (1–5)
	Teaching Workload	Likert composite (1–5)
Policy variables (Push–Pull)	Housing Adequacy	Likert composite (1–5)
	Distance from Home County	Ordinal (1–4)
	Transfer History	Ordinal (0–3)
	Transfer Application Status	Categorical (binary)

5.4 Screening procedure

Each candidate predictor was tested individually against the binary outcome using the method appropriate to its measurement scale. Pearson chi-square tests of independence were applied to categorical predictors; the approximation was valid because all expected cell frequencies exceeded five [16].

Independent-samples t-tests were applied to ordinal and continuous predictors, comparing the mean predictor score between the intends-to-stay group ($n_1 = 143$) and the does-not-intend group ($n_0 = 182$); Levene's test checked the equality-of-variances assumption, and Welch's degrees of freedom were applied throughout.

Simple (single-predictor) binary logistic regression was fitted to each predictor to obtain the unadjusted odds ratio for the outcome $Y = 0$ (does not intend to stay).

Effect sizes were computed for all predictors to complement the p-values and rank predictors by magnitude of association. Cramér's V was used for categorical predictors,

$$V = \sqrt{(\chi^2 / (n \min(r-1, c-1)))},$$

and Cohen's d for ordinal and continuous predictors,

$$d = |\bar{x}_1 - \bar{x}_0| / s_p,$$

where s_p is the pooled standard deviation [15]. Effect sizes were interpreted using Cohen's benchmarks: for V, small ≥ 0.10 , medium ≥ 0.30 , large ≥ 0.50 ; for d, small ≥ 0.20 , medium ≥ 0.50 , large ≥ 0.80 ; values below the small threshold were classified as negligible.

A predictor was retained for entry into the multivariate model if its bivariate p-value was at or below 0.25, the liberal threshold recommended by Hosmer, Lemeshow and Sturdivant [9] to guard against prematurely excluding predictors whose effects emerge only after adjustment. All analyses were conducted in R [18].

VI. FINDINGS

6.1 Categorical Predictors

The screening began with the five categorical predictors: the four categorical teacher characteristics (Gender, Marital Status, Subject Specialisation, and School Level) and the single categorical policy variable (Transfer Application Status).

Each was tested against the binary retention outcome using a Pearson chi-square test of independence, with the retention decision made on the $p \leq 0.25$ criterion. Table 2 presents the test statistics, degrees of

freedom, p-values, effect sizes, and retention decisions.

Chi-square tests of independence for all categorical predictors

Domain	Variable	χ^2	df	p	Cramér's V	Decision
Teacher char.	Gender	1.20	1	0.273	0.061	Not retained
	Marital Status	1.57	2	0.456	0.069	Not retained
	Subject Specialisation	1.43	4	0.839	0.066	Not retained
	School Level	0.22	1	0.642	0.026	Not retained
Policy variable	Transfer Application Status	85.49	1	< 0.001	0.513	Retained

Retention criterion: $p \leq 0.25$. For Transfer Application Status, $\phi = V = 0.513$ and the unadjusted odds ratio is 9.78.

As shown in Table 2, the four teacher-characteristic variables all returned small chi-square statistics and high p-values: Gender, $\chi^2 (1) = 1.20$, $p = 0.273$, $V = 0.061$; Marital Status, $\chi^2 (2) = 1.57$, $p = 0.456$, $V = 0.069$; Subject Specialisation, $\chi^2 (4) = 1.43$, $p = 0.839$, $V = 0.066$; and School Level, $\chi^2 (1) = 0.22$, $p = 0.642$, $V = 0.026$.

Transfer Application Status, by contrast, produced a large and highly significant statistic, $\chi^2 (1) = 85.49$, $p < 0.001$, $\phi = 0.513$. Of the 182 teachers with a pending application, 143 (78.6%) did not intend to stay, whereas of the 143 teachers without a pending application only 39 (27.3%) did not—a difference of 51.3 percentage points, corresponding to an unadjusted odds ratio of 9.78.

None of the four demographic teacher characteristics met the retention threshold, and all four carried negligible effect sizes, so each was excluded from further modelling; the very small effect sizes confirm that these variables have no meaningful association with retention intention.

Transfer Application Status, on the other hand, was retained as the strongest categorical predictor in the study, since a teacher with a pending application had roughly ten times the odds of not intending to stay compared with a teacher without one.

This pattern indicates that group membership on fixed demographic variables carries no meaningful bivariate signal for retention intention, and that whatever teacher-level signal exists must operate through career-stage variables rather than demography—an expectation consistent with Human Capital Theory [10, 11] and with regional evidence that career stage outweighs demographic category in shaping turnover intention [2, 6].

The dominance of Transfer Application Status aligns with Push–Pull Theory [14], in that a filed transfer application is itself a behavioural expression of the intention being modelled; this explains both its magnitude and the need to interpret its predictive value with caution given its proximity to the outcome [7].

6.2 Ordinal and Continuous Predictors

The ten ordinal and continuous predictors—the three ordinal teacher characteristics, the four school-factor Likert composites, one policy Likert composite, and the two ordinal policy variables—were screened using Welch independent-samples t-tests comparing the mean predictor score of the intends-to-stay group ($n_1 = 143$) with that of the does-not-intend group ($n_0 = 182$). Table 3 presents the group means and standard deviations, t-statistics, p-values, and retention decisions.

Independent-samples t-tests for ordinal and continuous predictors ($n_1 = 143$, $n_0 = 182$)

Domain	Variable	$\bar{x}_1$ (s_1)	$\bar{x}_0$ (s_0)	t	p	Decision
Teacher char.	Age	2.41 (0.90)	2.10 (0.81)	3.21	0.001	Retained
	Academic Qualifications	2.81 (0.77)	2.68 (0.81)	1.48	0.140	Retained
	Teaching Experience	2.79 (1.14)	2.42 (1.05)	3.03	0.003	Retained
School factors	Infrastructure Quality	3.12 (0.68)	2.64 (0.72)	6.15	< 0.001	Retained
	Administrative Support	3.41 (0.62)	2.91 (0.68)	6.91	< 0.001	Retained
	Professional Community	3.68 (0.57)	3.30 (0.60)	5.83	< 0.001	Retained
	Teaching Workload	3.41 (0.71)	4.21 (0.64)	-10.53	< 0.001	Retained
Policy variables	Housing Adequacy	2.68 (0.79)	1.84 (0.82)	9.36	< 0.001	Retained
	Distance from Home County	2.06 (0.82)	2.59 (0.88)	-5.62	< 0.001	Retained
	Transfer History	0.82 (0.88)	1.21 (0.91)	-3.97	< 0.001	Retained

$\bar{x}_1$, s_1 : intends-to-stay group; $\bar{x}_0$, s_0 : does-not-intend group. Welch $df \approx 323$. A negative t indicates the does-not-intend group has the higher mean (push-direction effect). Criterion: $p \leq 0.25$.

As Table 3 shows, among the teacher characteristics the intends-to-stay group scored higher on Age (2.41 vs. 2.10; $t = 3.21$, $p = 0.001$), Academic Qualifications (2.81 vs. 2.68; $t = 1.48$, $p = 0.140$), and Teaching Experience (2.79 vs. 2.42; $t = 3.03$, $p = 0.003$). Among the school factors, the intends-to-stay group scored higher on Infrastructure Quality (3.12 vs. 2.64; $t = 6.15$), Administrative Support (3.41 vs. 2.91; $t = 6.91$), and Professional Community (3.68 vs. 3.30; $t = 5.83$), and lower on Teaching Workload (3.41 vs. 4.21; $t = -10.53$). Among the policy variables, the intends-to-stay group scored higher on Housing Adequacy (2.68 vs. 1.84; $t = 9.36$) and lower on Distance from Home County (2.06 vs. 2.59; $t = -5.62$) and Transfer History (0.82 vs. 1.21; $t = -3.97$). All ten predictors met the retention criterion: nine were significant at $p < 0.001$, and the tenth, Academic Qualifications, cleared the liberal $p \leq 0.25$ threshold.

The direction of every difference matched theoretical expectation. Four school and policy conditions behaved as pull factors, with higher scores among teachers intending to stay: better infrastructure, stronger administrative support, a more collegial professional community, and more adequate housing.

Three conditions behaved as push factors, with higher scores among teachers not intending to stay: heavier teaching workload, greater distance from the

home county, and a longer transfer history. Teaching Workload returned the largest absolute t-statistic of any predictor in the study, marking it as the most pronounced single condition separating the two intention groups. All ten variables were therefore retained for multivariate modelling.

The positive association of age and experience with retention intention supports the Human Capital premise that career-invested teachers face higher switching costs and are more likely to remain [10, 11].

The pull-direction effects of infrastructure, administrative support, and professional community are consistent with Institutional Theory's claim that the quality of the organisational environment conditions members' willingness to stay [12, 13], and agree with Kenyan evidence linking school-based factors and teaching resources to teacher outcomes [4, 8].

The prominence of Teaching Workload is in line with meta-analytic evidence that workload-driven burnout is a leading cause of quitting intention [1], while the push-direction effects of distance and transfer history reflect the structural displacement described by Push–Pull Theory [7, 14].

6.3 Summary of Bivariate Screening

The significance tests, effect sizes, and unadjusted odds ratios for all fifteen candidate predictors are brought together in a single table, grouped by theoretical domain, with the retention decision for each. Table 4 presents this summary.

Summary of bivariate screening: all fifteen candidate predictors

Variable	Dom.	Test statistic	p	Effect size	OR_SLR	Decision
<i>Teacher characteristics</i>						
Gender	TC	$\chi^2(1) = 1.20$	0.273	V = 0.061	—	Not retained
Marital Status	TC	$\chi^2(2) = 1.57$	0.456	V = 0.069	—	Not retained
Subject Specialisation	TC	$\chi^2(4) = 1.43$	0.839	V = 0.066	—	Not retained
School Level	TC	$\chi^2(1) = 0.22$	0.642	V = 0.026	—	Not retained
Age	TC	t(323) = 3.21	0.001	d = 0.365	0.638	Retained
Academic Qualifications	TC	t(323) = 1.48	0.140	d = 0.164	0.819	Retained
Teaching Experience	TC	t(323) = 3.03	0.003	d = 0.340	0.670	Retained
<i>School factors</i>						
Infrastructure Quality	SF	t(323) = 6.15	< 0.001	d = 0.684	0.320	Retained
Administrative Support	SF	t(323) = 6.91	< 0.001	d = 0.765	0.267	Retained
Professional Community	SF	t(323) = 5.83	< 0.001	d = 0.648	0.336	Retained
Teaching Workload	SF	t(323) = -10.53	< 0.001	d = 1.190	6.111	Retained
<i>Policy variables</i>						
Housing Adequacy	PV	t(323) = 9.36	< 0.001	d = 1.041	0.175	Retained
Distance from Home County	PV	t(323) = -5.62	< 0.001	d = 0.621	2.484	Retained
Transfer History	PV	t(323) = -3.97	< 0.001	d = 0.435	2.075	Retained
Transfer Application Status	PV	$\chi^2(1) = 85.49$	< 0.001	V = 0.513	9.779	Retained

TC = Teacher Characteristics; SF = School Factors; PV = Policy Variables. Effect size: Cramér's V for categorical, Cohen's d for ordinal/continuous. OR_SLR = unadjusted odds ratio from simple logistic regression for Y = 0 (does not intend to stay); — = predictor not retained, no model fitted.

As Table 4 records, eleven of the fifteen predictors were retained and four were not; the four non-retained predictors were exactly the categorical teacher characteristics, each with a negligible Cramér's V between 0.026 and 0.069. Among the retained predictors, the three largest effects were Teaching Workload (d = 1.190), Housing Adequacy (d = 1.041), and Transfer Application Status (V = 0.513), all in the large range.

The four school factors fell in the medium range (d = 0.648 to 0.765), and the retained teacher characteristics were weakest, ranging from negligible for Academic Qualifications (d = 0.164) to small for Age (d = 0.365). The unadjusted odds ratios spanned from 0.175 for Housing Adequacy to 9.779 for Transfer Application Status.

The retained set spans all three theoretical domains—three teacher characteristics, four school factors, and four policy variables—so each perspective contributes bivariate signal even as the policy domain clearly dominates in magnitude. Because none of the retained variables requires dummy coding, the eleven predictors generate eleven model parameters; with 182 events this gives an events-per-variable ratio of $182/11 = 16.5$, well above the minimum of ten, so the retained pool can be estimated in a multivariate logistic model without overfitting [17].

The results show a clear ordering across the three domains: policy variables are the strongest predictors, school factors fall in the middle, and teacher characteristics are the weakest.

This ordering matches the prediction of Push–Pull Theory, since the largest effects all correspond to push conditions created by the deployment environment—inadequate housing, geographic displacement, and transfer-seeking behaviour [7, 14]—followed by workload-driven school conditions [1] and, least influential, fixed teacher attributes [6].

Two cautions temper these bivariate results. First, all associations are unadjusted, so some are likely to attenuate under multivariate adjustment; Academic Qualifications, retained only on the liberal criterion and carrying a negligible effect, is the most probable casualty of subsequent backward elimination.

Second, retention intention is a self-reported, cross-sectional proxy for subsequent turnover behaviour, so the retained predictors should ultimately be validated against observed attrition.

VII. CONCLUSIONS

Screening fifteen theoretically grounded candidate predictors of teacher retention intention against a binary outcome for 325 urban public-school teachers in Bungoma County retained eleven predictors and excluded four—all categorical teacher characteristics with negligible effect sizes.

The retained set spans all three theoretical domains and yields a safe events-per-variable ratio of 16.5, confirming that the pool is estimable in a multivariate logistic model without overfitting. The three domains formed a clear ordering: policy variables, led by Teaching Workload, Housing Adequacy, and Transfer Application Status, showed the strongest bivariate associations; school factors were intermediate; and teacher characteristics were weakest.

The screening prepares the vetted predictor pool needed for the model-estimation stage and, at the same time, identifies housing inadequacy, geographic displacement, heavy workload, and transfer-seeking behaviour as the candidate risk factors most strongly associated with non-retention intention.

Two cautions attach: all associations reported are bivariate and unadjusted, so some—notably Academic Qualifications, retained only on the liberal criterion—may attenuate under multivariate adjustment; and retention intention is a self-reported, cross-sectional proxy for subsequent turnover behaviour.

VIII. RECOMMENDATIONS

Arising from the screening, the study makes a single principal recommendation: the eleven retained predictors should be adopted as the vetted variable set for building the multivariate binary logistic regression model of teacher retention intention, with priority given to the dominant policy-domain conditions—housing adequacy, distance from home county, transfer history, and transfer application status—together with teaching workload.

Because these variables are already recorded, or can readily be recorded, within county education offices, the Teachers Service Commission and county education administrators should build them into a routine retention-risk screening tool that flags teachers at elevated risk of non-retention before a transfer application is filed, so that early, targeted intervention can address the conditions that most strongly drive non-retention intention.

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