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Relationship Between Utilisation of Funds from Income-Generating Activities and Delivery of Classroom Teaching Services in Public Secondary Schools in Uasin Gishu County, Kenya

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Abstract

This study examined the relationship between the utilisation of income-generating activity (IGA) funds and the delivery of classroom teaching services in public secondary schools in Uasin Gishu County, Kenya. Despite increased government capitation, schools often receive insufficient funding, prompting reliance on IGAs to sustain operations. Guided by the Innovation Theory of Necessity and the Problem-Solving Theory, and grounded in pragmatism, the study adopted a correlational design within a convergent parallel mixed-methods framework. Multi-stage sampling was used to select 80 public secondary schools (40 boarding and 40 day) and 240 respondents comprising 80 headteachers, 80 senior teachers of academics and 80 bursars. Data were collected through questionnaires and interviews and analysed using Pearson and Spearman correlations and thematic analysis. Findings revealed that IGA fund utilisation was significantly related to seven of the nine teaching services examined, including textbook acquisition, employment of Board of Management teachers and continuous professional development. However, no significant relationships were established with hiring part-time teachers or financing teacher motivation. Overall, IGA fund utilisation had a strong, positive and statistically significant relationship with classroom teaching service delivery ($r = .707$, $p < .001$). The study recommends that the Ministry of Education establish guidelines requiring schools to allocate a minimum proportion of IGA profits towards improving teaching quality and digital integration. Additionally, Boards of Management should incorporate IGA-to-pedagogy objectives into school strategic plans to strengthen the contribution of alternative funding to classroom teaching services.

Key terms: Classroom teaching services, income-generating activities, public secondary schools, Uasin Gishu County, utilisation of funds.

1.0 INTRODUCTION

The financial sustainability of public secondary schools remains critical to excellence in academic performance amid emerging educational innovation. In Kenya, public secondary schools are experiencing delicate dynamics when navigating the educational economics that come with local resource mobilisation. In recognition of the importance of education in development, the Kenyan government has advanced the Education Sector Report, Medium Term Expenditure Framework 2022/23–2024/25, which commits to providing quality education, training, science, technology, research and skills development to all Kenyans with a view to a just and cohesive society (Republic of Kenya, 2021, p. 1). Through this framework, Kenya has made significant strides in education, witnessing an increase in student enrolment in both primary and secondary education. Government statistics show that student enrolment rose from 2,954,330 in 2018/19 to 3,289,885 in 2020/21 (Republic of Kenya, 2021).

The desire for a full transition to secondary school has triggered a rise in overall enrolment rates, but this has not come without challenges. The government and schools have both encountered difficulties in financing secondary education. For instance, schools continued to face financing challenges even though education received the largest share of the 2023/24 national budget, Ksh 628.6 billion or 27.4 per cent (Muchunguh, 2023). Concerns have been raised regarding the inadequate funding from the government, which leaves public secondary schools grappling with increased pressure to utilise the resources allocated to them (Bii et al., 2022). Such financing challenges arising from inadequate funds from fee collection and government capitation call for public secondary schools to look for alternative sources of funding, as is practised globally to facilitate the delivery of classroom teaching services.

From the Philippines, empirical quantitative evidence from primary and secondary schools identified canteen operations, school gardens, and product sales as key income-generating activities that these schools use to redress inadequate funding and support delivery of instructional services, including classroom teaching services (Villareal, 2023). In this respect, schools viewed such income-generating activities (IGAs) as alternative revenue streams that address funding gaps without burdening parents or stakeholders. However, the findings were not explicit about the actual impact of these IGAs on classroom teaching services.

Scholars in several countries have continued to show the inadequacy of state funding for secondary education, making schools seek alternative funding avenues. For instance, a study by Vaiciukevičiūtė et al. (2019) in Lithuania highlighted the efforts schools make to secure additional funds to supplement the shortfall from government grants. In India, Ghosh and Panigrahi (2019) demonstrated that government support was insufficient to finance education, leading to activities such as renting out infrastructure and farming among schools to supplement income. Meanwhile, Mas and Suking (2020) used the Indonesian school context to show that production units in schools provided practical training for students and generated supplementary revenue.

Sub-Saharan Africa (SSA) has also experienced inadequacy in government funding to public secondary schools, leaving them looking for internally sourced funding avenues. In the Nigerian school context, evidence shows that insufficient budgetary allocation pushed schools to activities such as school canteens, bookshops, the sale of students' handicrafts, farm production and the sale of magazines to boost their finances and facilitate classroom teaching services (Okoi et al., 2023). Similar endeavours for raising extra

funds have been reported among Tanzanian public secondary schools. John and Kaganga (2022) demonstrated that schools in Muleba District resorted to banana growing and horticulture to fund the procurement of instructional materials and classroom infrastructure. In Kilimanjaro, Njau et al. (2022) found that school shops were the most prevalent income-generating activities, and the income was used to fund teaching materials and basic needs.

The Kenyan school context has not been omitted in studies on the role IGAs play in the delivery of quality instruction. Several scholars have shown interest in establishing avenues for alternative school funding to augment the inadequate capitation provided by the government. Kiarie and Mwaura (2019) studied the impact of income-generating activities (IGAs) on infrastructural efficiency in public secondary schools in Molo Sub-County, Nakuru County. Despite identifying farming (dairy and poultry), hiring out school buses, and selling water to the community as sources of extra funds, they left a gap regarding the actual impact of these funds on classroom instruction. Bii et al. (2022) assessed the impact of revenue-generating strategies on the operational efficiency of schools in Londiani. They identified crop farming (maize, beans and vegetables), dairy and poultry farming, hiring out of school buses and leasing out of school premises for events as critical activities used to source funds locally.

Based on the studies highlighted, it is apparent that despite receiving funding from the government in the form of capitation, most schools view such capitation as inadequate. The picture is dire in public secondary schools in Uasin Gishu County, which, as shown in Table 1, experience a large capitation deficit, leaving them struggling with the delivery of classroom teaching services.

Table 1: Government Capitation in Selected Schools in Uasin Gishu County (2022–2024)

School	Academic Year	Number of Students	Expected Government Capitation (Ksh)	Actual Government Capitation Received (Ksh)	Deficit from Government Capitation (Ksh)
A	2024	1350	26.00	11.00	15.00
	2023	1290	25.80	12.80	13.00
	2022	1150	23.00	11.70	11.30
B	2024	207	10.00	4.60	1.01
	2023	249	10.00	5.54	1.88
	2022	216	8.75	4.80	1.08
C	2024	316	7.03	4.23	1.87
	2023	278	6.18	4.31	2.80
	2022	306	6.80	5.37	1.43
D	2024	323	29.29	18.66	10.63
	2023	257	33.76	12.83	20.93
	2022	267	31.61	17.44	14.17

Source: School records (2025)

The purpose of this paper is, therefore, to examine the relationship between the utilisation of funds from income-generating activities and the delivery of instructional services in secondary schools in Uasin Gishu County, Kenya, with a focus on the delivery of classroom teaching services. Understanding this relationship can contribute significantly to the discourse on educational economics of local resource mobilisation with a view to harnessing education, innovation, and community transformation.

2.0 LITERATURE REVIEW

This study is anchored in two theoretical frameworks, namely, the Innovation Theory of Necessity and the Problem-Solving Theory.

Theoretical Framework

Innovation Theory of Necessity

Rooted in innovation studies, the Innovation Theory of Necessity was propounded by economist Joseph Schumpeter in the early 20th century. The theory posits that innovation results from persistent challenges or pressing needs. It argues that despite the presence of numerous needs, existing solutions often fall short, leaving organisations and individuals to devise alternative solutions, such as new funding sources (Schumpeter, 1990). The choice of the Innovation Theory of Necessity to underpin this study resides in the understanding that the provision of quality classroom teaching services is a need experienced in public secondary schools in Uasin Gishu County, yet existing capitation solutions remain inadequate. The theory provides the impetus needed for schools to leverage funds from IGAs.

Problem-Solving Theory

Problem-solving theory has its roots in cognitive psychology. The theory was given prominence by key researchers like Allan Newell and Herbert A. Simon in the 1970s (Newell & Simon, 1972). The theory postulates that organisations and individuals are fully in charge of identifying processes through which to address emerging challenges. Newell and Simon (1972) argued that whatever process is adopted to address a challenge should involve problem identification, brainstorming of solutions, evaluation of alternatives and implementation of the chosen solution. The theory has successfully been used as an anchor to examine students' cognitive and metacognitive approach to physics problems (Dulger & Ogan-Bekiroglu, 2025). In the context of the current study, the theory is anchored in the knowledge that financing the delivery of classroom teaching services remains a problem that schools should solve using the four steps advanced by Newell and Simon (1972). Therefore, by leaning on the problem-solving theory, schools in Uasin Gishu County would be able to develop tailored solutions for implementing income-generating activities that suit their unique contexts and generate funds to complement capitation and facilitate delivery of classroom teaching services.

Utilisation of Funds from Income-Generating Activities

Utilisation of IGA Funds as a Concept

The concept of utilisation of funds from IGAs among schools has been approached from diverse scholarly perspectives. Nguyen and Nguyen (2020) focus on social resources, donations, parental contributions, and community support in schools as IGA funds sourced by schools, noting that their utilisation revolves around engaging them to support the school's day-to-day operations. Hapsari and Wardana (2023) pursue the global economic downturn perspective to perceive the utilisation of IGA funds as the engagement of such funds across schools to remain afloat and sustain their operations. They also viewed utilisation of IGA funds as mechanisms that schools put in place to complement inadequacy in fee collection and scarce

state capitation. Meanwhile, Simatwa and Ndege (2019) identified utilisation of IGA funds as the resourceful use of maize planting, beekeeping, bricklaying, horticulture, and poultry keeping for improved delivery of instructional services.

Utilisation of Funds from Income-Generating Activities and Classroom Teaching

A study by Mia et al. (2023) in Bangladesh exploring secondary school teachers' appointments and teaching quality found that teachers were poorly paid in comparison to government employees in other sectors. The qualitative study confirmed that the student-to-teacher ratio was very high and tended to affect the delivery of classroom teaching services. Lack of funds and poor morale were identified as barriers to attracting and recruiting teachers. Mia et al. (2023) rightly highlighted the challenges schools in Bangladesh face when delivering classroom teaching services. However, they did not offer possible funding solutions, such as those sourced locally.

In a descriptive survey conducted by Miju and Arif (2024) in Bangladesh with 10 teachers and 100 students from five urban and five rural schools, it emerged that both rural and urban schools lacked the required teaching materials. The study highlighted a lack of finances to purchase lesson-learning materials as a limitation to the acquisition of diverse teaching materials, especially teaching aids in rural schools, which led to over-reliance on lecture methods. Although this study documents shortages in classroom teaching materials from a global perspective, it fails to explore strategies through which the shortages of teaching materials could be addressed from within the schools.

Jiang and Li (2023) explored how secondary school students in China use and perceive mathematics textbooks. By using a mixed-methods approach, they found that textbooks played a key role in teaching, highlighting several regional disparities, especially in the use of textbooks due to accessibility and affordability. They identified that financial issues were a major contributing factor to the disparity in funding among schools. Budgetary constraints were also cited as a reason that inhibited the acquisition of textbooks in China. However, the study failed to suggest how these constraints could be addressed, overlooking schools' internal capacity to innovate.

In the developing context of Africa, challenges of accessing teaching materials remain central in existing discourse. Mabula et al. (2023) investigated the factors that influence the acquisition and provision of textbooks in secondary schools in the Tshwane District in South Africa. They found that there is a chronic shortage of textbooks. Further, their study revealed that most schools in the South African province of Gauteng allocated very small budgets for funding textbooks, which was made worse by poor management of books, leading to massive losses. Rural schools had insufficient learning materials due to underfunding, while urban schools had adequate and modern materials. While these findings highlight the importance of teaching materials, they fail to focus on the potential for locally sourced funds to complement their purchase. From the foregoing studies, we posit that:

H_0: *There is no statistically significant relationship between utilisation of funds from income-generating activities and delivery of classroom teaching services in public secondary schools in Uasin Gishu County, Kenya*.

3.0 METHODOLOGY

This study adopted a pragmatic research philosophy. Pragmatism advocates an idea or enquiry that focuses on its consequences and problem-solving utility within real-world contexts (Creswell & Creswell, 2018). Within educational management, pragmatism contends that constraints on institutional resources, for example, financial deficits in public secondary schools resulting from delayed or inadequate state capitation, warrant empirical enquiry oriented towards pragmatic, resource-oriented solutions. Under a pragmatic stance, such institutional exigencies are interrogated through the lens of institutional capacity and capacity optimisation, assessing the potential to mobilise existing, underused internal capacities to complement budget shortfalls, while using whichever approaches help explain such capitation inadequacies and delays.

The choice of pragmatism for this research was based on the ontological stance of treating positivism and interpretivism as complementary rather than exclusive epistemological frameworks (Lodico et al., 2010). Consequently, pragmatism offered the theoretical underpinning for a mixed-methods paradigm. It afforded methodological flexibility to integrate quantitative and qualitative approaches to produce a comprehensive, contextually grounded, and practically actionable assessment of the impact of income-generating activities on instructional service delivery in public secondary schools in Uasin Gishu County.

This study adopted a correlational research design integrated into a convergent parallel mixed-methods framework. By definition, a correlational design measures the degree and direction of association that exists between two or more naturally occurring variables without administrative manipulation or experimental intervention (Lodico et al., 2010). Correlational designs embedded in mixed methods frameworks permit researchers to establish statistical relationships or determine magnitude and/or direction as variables manifest in their natural operational contexts.

This study sought to establish the relationship between utilisation of IGA funds and the delivery of classroom teaching services in public secondary schools. The study targeted all public secondary schools in Uasin Gishu County as the study population (County Government of Uasin Gishu, 2025). According to Kothari (2004), a population is all the items, cases, or subjects under empirical investigation. From this target population of public secondary schools, the units of observation were the headteacher, the school bursar, and the senior teacher of academics. The headteacher was selected for being in charge of translating the school's vision into the delivery of instructional services; the headteacher is also the mandated custodian of the school's finances and acts as the centre of resource allocation (Creswell & Creswell, 2018).

The school bursar was selected because, as the financial officer, the bursar keeps the accounting records of all revenue inflows, such as school fees, IGA proceeds and government disbursements (Saunders et al., 2023). In contrast, the senior teacher of academics was included because, as the chief academic supervisor, this teacher is mandated to oversee curriculum execution and delivery of instructional services, and is therefore the most exposed to resource-related constraints. Therefore, the total target population across the 203 public secondary schools in Uasin Gishu County was 609 (203 headteachers, 203 senior teachers of academics, and 203 bursars).

The unit of analysis in this study was the public secondary school, selected due to its legal authority to receive government capitation grants and its requirement to maintain public school finances for statutory

audits. Within the target respondent population, there were 159 public day secondary schools (comprising 477 target respondents) and 44 public boarding secondary schools (comprising 132 target respondents). The distribution of the target population by school category is therefore highlighted in Table 2.

Table 2: Target Population of Public Secondary Schools in Uasin Gishu County

School Category	Number of Institutions (N)	Targeted Informants per School	Total Target Population (N)
Public Day Secondary Schools	159	3	477
Public Boarding Secondary Schools	44	3	132
Total	203	—	609

A multi-stage sampling approach was employed to achieve representative coverage of the study context. First, the population was stratified into public day (N = 159) and public boarding (N = 44) secondary schools. Second, schools in each stratum were mapped across the six sub-counties to guarantee spatial representation of rural (Soy, Moiben, Kesses and Ainabkoi) and peri-urban (Turbo and Kapsaret) areas. Third, 40 of the 44 public boarding schools (90.9%) were selected, while simple random sampling was used to draw 48 public day secondary schools, a 30 per cent sampling proportion. Fourth, an extreme-case approach was applied, yielding 40 day schools (20 with low and 20 with high IGA fund generation) and 40 boarding schools (20 with low and 20 with high IGA fund generation). Finally, purposive sampling was used to select the 80 headteachers of the sampled schools for interviews. The final sample therefore comprised 80 public secondary schools (40 boarding and 40 day) and 240 respondents (80 headteachers, 80 senior teachers of academics and 80 bursars).

Data were collected using two tailored instruments consistent with psychometric measurement standards. The first instrument was the Bursars' and Senior Teachers of Academics Questionnaire (BSTAQ) administered to 80 bursars and 80 senior teachers of academics. This instrument used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and gathered information on capitation disbursal, net collections, and baseline classroom teaching services. The second instrument was the headteachers' interview schedule. The researcher moderated the interviews, engaging participants on a face-to-face basis, ensuring that they understood the items and were thorough in their responses. The interviews revolved around the support IGA funds offer to the delivery of instructional services, how IGA funds are prioritised for the various instructional services, and how decisions to utilise IGA funds are made.

Psychometric rigour was ensured by piloting the instruments in public secondary schools in Keiyo Marakwet County. This pilot context was chosen because it is independent of the study location, which ensured that the sampled respondents had no contact with the study items before the main study. Five schools were chosen for each of the four cohorts (day and boarding schools with

low and high IGA values), giving a total of 20 schools (10 with low-value and 10 with high-value IGAs). Cronbach's alpha confirmed the internal consistency reliability of the delivery of classroom teaching construct (α = .766).

Data from quantitative surveys were coded and analysed using SPSS Version 28. Both descriptive statistics and inferential statistical tests were evaluated with a significance threshold set at 5 per cent. Cross-tabulations were used to display the descriptive statistics across the schools with high IGA fund utilisation and those with low IGA fund utilisation. To test the existence of a relationship between utilisation of IGA funds and delivery of classroom teaching services, the correlation analysis incorporated both the interval-by-interval and ordinal-by-ordinal measures, taking into account the nature of the scales used to measure low and high IGA fund utilisation.

Ethical approval for the study was obtained from Kabarak University Ethics and Research Committee (KUREC/ISREC and a research permit was issued by the National Commission for Science, Technology and Innovation (NACOSTI), License No: NACOSTI/P/25/4180882**.** Authorisation was also obtained from the Uasin Gishu County Director of Education. Participation was voluntary, and all respondents gave informed consent before data collection. The identities of respondents and schools were kept confidential; schools are identified only by codes in this paper, and the data were used solely for the purposes of this study.

4.0 FINDINGS AND DISCUSSION

Common Income-Generating Activities

A thematic analysis of the responses revealed several axial codes (connecting specific activities to broader functioning) which led to three key themes (Table 3). It was apparent that public secondary schools in Uasin Gishu County engage in several income-generating activities to complement the minimal capitation in delivering classroom teaching services. These activities fall under agricultural and farm-based production, internal commercial ventures and asset monetisation.

Table 3: Income-Generating Activities in Public Secondary Schools in Uasin Gishu County

Income-generating activities Raw Responses (Categories)	**Axial Codes**	**Corresponding Themes**
Dairy cows, beef cattle, dairy production, piggery, and dairy keeping.	Livestock and Animal Husbandry	Agricultural & Farm-Based Production
Maize farming, vegetable production, cereal farming, and forestry (firewood).	Crop Cultivation and Forestry	Agricultural & Farm-Based Production
Bread baking (bakery).	Value-Added Processing	Internal Commercial Ventures
School canteen, lock-up shops.	Retail and Trade Services	Internal Commercial Ventures
Hiring out boarding facilities, multiple halls, and staff houses.	Real Estate and Facility Rental	Asset Monetisation
School bus hire.	Transport Services	Asset Monetisation

Annual Utilisation of IGA Funds

To obtain the annual amount (Ksh) of IGA funds utilised across the schools to complement instruction, collated records from the bursars revealed that schools with low utilisation of IGA funds reported a mean annual IGA utilisation of Ksh 129,325 and a standard deviation of Ksh 70,287.10. The specific IGA utilisation ranged between Ksh 59,037.90 and Ksh 199,612.10. In contrast, in schools with high utilisation of IGA funds, the mean annual utilisation of IGA funds was Ksh 1,152,500 with a corresponding standard deviation of Ksh 362,744.20, yielding a utilisation ranging from Ksh 789,755.80 to Ksh 1,515,244.20 (Table 4).

Table 4: Utilisation of IGA Funds in Public Secondary Schools in Uasin Gishu County

	Level of IGA utilisation	N	Mean (Ksh.)	SD (Ksh.)	Utilisation%
Annual amount of IGA funds utilised to complement instructional services	Low	40	129,325	70287.099	10.1
	High	40	1,152,500	362744.171	89.9

IGA Fund Utilisation and Delivery of Classroom Teaching Services

The study examined the relationship between utilisation of funds from income-generating activities and delivery of classroom teaching services among schools with low and high utilisation of IGA funds in public secondary schools in Uasin Gishu County. Results of the cross-tabulations across nine teaching services, including facilitation of classroom teaching, purchase of relevant textbooks, acquisition of ICT tools for teaching, equipping the science laboratory, hiring of part-time teachers or teaching assistants, financing teacher motivation, organising continuous professional development, upgrading classroom infrastructure, and subscribing to paid online academic resources, are summarised in Table 5 and described below.

Table 5: Correlations Between Utilisation of IGA Funds and Delivery of Classroom Teaching Services (N = 80 Schools)

Teaching service	Pearson *r*	*p*	Spearman r_s	*p*
Facilitation of classroom teaching (hiring of BOM teachers)	.531	< .001	.529	< .001
Purchase of relevant textbooks	.542	< .001	.521	< .001
Acquisition of ICT tools for teaching	.408	< .001	.419	< .001
Equipping the science laboratory	.465	< .001	.470	< .001
Hiring of part-time teachers or teaching assistants	.164	.147	.126	.266
Financing teacher motivation	.002	.983	−.030	.793
Organising continuous professional development	.499	< .001	.483	< .001
Upgrading classroom infrastructure	.372	.001	.390	< .001
Subscription to paid online academic resources	.515	< .001	.510	< .001
Composite delivery of classroom teaching services	.707	< .001	.701	< .001

Note. Pearson correlations treat both variables as interval data; Spearman correlations treat them as ordinal. BOM = Board of Management; ICT = information and communication technology. The final row is the composite measure used to test H_0.

IGA Fund Utilisation and Facilitation of Classroom Teaching (Hiring of BOM Teachers)

On the relationship between utilisation of funds and hiring of Board of Management (BOM) teachers, the correlation results revealed that hiring BOM teachers was positively and significantly correlated with utilisation of IGA funds from both the parametric ($r = .531$, $p < .001$) and the non-parametric ($r_s = .529$, $p < .001$) perspectives (Table 5).

IGA Fund Utilisation and Purchase of Relevant Textbooks

Regarding the purchase of relevant textbooks, the results presented in Table 5 confirmed that the purchase of relevant textbooks is positively and significantly correlated with the utilisation of IGA funds from both the parametric ($r = .542$, $p < .001$) and the non-parametric ($r_s = .521$, $p < .001$) perspectives.

IGA Fund Utilisation and Acquisition of ICT Tools for Teaching

In the case of acquiring ICT tools for teaching, correlation results presented in Table 5 confirmed that acquisition of ICT tools is positively and significantly correlated with utilisation of IGA funds from both the parametric ($r = .408$, $p < .001$) and the non-parametric ($r_s = .419$, $p < .001$) perspectives.

IGA Fund Utilisation and Equipping of the Science Laboratory

The relationship between utilisation of IGA funds and purchase of laboratory equipment for science subjects yielded positive and significant correlations both from the parametric ($r = .465$, $p < .001$) and the non-parametric ($r_s = .470$, $p < .001$) perspectives (Table 5).

IGA Fund Utilisation and Hiring of Part-time Teachers or Teaching Assistants

The relationship between utilisation of IGA funds and hiring part-time teachers or assistants yielded non-significant correlations both for the parametric ($r = .164$, $p > .05$) and the non-parametric ($r_s = .126$, $p > .05$) perspectives (Table 5). This confirmed that in public secondary schools in Uasin Gishu County, use of IGA funds had no significant relationship with the hiring of part-time teachers or assistants, even though IGA funds complemented government funding.

IGA Fund Utilisation and Financing Teacher Motivation

The relationship between utilisation of IGA funds and financing teacher motivation also yielded non-significant correlations both for the parametric ($r = .002$, $p > .05$) and the non-parametric ($r_s = -.030$, $p > .05$) perspectives (Table 5). This confirmed that in public secondary schools in Uasin Gishu County, use of IGA funds had no significant relationship with financing teacher motivation in spite of its complementary role.

IGA Fund Utilisation and Organising Continuous Professional Development

The relationship between utilisation of IGA funds and organising of continuous professional development (CPD) programmes yielded significant correlations both for the parametric ($r = .499$, $p < .001$) and the non-parametric ($r_s = .483$, $p < .001$) tests (Table 5). This confirmed that in public secondary schools in Uasin Gishu County, use of IGA funds supports the organisation of CPD programmes.

IGA Fund Utilisation and Upgrading Classroom Infrastructure

The relationship between utilisation of IGA funds and financing the upgrading of classroom infrastructure also yielded significant correlations for both the parametric ($r = .372$, $p = .001$) and the non-parametric ($r_s = .390$, $p < .001$) tests (Table 5). This confirmed that in public secondary schools in Uasin Gishu County, use of IGA funds complements the improvement of classroom infrastructure.

IGA Fund Utilisation and Subscription to Paid Online Academic Resources

The relationship between utilisation of IGA funds and subscription to paid online academic resources and e-learning platforms also yielded significant correlations for both the parametric ($r = .515$, $p < .001$) and the non-parametric ($r_s = .510$, $p < .001$) tests (Table 5). This confirmed that in public secondary schools in Uasin Gishu County, use of IGA funds has the potential to boost subscriptions to paid online academic resources and e-learning platforms.

These quantitative findings were supported by the headteachers' interviews. When asked how revenue from IGAs supports classroom teaching operations, headteachers described three main support mechanisms. The first theme was the procurement of instructional materials and laboratory supplies: recurrent narratives indicated that, when capitation was inadequate, IGA revenue was critical in ensuring that curriculum implementation was not interrupted. The second theme was that IGA funds facilitate practical and experiential learning. As one headteacher explained:

> *…during practicals in subjects like agriculture, biology and home science, IGA revenue supplements costs of teaching and learning specimens.*

while another noted that *…the school farm is, for instance, very beneficial in facilitating real-time practical teaching in agriculture.*

The third theme was that IGA revenue enabled schools to optimise their human resources and their welfare. The recurring narratives pointed towards the use of this revenue to cater for professional development, learner motivation, and staff accommodation.

Test of the Relationship Between Utilisation of IGA Funds and Delivery of Classroom Teaching Services

Hypothesis H_0 stated that there is no statistically significant relationship between utilisation of IGA funds and the delivery of classroom teaching services in public secondary schools in Uasin Gishu County. Pearson product-moment and Spearman rank-order correlations were then run between utilisation of IGA funds and the composite delivery of classroom teaching services to test the significance of the relationship. The descriptive results revealed a consistent disagreement ($M = 2.15$, $SD = 0.981$) among low-utilisation schools regarding their use of these funds for delivering classroom teaching services. In contrast, high-utilisation schools consistently strongly agreed ($M = 4.25$, $SD = 0.439$). The cross-tabulation of the composite delivery of teaching services constructed across the utilisation of IGA funds (Table 6) confirmed the individual item results, showing that for the low-utilisation cohort, 62.5 per cent ($n = 25$) disagreed that IGA funds were used to facilitate classroom teaching services. In contrast, in the high-utilisation cohort, 75.0% ($n = 30$) strongly agreed and 25.0 per cent ($n = 10$) very strongly agreed.

Table 6: Cross-Tabulation of IGA Fund Utilisation and Delivery of Classroom Teaching Services

		IGA funds are utilised in the delivery of teaching services.			Mean	SD
		Disagree	Strongly agree	Very strongly agree		
Utilisation of IGA funds	Low	25	15	0	2.15	.981
		62.5%	37.5%	0.0%		
	High	0	30	10	4.25	.439
		0.0%	75.0%	25.0%		

On testing the relationship between utilisation of funds and delivery of classroom teaching services, the correlation coefficient (Table 5, final row) was positive and statistically significant at both the parametric ($r = .707$, $p < .001$) and non-parametric ($r_s = .701$, $p < .001$) levels. Therefore, H_0 was rejected. This indicates that utilisation of IGA funds correlates positively and significantly with delivery of classroom teaching services.

Discussion

Through these findings, the study underscores the importance of income-generating activity funds, showing their strong association with the delivery of instructional services ($r = .707$, $p < .001$). In doing so, this study lends support to concerns in the Kenya Sessional Paper (Republic of Kenya, 2024), which identified financial constraints as barriers to improving instructional quality. The central role of IGA funds in determining the quality of instructional services is implicit in the large effect size associated with utilisation of these funds. This finding aligns with the definition of instruction as an act of comprehensive training that can be compromised by lack of robust funding (Warimba, 2024).

The finding showing the significant relationship between utilisation of IGA funds and delivery of classroom teaching services is also consistent with the reflections by scholars who argue that, unlike developed nations, developing nation settings rely on local resource mobilisation to supplement required funds that can keep teaching in schools sustainable (Christensen et al., 2019; See et al., 2020). The study further reflects the notion by Shuell (2001) in showing that school category does not bar the potential of utilisation of IGA funds to enhance the teaching experience. The high variance in the delivery of teaching services between low utilisation of IGA schools and high utilisation of IGA schools reflects the variations in salaries and teaching conditions experienced mostly in low utilisation of IGA schools (Mbonea et al., 2021; Sanga et al., 2024) and acts as a testament to the fact that the teacher shortage can be addressed when schools put in place income-generating activities to strengthen their coffers. Moreover, by showing that IGA funds can be a strategic revenue source, this study answers the argument among scholars (Marangu et al., 2024; Toropova et al., 2021) that high teacher turnover and inconsistent instruction are caused by low pay and poor facilities.

The finding that IGA funds facilitate the hiring of BOM teachers is significant because it addresses gaps identified in global and regional discourse. Evidence from Kenya's Sessional Paper (Republic of Kenya, 2024) points to staffing deficits in public schools leading to pupil-to-teacher ratios that exceed the required ratios. Moreover, socio-economic challenges in developing nations have been attributed to staffing concerns in terms of the inability to attract and recruit qualified teachers because of poor

remuneration and incentives (Mia et al., 2023; Nugroho et al., 2024). Meanwhile, the positive relationship between utilisation of IGA funds and purchase of relevant textbooks aligns with existing global and regional scholarly evidence showing that increased funds enable the acquisition of the required textbooks, and with it improved learning outcomes (Isah & Abdullah, 2023; Otwine et al., 2022; UNESCO, 2021). This empirical evidence from public secondary schools in Uasin Gishu County highlights IGA funds as alternative pathways to funding gaps experienced in Kenyan public secondary schools.

This statistically significant positive relationship between utilisation of IGA funds and purchase of laboratory equipment for science subjects adds to existing research in demonstrating that funds gained through income generation are an avenue for resolving challenges facing critical practical instruction in educational frameworks globally, regionally, and nationally. UNESCO often highlights hands-on scientific experimentation and well-equipped laboratory facilities as antecedents to effective instruction in STEM disciplines (UNESCO, 2021). Yet, empirical evidence from the SSA context has shown the struggle among schools in affording well-equipped and functional laboratories (Isah & Abdullah, 2023; Otwine et al., 2022). In such situations, teachers have resorted to theory lessons that leave performance in practical examinations suffering. Therefore, the empirical correlation in this study fills this gap, identifying IGA fund utilisation as a functional, self-sustaining approach that schools can use to improve their practical science instruction.

Limitations of the Study

When interpreting these findings, several limitations should be considered. First, the correlational design establishes association, not causation; schools that generate more IGA income may differ in other ways, such as leadership, enrolment or location, that also shape teaching services. Second, schools were selected using an extreme-case approach that contrasted low- and high-yield IGA schools. Sampling from the two ends of a distribution tends to strengthen observed correlations relative to a full-range sample, so the coefficients describe the contrast between these two groups rather than population-wide estimates. Third, the delivery of classroom teaching services was measured through self-reported Likert-scale responses from bursars and senior teachers of academics, which may be subject to response bias. Finally, the study was confined to public secondary schools in one county, which limits generalisation to other counties and to private schools.

5.0 CONCLUSION AND RECOMMENDATIONS

Conclusion: Quality delivery of classroom teaching services in public secondary schools can get a structural boost through utilisation of funds from income-generating activities. Although the government, through capitation funds, provides a baseline buffer to support classroom teaching, with concerns mounting over the amount of funds given and the chronic delay in the disbursement, IGA funds emerge as leverage for public secondary schools to recruit BOM teachers, purchase required materials, equip laboratories, and subscribe to online platforms. Even though IGA funds may not significantly intervene in regulated services like motivating teachers through cash stipends, overall their utilisation raises the standards and quality of classroom teaching services. However, public schools with few IGAs generate and use little IGA income and therefore struggle with the delivery of some classroom teaching services.

Recommendations: The following recommendations are proposed based on the study findings to enhance classroom teaching service delivery through effective utilisation of IGA funds:

Policy Recommendations

Although the study confirmed that IGA fund utilisation was a strong driver of the delivery of classroom services, the cross-tabulation results showing that schools with low IGA utilisation often lack basic learning materials call for policy and practical interventions. As a move to improve the quality of classroom delivery across the board, the Ministry of Education (MoE), through the Directorate of Secondary Education, should formulate guidelines that would require public secondary schools engaged in IGAs to have a minimum percentage of profits to be channelled into a fund created for classroom teaching quality and digital integration. The MoE, in tandem with the Teachers Service Commission (TSC) and the Public Audit Office, should develop clear policy frameworks that are legally enabled to govern staff professional welfare and non-monetary recognition programmes. Moreover, BOMs and headteachers should include objectives that link IGA income to pedagogy in their school strategic plans, to enhance digital adoption and raise the quality of classroom teaching services.

Recommendations for Future Research

The study revealed a strong positive correlation between IGA fund utilisation and instructional service delivery. However, since correlation does not imply causation, future studies should use path analysis or structural equation modelling (SEM) to first establish the formative indicators of improved instructional delivery and then test whether improved instructional delivery has a mediating effect on students' academic performance in national examinations (KCSE). Meanwhile, because headteachers' fear of audit queries constrains them from using IGA funds for staff motivation stipends and flexible part-time teaching assistant contracts, a qualitative policy study is recommended to explore the effects of public financial management regulations on entrepreneurial leadership in secondary schools.

Conflict of Interest

The authors declare no conflict of interest.

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