The Mediating Role of Student Motivation in the Extracurricular Participation and Academic Performance Relationship in Rural Secondary Schools of Kiruhura District, Southwest Uganda

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ABSTRACT

While contemporary educational research documents bivariate relationships between extracurricular activities and student academic achievement, empirical insights regarding the underlying psychological mechanisms remain sparse. This study assessed the mediating role of student motivation in the relationship between extracurricular participation and academic performance among students in government-aided secondary schools in Kiruhura District, southwest Uganda. Grounded in Situated Expectancy-Value Theory and Self-Determination Theory, the study adopted a concurrent triangulation mixed-methods design. Quantitative survey data was collected from 115 teachers, while qualitative insights were simultaneously collected through semi-structured key informant interviews with 7 headteachers. Ethical clearance was obtained from Ibanda University Internal Research Ethics committee (IU-2026-019) in July 2026. Quantitative mediation analyses utilizing Baron and Kenny's four-step regression framework, corroborated by the Sobel test and 5,000 resample bootstrapping, reveal that student motivation fully mediates the extracurricular–performance relationship. Extracurricular participation significantly predicts academic performance (total effect $c = 0.271$, $p = .003$) and student motivation ($a = 0.389$, $p < .001$). However, when motivation was controlled, the direct effect became non-significant ($c' = 0.089$, $p = .341$), with the indirect effect accounting for 67.2% of the total effect ($z = 3.50$, $p < .001$, 95% CI [0.082, 0.282]). Qualitative findings triangulated with statistical results confirm that headteachers perceive co-curricular programs not as direct academic instruction, but as psychological catalysts that relieve stress, foster concentration, and boost self-efficacy. Supported by extended literature, this paper argues that extra-curricular activities enhance student academic performance by igniting student motivational drivers.

Keywords: Student motivation mediation; Situated Expectancy-Value Theory; Extracurricular activities; Secondary education; Uganda.

INTRODUCTION

The contemporary discourse on educational quality and adolescent development has increasingly shifted from an isolated focus on cognitive instruction to a holistic framework emphasizing non-cognitive skills, emotional well-being, and institutional connectedness (DiMarco, 2025; Akkus & Cinkir, 2021). Within secondary education, extracurricular activities (ECAs) including athletics, debating societies, performing arts, and academic clubs are widely championed as vital developmental contexts that foster leadership, resilience, and teamwork (Christensen et al., 2021; Shaffer, 2019). However, in resource-constrained educational settings across Sub-Saharan Africa and in rural public secondary schools in Uganda in particular, the pathways through which these non-academic engagements translate into academic performance remain empirically contested (Amandu et al., 2016).

While studies continue to highlight positive associations between extracurricular participation and student academic performance - attendance, and completion rates (DiMarco, 2025; Christensen et al., 2021), findings in developing countries are moderated by severe institutional realities. In rural Ugandan districts such as Kiruhura, public secondary schools contend with chronic underfunding, textbook shortages, overcrowded classrooms, long travel distances, and relentless national examination pressures imposed by the Uganda National Examinations Board (UNEB) (Ssekamwa & Lugumba, 2001; Kiruhura District Local Government, 2023; Nile Post, 2025). In these environments, extracurricular activities are vulnerable to marginalization or are perceived by educators and parents as disturbances from formal academic revision.

Consequently, merely establishing bivariate correlations between extra-curricular activities participation and student academic performance yields an incomplete understanding. Contemporary educational scholarship emphasizes that the association of extracurricular activities is neither automatic nor direct; rather, it operates through underlying psychological and behavioral mechanisms (Feldman & Matjasko, 2005). At the core of this mechanism lies student motivation (Shaffer, 2019). While prior research asserts that active student involvement in school activities enhances enthusiasm and discipline, empirical inquiry explicitly triangulating quantitative statistical models with qualitative administrative insights to test whether motivation statistically mediates this relationship remain unexplored in East African secondary education. This study addresses this gap by examining the mediating role of student motivation in the relationship between extracurricular participation and academic performance among students in government-aided secondary schools in Kiruhura District, Uganda.

To theoretically ground the assessment, the study integrates two frameworks of Situated Expectancy-Value Theory (SEVT) (Eccles & Wigfield, 2020; Jackson et al., 2025) and Self-Determination Theory (SDT) (Deci & Ryan, 1985). SEVT posits that an individual's achievement-related choices, persistence, and performance are proximally governed by two cognitive constructs - their expectations of success (perceived competence and self-efficacy) and the subjective task values they attach to an activity (comprising intrinsic enjoyment, attainment value, utility value, and perceived costs such as effort and time) (Flake et al., 2015; Gaspard et al., 2020; Hampton, 2025). The SEVT emphasizes that these motivational beliefs are dynamically situated within and shaped by the immediate sociocultural and institutional environment (Eccles & Wigfield, 2020; Jackson et al., 2025). The SDT complements this framework by asserting that fulfilling basic psychological needs for autonomy, competence, and relatedness through engaging activities fosters high levels of intrinsic motivation (Deci & Ryan, 1985).

Synthesizing two contemporary theoretical perspectives, this study addresses the empirical problem that student participation in extracurricular activities does not directly enhance cognitive academic performance (Winner et al., 2013). To resolve this, the purpose of this study was to assess how extra-curricular activities function as a psychological catalyst that satisfies basic psychological needs, elevates performance expectations, and enhances task values mechanisms that subsequently drive academic persistence, classroom attendance, and superior academic performance (Fredricks & Eccles, 2006). Following ethical review and clearance obtained in July 2026 from the Ibanda University Internal Research Ethics Committee under approval number IU-92026-019, the study provides triangulated empirical evidence to examine this mediated pathway.

Methods and Tools

This study adopted a pragmatist research paradigm utilizing a mixed-methods concurrent triangulation design (Creswell & Plano Clark, 2023). This design enabled the simultaneous collection of quantitative survey data and qualitative interview insights, which were integrated during the interpretation phase to provide the structural and psychological dynamics under inquiry (Kothari, 2004).

Study Area and Target Population

The study was conducted in Kiruhura District, southwestern Uganda, a pastoral and developing rural area with relatively low national examination performance (UNEB, 2020). The target population comprised all 115 classroom teachers and 7 headteachers across the seven government-aided secondary schools in the district (District Education Office, 2026). Adult respondents (teachers and headteachers) were selected because they can

evaluate institutional practices and observe student behaviour objectively, thereby avoiding ethical complications associated with minor consent (Israel & Hay, 2006).

To eliminate sampling bias a census approach was used for both populations. All 115 teachers participated in the quantitative survey, and all 7 headteachers were interviewed qualitatively, drawing on their extensive administrative experience with school programmes (Cohen et al., 2002). The participating schools were Sanga, Nyakashashara, St Peter's Kitura, Kashongi, Lake Mburo, Kaaro, and Kikasti.

Student motivation and academic performance were measured through teacher perceptions rather than student-level or administrative data. First, students were minors (below 18 years), and data collection would have required parental consent and minor assent procedures that were not feasible within the ethics clearance obtained (Israel & Hay, 2006). Second, attendance registers are paper-based, incomplete, and non-standardized across the seven schools, which would have introduced substantial non-random measurement error. Third, teachers interact with students daily in both academic and co-curricular settings and are well placed to give their perceptions (persistence, engagement, enjoyment) and relative academic performance (grades, test performance, classroom participation) (Dowson & McInerney, 2003). This approach represents a defensible trade-off between ethical feasibility, data quality, and construct validity in a rural setting. Future research should prioritize direct student-level tracking where consent infrastructure and record systems permit.

Measurements and Data Collection Procedures

All quantitative constructs were measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) (Bryman, 2016), with the instrument organized into three thematic sections corresponding to the study variables. Extracurricular activity participation (X) was operationalized as the extent to which teachers perceive students as actively involved in school-sponsored sports, debate, clubs, and Music-Dance-Drama (MDD) activities, with items aggregated across these four domains (*"Students in this school actively participate in sports competitions"; "Students participate in debate and public-speaking activities"; "Students join academic and social clubs"; "Students take part in music, dance, and drama"*) and adapted from Fredricks and Eccles (2006) and Shaffer (2019). Student motivation (M) was operationalized as the observed intrinsic interest, enjoyment, effort, and extrinsic recognition-seeking that students display in relation to school tasks, captured through items on intrinsic interest and enjoyment *("Students show genuine interest in learning activities")*, persistence and effort *("Students persist when academic tasks become difficult")*, and responsiveness to recognition *("Students are motivated by awards and public recognition")*, drawing on Dowson and McInerney (2003) and Deci and Ryan (1985). Academic performance (Y) was operationalized as teacher-perceived student achievement about class grades, test scores, and classroom participation (Dowson & McInerney, 2003), measured by items such as *"Students perform well in continuous assessment tests," "Students achieve satisfactory grades in terminal examinations," and "Students actively participate in classroom learning."*

Content validity was established through expert review and piloting with 30 teachers in Kazo District, a neighbouring district to Kiruhura, yielding a Content Validity Index (CVI) of 0.88, which exceeds the recommended 0.70 threshold (Amin, 2005); reliability was confirmed in the same pilot, with Cronbach's alpha coefficients above 0.82 for all three scales, satisfying Sekaran's (2003) criterion of 0.70. Composite scores for ECA, MOT, and ACA were computed as the mean of their constituent items (Table 1 below), all composites approximated normal distributions, with skewness and kurtosis values well within the ±2.0 thresholds recommended by George and Mallery (2010).

Qualitative data were collected via face-to-face key informant interviews with headteachers using an interview guide (Oben, 2021). Formal institutional clearance and ethical approval were secured from Ibanda University Internal Research Ethics Committee number IU-92026-019 prior to field deployment.

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
Extracurricular Activities (ECA)	115	1.83	5.00	4.02	0.72	−1.12	1.45

Student Motivation (MOT)	115	1.67	5.00	4.21	0.68	−1.05	1.12
Academic Performance (ACA)	115	1.67	5.00	3.76	0.70	−0.48	0.21

Table 1. Descriptives and Normality Indicators for Composite Variables (N = 115)

Source: Field data, 2026.

Data Processing, Analysis, and Triangulation

Quantitative data were analysed in SPSS Version 26. Descriptive statistics and bivariate Pearson correlations were computed first. Mediation was then tested using Baron and Kenny's (1986) four-step regression framework. This was complemented by the Sobel test (Sobel, 1982) and 5,000-resample bootstrapping in the PROCESS macro (Model 4) (Preacher & Hayes, 2008). In line with best practice, indirect effects are reported with bias-corrected 95% confidence intervals and are considered significant when the interval excludes zero (Hayes, 2022; Preacher & Hayes, 2008).

Since the 115 teachers were nested within only seven schools, observations were not treated as strictly independent. First, all regression models were re-estimated with school fixed effects (six dummy variables), which absorb unobserved, time-invariant school-level confounding such as leadership quality, resource endowment, and examination culture. Second, cluster-robust (Huber–White) standard errors were computed with school as the clustering unit. Third, school-level means for ECA, MOT, and ACA were inspected to confirm that between-school variation did not drive the results. To reduce omitted-variable bias, the models controlled for teacher gender (male = 1), education level (degree = 1; diploma = 0), and position (senior administrator = 1; classroom teacher = 0). These covariates are reasonably associated with perceived extracurricular participation, student motivation, and performance. They were entered simultaneously with the mediator in the direct-effect model.

Qualitative interview transcripts were transcribed verbatim and analysed in NVivo Version 14 using Braun and Clarke's (2006) six-phase thematic framework. Coding proceeded deductively from the SEVT and SDT constructs (expectations of success, task value, autonomy, competence, relatedness) while remaining open to inductive codes. Two coders independently coded the first three transcripts. Discrepancies were resolved through discussion, and a coding framework was finalized before the remaining transcripts were coded. Themes were then developed by collating codes into candidate themes, reviewing them against the full dataset, defining and naming them, and selecting representative verbatim quotations. To achieve integration, the quantitative statistical paths (total, direct, and indirect effects) were directly triangulated with the qualitative headteacher narratives in the Results and Discussion section (Creswell & Plano Clark, 2023).

RESULTS AND DISCUSSION

Composite variables were established for Extracurricular Activities (ECA, X), Student Motivation (MOT, M), and Academic Performance (ACA, Y) by aggregating their respective survey items into scale means. Table 2 below presents the descriptive statistics for these composites. All three variables were measured on a 5-point Likert scale, and their means ranged from 3.76 (ACA) to 4.21 (MOT), indicating that teachers generally perceived students as displaying moderately high motivation, relatively high extracurricular participation, and moderately positive academic performance. Extracurricular participation recorded the highest mean (M = 4.02, SD = 0.72), suggesting that co-curricular activities were a visible and regular feature of school life in the sampled institutions. Academic performance recorded the lowest mean (M = 3.76, SD = 0.70), which is consistent with the mixed national examination outcomes characteristic of rural schools in the district. Standard deviations for all three composites were modest (0.68 to 0.72), indicating reasonable homogeneity in teacher perceptions across the 115 respondents. The skewness and kurtosis values for all composites fell well within the ±2.0 thresholds recommended by George and Mallery (2010), confirming that the distributions approximated normality and that the variables were suitable for parametric correlation and regression analyses.

Variable	N	Min	Max	Mean	Std. Dev.	Skewness/ Kurtosis
Extracurricular Activities (ECA)	115	1.83	5.00	4.02	0.72	-1.12/1.45
Student Motivation (MOT)	115	1.67	5.00	4.21	0.68	-1.05/1.12
Academic Performance (ACA)	115	1.67	5.00	3.76	0.70	-0.48/0.21

Table 2: Descriptive Statistics and Normality Indicators for Composite Variables (N = 115)

Source, Field data 2026

Table 3 presents the bivariate Pearson correlations among the composites, which were computed on school-mean-centred scores to remove between-school level differences; the pattern of associations was unchanged when raw composites were used. As shown in Table 3, ECA was positively and significantly correlated with MOT ($r = .39$, $p < .001$) and with ACA ($r = .27$, $p = .003$), while MOT was positively and significantly correlated with ACA ($r = .47$, $p < .001$). The strongest association in table 3 is between student motivation and academic performance, followed by the moderate association between extracurricular participation and motivation, with the weakest, though still significant, association between extracurricular participation and academic performance. Taken together, these bivariate associations are consistent with the theoretical expectation that extracurricular participation is associated with higher student motivation and, in turn, with better academic performance, and they satisfy the preliminary conditions required for testing the hypothesised mediated pathway (Baron & Kenny, 1986).

Variable	1	2	3
1. ECA	—		
2. MOT	.39**	—	
3. ACA	.27**	.47**	—

Table 3: Bivariate Correlations (N = 115)

Source: Field data, 2026

*Note. **p < .01. Correlations are based on school-mean-centred composites; the pattern is unchanged using raw composites.*

Testing of the Mediation Model

To test whether student motivation mediates the relationship between extracurricular participation and academic performance, Baron and Kenny's (1986) four-step regression procedure was executed, alongside Sobel and bootstrap testing. The statistical results are summarized in Table 4 and Table 5.

Step/Path	Regression Model/Path Description	Coeff (B)	SE	Beta (β)	t-statistic	p-value
Step 1 (Path c)	$ACA = \beta_0 + c(ECA) + \varepsilon$ (Total Effect)	0.271	0.088	0.278	3.07	.003**
Step 2 (Path a)	$MOT = \beta_0 + a(ECA) + \varepsilon$ (ECA on Mediator)	0.389	0.081	0.412	4.80	< .001**
Step 3 (Path b)	$ACA = \beta_0 + c'(ECA) + b(MOT) + \varepsilon$ (Mediator on DV)	0.468	0.098	0.455	4.78	< .001**

Step 3 (Path c')	ACA = β_0 + c'(ECA) + b(MOT) + ε (Direct Effect)	0.089	0.093	0.091	0.96	.341

Table 4: Baron and Kenny (1986) Regression Steps for Student Motivation Mediation (N = 115)

Source: Field data, 2026

Mediation Test Method	**Indirect Effect (a × b)**	**Standard Error**	**Test Statistic (z / t)**	**95% CI**	**Conclusion/ Significance**
Sobel Test	0.182	0.052	z = 3.50	---	(p = .0005**)
Bootstrap (5,000 re-samples)	0.182	0.051	---	[0.082, 0.282]	(p = .00000**)

Table 5: Sobel Test and Bootstrap Confidence Intervals for Indirect Effect (N = 115)

Source: Field data, 2026

To evaluate the hypothesized mediation model and account for potential organizational-level nesting, the models were estimated using both school fixed-effects (which control for unmeasured, permanent differences across schools) and cluster-robust (which account for the fact that students are grouped within schools) specifications. These alternative analytical approaches yielded substantively identical estimates. Specifically, the total effect of the model was statistically significant (c = 0.268, p = .004), whereas the direct effect, after controlling for the mediator, was non-significant (c' = 0.091, p = .352). The indirect effect through the proposed pathway was estimated at 0.177, with the 95% confidence interval strictly excluding zero ([0.074, 0.279]). These consistent results provide strong confirmation that the identified mediated pathway reflects a genuine structural relationship rather than a reflection of unobserved differences between schools.

DISCUSSION

In the discussion, the quantitative mediation models (Tables 1-3) are triangulated with qualitative headteacher key informant interview narratives and evaluated against literature review (DiMarco, 2025; Akkus & Cinkir, 2021; Christensen et al., 2021; Eccles & Wigfield, 2020; Jackson et al., 2025; Hampton, 2025). The quantitative regression established that extracurricular participation strongly and significantly predicts student motivation (a = 0.389, β = 0.412, t = 4.80, p < .001, R^2 = .170). Qualitative data directly triangulate this statistical finding by revealing the underlying institutional and psychological mechanisms.

Headteachers explain that active participation in sports, music, and debates engenders a sense of institutional belonging and self-efficacy. The HT7 noted that extra-curricular participation *"has increased their motivation and school engagement"* (Kiruhura HT7, 2026). Similarly, HT1 observed that participation in performing arts *"instills self-confidence among the participants"* (Kiruhura HT1, 2026).

This convergence (quantitative and qualitative) aligns with findings by Christensen et al. (2021) and DiMarco (2025), who emphasize that structured extracurricular experiences provide students with meaningful peer and mentorship connections that cultivate resilience and engagement. Under Situated Expectancy-Value Theory (Eccles & Wigfield, 2020; Jackson et al., 2025), when students engage in extra-curricular activities, their expectations of success (self-efficacy) and subjective task values (attainment and intrinsic value) expand. As Hampton (2025) and Akbuga and Havan (2022) note, when effort is perceived as worthwhile, student motivation to approach academic challenges increases. This convergence confirms that non-academic activities serve as incubators for student motivation in rural secondary schools.

The statistical mediation model reveal a critical insight that when student motivation was entered into the multivariate regression, the direct effect of extracurricular participation on academic performance became statistically non-significant (c' = 0.089, p = .341), while motivation exerted a positive effect (b = 0.468, p < .001). The Sobel test (z = 3.50, p = .0005) and bootstrapping (95% CI [0.082, 0.282]) confirmed full mediation,

with 67.2% of the total effect operating indirectly through motivation. Qualitative triangulation explains this statistical phenomenon where Headteachers emphasized that extracurricular activities do not alter cognitive grades through direct curricular remotely; rather, they function as psychological catalysts that relieve academic fatigue and restore concentration. As HT4 explained:

"Participation in extracurricular activities helps students to concentrate on their studies because when a student is denied a chance to participate, they feel unsettled, but after participating they pay attention to academics. It is a stress relief. Music, dance, and drama help students to relax leading to better concentration in class." (Kiruhura HT4, 2026)

Furthermore, HT6 highlighted that debate participation *"instills critical thinking and confidence as required for competence-based education"* (Kiruhura HT6, 2026). Triangulating these accounts reveals that extra-curricular engagement resolves emotional and psychological friction, fostering the mental clarity and disciplinary stamina required to master academic material. These findings resonate strongly with recent empirical work by Schueler and Larned (2025) and Olivier (2024), which demonstrate that structured school extra-curricular activities enhance cognitive engagement and reduce psychological distress, thereby supporting academic persistence.

The quantitative survey items capturing extrinsic motivation found that recognition and rewards strongly reinforce student commitment. Qualitative data again triangulate this by illustrating how school-level reinforcement practices drive academic striving. Headteachers advocate for explicit reward structures:

"Motivate participants by awarding certificates of merit during inter-house competitions... these students need to be recognized and rewarded with medals, trophies, and gifts like scholastic materials." (Kiruhura HT4, 2026)

When schools publicly celebrate extra-curricular achievements, students develop a positive affective orientation toward the school as a whole, which bridges into academic diligence. This aligns with Self-Determination Theory (Deci & Ryan, 1985), which posits that fulfilling human needs for competence and relatedness through structured recognition fosters internalized motivation and sustained persistence. Recent studies by Fan and Wang (2022) and Jackson et al. (2025) reaffirm that motivational constructs are collaborative and flexible, responding dynamically to supportive school climates and targeted recognition.

Synthesizing two contemporary theoretical perspectives, this study addresses the empirical problem that student participation in extracurricular activities does not directly enhance cognitive academic performance (Winner et al., 2013). To resolve this, the purpose of this study was to assess how extra-curricular activities function as a psychological catalyst that satisfies basic psychological needs, elevates performance expectations, and enhances task values mechanisms that subsequently drive academic persistence, classroom attendance, and superior academic performance (Fredricks & Eccles, 2006). Following ethical review and clearance obtained in July 2026 from the Ibanda University Internal Research Ethics Committee under approval number IU-92026-019, the study provides triangulated empirical evidence to examine this mediated pathway.

CONCLUSION

This study empirically assessed the mediating role of student motivation in the relationship between extracurricular participation and academic performance in government-aided secondary schools in Kiruhura District, Uganda. Utilizing a mixed-methods concurrent triangulation design the research establishes that student motivation fully mediates the extracurricular and student performance relationship (accounting for 67.2% of the total effect; indirect effect = 0.182, $p < .001$). Integrating qualitative headteacher narratives with quantitative models, this study provides compelling multi-method evidence that extracurricular school activities are psychological catalysts. The ECA relieve academic stress, strengthen self-efficacy, and restore classroom concentration, which in turn ignites internal student motivation. Aligning with current educational literature, these findings establish an indirect pathway through which non-academic interventions drive measurable gains in academic achievement.

RECOMMENDATIONS

Based on these triangulated empirical conclusions, the following actionable recommendations are advanced:

1. For School Administrators and Headteachers, institutionalize motivation-centered co-curricular programming by establishing formal recognition systems, such as certificates of merit, trophies, and public awards during school assemblies, to maximize student intrinsic and extrinsic motivation (Kiruhura HT4, 2026; Kiruhura HT6, 2026).

2. For Teachers and Activity Facilitators, leveraging extracurricular clubs, debates, and sports as psychological tools to build student self-efficacy, reduce burnout, and foster positive classroom engagement.

3. For Policymakers (Ministry of Education and Sports), formally integrate motivational co-curricular development into national secondary education quality assurance frameworks. Allocate ring-fenced operational grants and professional development training for rural teacher-facilitators to ensure sustainable co-curricular execution (Kiruhura HT2, 2026).

Implications for Theory, Practice, and Policy

The study;

1. Advances Situated Expectancy-Value Theory and Self-Determination Theory by proving through data triangulation that student motivation acts as the indispensable psychological bridge translating non-academic school engagement into academic achievement (Eccles & Wigfield, 2020; Jackson et al., 2025; Deci & Ryan, 1985).

2. Demonstrates that educators in resource-constrained settings need to intentionally cultivate student psychological needs (autonomy, competence, and relatedness) through extra-curricular activities to combat academic fatigue and burnout.

3. Urges educational planners in the study setting and similar contexts in Uganda to recognize extra-curricular activities not as peripheral luxuries, but as motivational factor for academic performance in secondary education quality frameworks.

Limitations and Future Research Directions

The study implemented a cross-sectional survey design which precludes definitive causal ordering despite strong theoretical grounding. The quantitative data relied on teacher perceptions rather than direct student self-reports. Future research should employ longitudinal designs and direct student-level tracking across multiple rural districts to examine the temporal dynamics of motivation and academic performance.

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