

Effect of sports participation on completion of primary school children in Karamoja Region, Uganda

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ABSTRACT

Primary school completion rates remain critically low in Karamoja, Uganda, with only 5.5% of children completing primary education and 74.2% of primary-aged children out of school, threatening human capital formation and sustainable development. This study examined the effect of sports participation on completion of primary school children in Karamoja region of Uganda. The specific objective of the study was to examine the effect of sports participation on completion among primary school children in Karamoja region, Uganda. The null hypothesis formulated was; sports participation has no significant effect on completion among primary school children in Karamoja region, Uganda. The study was anchored on James Coleman's Multiple Role Theory of extracurricular activities. A cross sectional study design was used during the study coupled with a mixed methods approach of quantitative and qualitative methods. District Sports Officers (11), District Inspectors of Schools (11), head teachers (44), and games and sports teachers (88) were purposively sampled. Class teachers (88) and pupils (352) were randomly sampled to give every respondent an equal chance of participation. Four primary schools per district were purposively selected based on their active participation in sports at district, regional, or national level. Data was collected using questionnaires, interviews, and focus group discussions from 590 respondents. Quantitative data was collected from 539 respondents (352 pupils, 88 class teachers, 88 sports teachers, and 11 District Sports Officers) using structured questionnaires. Qualitative data was collected using key informant interviews with DIS and Focus Group Discussions with 44 head teachers. Quantitative data was analysed using IBM SPSS (version 27) to get frequencies, means, medians, standard deviations, interquartile ranges and inferential statistics (Spearman's correlation, linear regression with bootstrapping, and mediation analysis using PROCESS Macro with 5,000 resamples). Qualitative data was transcribed and analysed using thematic analysis in NVivo (version 15). The findings reveal that sports participation is associated with enhancing primary school completion through increased confidence in completing school (Mean=4.53, SD=0.681, 92.9% agreement), strengthened future orientation (Mean=4.52, SD=0.688, 92.1% agreement), ability to manage school work alongside home responsibilities (Mean=4.54, SD=0.677, 93.1% agreement), and reduced exposure to social risks (Mean=4.50, SD=0.750, 91.8% agreement). An exceptionally strong, positive, and statistically significant correlation was found between sports participation and school completion ($\rho = 0.992$, $p < .001$). Critically, linear regression analysis established that sports participation explains 94.9% of the variance in school completion ($R^2 = 0.949$), representing a near-perfect predictive relationship. The study concludes that sports participation contributes to school completion in pastoralist marginalized, conflict-affected settings of Karamoja by addressing the salient barriers to completion. The study recommends the establishment of longitudinal sports participation pathways from Primary One through Primary Seven, implementation of attendance-eligibility policies, investment in coach training for mentorship, and linkage of sports participation to scholarships and formal recognition systems.

Key Words: Completion Rates, Karamoja, Primary Education, Sports Participation

I. INTRODUCTION

Sports participation refers to the active involvement of learners in structured and unstructured physical activities within the school setting, including games, athletics, and organized competitions. It is widely recognized as a multidimensional process that promotes physical fitness, psychosocial development, and cognitive functioning (Mollel & Otieno, 2022). School Completion refers to the proportion of pupils who successfully finish the full primary school cycle up to Primary Seven. School Completion refers to the number of pupils who successfully finish school. In this study, completion means the number of pupils who enrolled at school and study up to the end of the learning cycle and for this case, Primary seven (Brown et al., 2017).

Quality physical education in schools promotes lifelong learning, develops skills, and improves educational persistence World Health Organisation (WHO, 2022) At the primary level, structured sports programs enhance physical fitness and positively affect school engagement, reducing dropout risk and increasing the likelihood of completing the full educational cycle (Demetriou et al., 2018; Owen et al., 2024). Sports participation in Uganda can be traced to pre-colonial communities, long before the introduction of modern sports. Traditional Ugandan societies participated in physical activities such as wrestling, hunting, running, dancing, swimming, canoeing, throwing, and board game. These physical activities were for survival, entertainment, cultural expression, physical fitness, preparation for warfare, and

socialization. Modern organized sports activities were introduced by Christian missionaries and colonial masters mostly the British during the late 19th and early 20th centuries. Missionaries introduced sports such as soccer, athletics, tennis, hockey, boxing, volleyball, basketball, and netball. This was through schools and churches. Schools became important sites for teaching sports and physical education and organizing competitions which were as well used for leisure and entertainment. During the British rule in Uganda, sports participation became increasingly organized within the formal education system. The colonial administration introduced the 1933 British Physical Training syllabus compulsory in Uganda's education system, the same curriculum used for children across the British Empire! (Simiyu, 2022). Sporting activities in schools were used to promote discipline, fitness, teamwork, and character formation. Soccer and athletics became popular, while activities like cricket, hockey, tennis, and boxing were also developed gradually (Demetriou, et al., 2018). Intra and extra mural competitions in schools and institutions helped establish and strengthen organized sports structures in Uganda. After Uganda's independence in 1962, the government continued to promote sports through schools, colleges, clubs, and national institutions. Uganda began participating more actively in regional, continental, and international competitions, including the Olympic and Commonwealth Games. The development of national sports associations and enactment of 1964 Sport Act, helped organize and regulate different sporting disciplines. Football, athletics, boxing, netball, and rugby became among the country's most popular sports (UNFPA Uganda. (2018).

Uganda has developed several policies and legal frameworks supporting sports and Physical Education (PE) in schools. In 2009, the Ministry of Education and Sports (Circulars Ref No: ADM/48/237/01 of 9th November and ADM/48/31/01 of 19th March) granted Physical Education and Sports a core subject in the curriculum following the International Charter of Physical Education, Physical Activity and Sports of the United Nations Education Scientific and Cultural Organisation [UNESCO], the Professor Ssentenza Wilberforce Kajubi Education Policy Review Commission of 1987-1989, and the 1992 Government White Paper on Education and The National Physical Education and Sports Policy. In line of this, P.E was made compulsory for all learners in basic education, including learners with special educational needs, and required schools to provide adequate facilities, equipment, and instructional materials (Atuhaire, 2025). In 2023, Ugandan parliament passed the Sport Act, 2023 (Act 26 of 2023) which gives a legal framework for the Organisation, promotion, regulation, and development of sports in Uganda. Despite of the above, PE and sports is sometimes not included on the timetable, while in other schools, it is allocated limited attention or replaced by examinable subjects such as Mathematics and English language. As a result of this, PE has experienced marginalization despite its official compulsory status in most primary schools.

Uganda's integration of school sports began after independence with the establishment of the Ministry of Education and Sports (MoES) in 1962 and the National Council of Sports Act 1964, which laid the foundation for organized school sports according to National Council of Sports in 1966 (UWEZO, 2016). Policy direction strengthened between 1986 and 1996 through the 1994 White Paper, though implementation remained limited. The Universal Primary Education increased access but exposed system pressures, while the revival of the Uganda Primary Schools Sports Association (UPSSA) in 1999 marked early recognition of sports as a retention strategy. A major shift occurred from 2006 to 2014 when Physical Education (P.E) was made compulsory and the 2009 National Sports Policy linked sport to retention and academic achievement (Atuhaire, 2025).

From 2015 to 2019, expansion included sports schools, chess, and international partnerships that increased participation. Between 2020 and 2025, Uganda strengthened its position through sustained investment and success in Federation of East Africa Secondary Schools Sports Association (FEASSA) competitions, including hosting the 2024 games in Bukedea and participating in the 2025 games in Kakamega. Uganda has the highest dropout rates of learners in East Africa at 59% compared to Tanzania 20% and Kenya 21% (United Nations Children's Fund [UNICEF], 2024). Karamoja has low completion (5.5%) compared to 40% nationally. There is very high dropout (74.2%) compared to the national at 30% (Uganda Bureau of Statistics [UBOS] 2024, UNICEF, 2024). Furthermore the Primary Leaving Examination pass rate for Karamoja is 28% . The relationship between sports participation and academic achievement in Karamoja remains unknown as no study has empirically tested whether sports participation could serve as an effective intervention comparable to programs like Alternative Basic Education for Karamoja (Stites et al., 2024). This study therefore examined the effect of sports participation on completion rates of primary school children in Karamoja, generating evidence for policy interventions that enhance educational persistence through Sports.

1.1 Statement of the Problem

In an ideal setting, primary schools must provide quality instruction alongside structured sports that holistically develop learners' cognitive, psychomotor and affective domains (Mollet & Otieno, 2022). Karamoja schools should maintain high learner completion through the primary cycle and provide sports programs (Stites et al., 2024). Sports fosters the development of teamwork, discipline, and leadership skills which are crucial for success in different areas of life. There has been efforts by government and development partners like World Food Program through the school feeding program to support schools to ensure sports participation and completion. Non-governmental organizations (NGOs) have helped in mobilising pupils through go back to school campaigns, offering scholarships and bursaries, Infrastructural development, and support supervision. NGOs like World Vision and Save-The- Children Uganda; have

supported districts to come up with district education ordinances that are geared towards learner completion. The government introduced UPE to ensure equitable provision of quality primary education for all children in addition to Alternative Basic Education for Karamoja (ABEK). Despite all these efforts, by the NGOs and government, Karamoja is still grappling with sub-optimal learner completion as its primary education records the lowest. There is low completion (5.5%) compared to 13% nationally. There is very high dropout (74.2%) compared to the national at 30% (UBOS 2024). Furthermore the Primary Leaving Examination pass rate for Karamoja is 28% (UNICEF, 2024).

The relationship between sports participation and school completion in Karamoja remains unknown as no study has empirically tested whether sports participation could serve as an effective intervention comparable to programs like Alternative Basic Education for Karamoja (Stites et al., 2024). If this educational disparities persists, Karamoja will continue to experience abject poverty, social marginalization, and economic underdevelopment. Uganda risks failing to achieve SDG3 (Good Health and Wellbeing) and SDG4 (Quality Education) and the primary objective of the UNESCO International Charter on Physical Education, Physical Activity and Sports, 2025. Understanding the effect of sports participation on school completion in Karamoja could provide valuable insights into whether and how integrating structured sports programs into primary schools could enhance completion rates. This study therefore, sought to investigate the effect of sports participation on school completion of primary school children of Karamoja region, Uganda. It aimed to bridge the gap in literature by examining how engagement in sports affects completion in this unique cultural and socio-economic context.

1.2 Research Objective

The Study was to examine the effect of sports participation on completion of primary school children in Karamoja Region of Uganda.

II. LITERATURE REVIEW

2.1 Theoretical Review

This study was anchored in Multiple Role Theory as the primary explanatory framework. The author of this theory is James Samuel Coleman, whose seminal 1961 study, *The Adolescent Society*, first illuminated how students' involvement in multiple, co-curricular roles could foster social integration, enhance self-worth, and increases investment in the school community (Coleman, 1961; Fredricks & Eccles, 2006). James Coleman's Multiple Role Theory of extracurricular activities posits that pupils who take on diverse co-curricular roles develop, builds self-esteem broadens their social networks, feel more connected to their school community, and ultimately enhances academic achievement.

2.2 Empirical Review

The research suggest a correlation between sports participation and academic performance such as secondary school completion and progression to tertiary institutions. Owen et al. (2024) revealed that sport participation was associated with higher odds of studying at university (OR = 1.78) and team sport participation was linked to being awarded the Higher School Certificate. Ebert (2022) found that student-athletes in a rural Florida school district had dramatically increased odds of high school graduation. Nazari (2023) noted that participation in sports, particularly individual sports like golf and tennis, yielded higher graduation rates in two-year colleges. These findings argue that sustained sports participation is associated with educational persistence and completion within structured educational systems in high-income and secondary or tertiary level contexts.

The completion benefits of sports are controlled by school connectedness, engagement, and psycho-social development. Kamau et al. (2015) found that Kenyan secondary school athletes reported a higher sense of school connectedness, a factor linked to reduced dropout rates. Kukoda (2022) indicated that sports participation strengthens commitment to school, lowers absenteeism, and decreases dropout likelihood. Studies by Muhammad (2023) and Nguri (2024) emphasized that sports instil discipline, time management, goal-setting, and resilience, which are critical for persisting to completion. Some Scholars argue that the value of sports for completion lies not in a direct causal link to the end of the cycle, but in its capacity to transform the student's relationship with the school. By fostering a sense of belonging, building life skills, and integrating students into the school's social culture, sports participation meets the behavioral factors responsible for dropout and creates conditions necessary for students to complete studies.

However, the literature also presents conditional findings that complicate a universally positive relationship. Research indicates that not all sports confer equal benefits. Nazari (2023) found significant variation in graduation odds by sport, with individual sports often showing stronger positive associations than some team sports. Tompsett et al. (2023) revealed a "dual advantage" for participants in non-revenue sports such as tennis and soccer, who had higher bachelor's degree completion rates than both non-athletes and revenue-sport athletes. Singleton (2016) found no significant difference in graduation rates between African American girls who were athletes and those who were not, showing that positive outcomes are not consistent across all demographic subgroups.

The biggest portion of the research on completion was done in the secondary and tertiary institutions in high-income nations, leaving a gap regarding primary school completion in low-resource setting countries. Empirical studies are based in Australia (Owen et al., 2024), United States (Ebert, 2022; Nazari, 2023; Tompsett et al., 2023; Singleton, 2016; Kukoda, 2022), and other high-income settings. The Kenyan study by Kamau et al. (2015) focused on secondary school connectedness in Kenya, not primary completion. Regine and Andala (2021) studied Rwandan secondary schools level. Methodologically, the studies rely heavily on quantitative analyses of administrative graduation data (Ebert, 2022), secondary literature syntheses (Muhammad, 2023; Nguri, 2024). There is a lack of mixed-methods research that explores the lived experiences and community-level mechanisms through which sports participation might influence a primary school child in a marginalized, pastoralist region to stay in school until completion. The existing literature thus fails to illuminate how this relationship manifests in primary education in marginalized regions like Karamoja, Uganda, where early school leaving is highly pronounced. No quantitative study has validated the effect of sports participation on primary school completion rates in Karamoja, Uganda, where early school leaving is most endemic and barriers to completion are uniquely cultural, economic, and security-related (Datzberger, 2022; Stites et al., 2022). This study directly addressed that gap by focusing exclusively on primary schools in this marginalized, high-attrition context, examining how sports participation impacts children's ability to complete the primary cycle.

This research was done as a counter response to these gaps. The researcher directed the geographical focus to Karamoja sub-region of Uganda, addressing the absence of both primary and secondary data from this sub-Saharan African context. The study overcame the contextual misalignment by focusing on completion rates in primary schools, a foundational chief cornerstone missed-out by the secondary and tertiary bias of existing studies. Methodologically, a mixed-methods design was employed to go beyond the quantitative studies.

III. METHODOLOGY

3.1 Research Design

The study employed a mixed methods approach in which quantitative and qualitative data were collected concurrently, analyzed separately, and then merged to provide a comprehensive understanding of the research problem (Creswell & Plano Clark, 2018). The study adopted a descriptive cross-sectional survey design, because it collects data from a population at one specific point in time to describe the status of phenomena or relationships among variables as they exist naturally (Creswell, 2014).

3.2 Study Area

The study was conducted in Karamoja region of North-Eastern Uganda situated approximately Latitude $1^{\circ}30'$ and $4^{\circ}00'N$ and Longitude $33^{\circ}30'$ and $35^{\circ}00'E$. It is a semi-arid area well known for agro-nomadic pastoralism. Karamoja covers 27,528 Sqkms with nine districts; Abim, Amudat, Kaabong, Karenga, Kotido, Moroto, Nabilatuk, Nakapiripirit, and Napak, as well as Kotido and Moroto municipalities. It has a total population of approximately 2,461,127 Million (UBOS, 2024). It has a semi-arid conditions with high temperatures. It has expanse of savannah woodlands thorn bush-lands and open grasslands dominated by a low lying plateau punctuated by mountains of; Moroto, Kadam, Napak, Morungole, Toror, Nyangia and Napore. Karamoja is home to the Karimojong ethnic group, a Nilotic people with a strong cultural attachment and mighty love for cattle.

3.2 Target Population

This comprised all primary school pupils who actively participated in sports (4,806), along with class teachers (933), sports teachers (1866), head teachers (311), District Inspectors of Schools (11), and District Sports Officers (11) in the Karamoja region. The total target population was 7938 people.

3.3 Sampling and Sample Size

The study employed purposive and simple random sampling techniques. District Sports Officers, District Inspectors of Schools, head teachers, and games and sports teachers were purposively sampled because they perform specific roles in facilitating, supervising, and implementing sports programs in schools. Class teachers and pupils were selected using simple random sampling to give every respondent an equal chance of participation, thereby reducing selection bias. Four primary schools per district were purposively selected based on their active participation in sports at district, regional, or national level, with the assistance of District Sports Officers who provided the lists of eligible schools. The sample size for pupils and headteachers was determined using the Krejcie and Morgan table for determining sample size from a given population.. From a target population of 4,806 pupils, a sample of 352 pupils was derived, while all 11 District Inspectors of Schools and 11 District Sports Officers were included due to their small population size. For class teachers, and games and sports teachers, two respondents per category were selected from each of the 44 sampled schools, resulting in a sample of 88 class teachers, and 88 games and sports teachers and 44 headteachers.

Table 1*Sample Size Distribution and sampling technique.*

Category	Population	Sample Size	Sampling Technique
Class Teachers	933	88	Simple random sampling
Head Teachers	311	44	Purposive sampling
Games and Sports Teachers	1866	88	Purposive sampling
District Inspectors of Schools	11	11	Purposive sampling
District Sports Officers	11	11	Purposive sampling
Pupils (P.5 - P.7)	4,806	352	Simple random sampling
Total	7938	594	

3.5 Data Collection Procedure and Instruments

3.5.1 Data Collection Procedure

The data collection process began with obtaining ethical clearance from St. Francis Nsambya Hospital Research Ethics Committee, and the Uganda National Council for Science and Technology (UNCST). Thereafter, permissions were sought from the Chief Administrative Officers of the respective Districts and Town Clerks of the two municipalities. Research assistants were recruited and trained on research protocols, child protection, confidentiality, and informed consent procedures, Community engagement plan and Child Assent Forms. In addition, RAs were trained on the community engagement plan which aligned with the Uganda National Council for Science and Technology guidelines on participatory and ethical research practices. Pre-testing of the tools was conducted in Katakwi district. After validity and reliability testing, the tools were deployed for main data collection. Prior to data collection, participants completed informed consent forms. For minors, consent forms were sent to class teachers and only children whose class teachers provided consent were included. Class Teachers, Sports Teachers, and District Sports Officers completed questionnaires. Headteachers from participating schools were organized into five Focus Group Discussions held at selected schools. Thereafter, interviews were conducted with District Inspectors of Schools. Throughout the process, the principles of confidentiality, anonymity, voluntary participation, and respect for respondents were strictly observed. During the process, there was audio-recording especially for the Interviews and Focus Group Discussions. The researcher obtained necessary permissions from school authorities and informed participants about the purpose of the study. The researcher Scheduled appointments. He arranged for in-depth interviews and focus group discussions scheduled at convenient times for headteachers and DISs respectively. The researcher Conducted Interviews in a comfortable and private setting to encourage open dialogue. Sessions were recorded (with consent) to ensure accurate data capture. All recorded sessions were transcribed verbatim for subsequent analysis. Questionnaires were distributed to the pupils, DSOs, Class Teachers, Sports Officers and Games and Sports Teachers. Phone calls were made to remind the respondents on the questionnaires. The data collection instruments used in this study included a questionnaire, interview guide, and a Focus Group Discussion Guide.

3.5.2 Data Collection Instruments

The researcher used the following research instruments for collecting the data. The questionnaire was administered to pupils, class teachers, sports teachers, and District Sports Officers, covering sections on demographic characteristics, sports participation and school completion. The statements within the questionnaire were closed-ended, allowing respondents to express their opinions using a 5-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree." This format ensured consistency in responses and facilitated quantitative analysis of respondents' perceptions on the effect of sports participation on literacy and numeracy among primary school going children in Karamoja region of Uganda. The questions were coded to ensure easy data analysis.

The interview guide included sections on sports participation and literacy and school completion. The interviews were conducted with District Inspectors of Schools, providing an opportunity for these officials to share their insights, experiences, and strategic perspectives on how sports participation impacts on completion rates in the Karamoja region, thereby enriching the data with detailed qualitative information. The FGD guide included open-ended questions organized under sections covering sports participation and completion rates. The discussions were held with head teachers from the sampled schools, with each FGD consisting of 8 to 10 participants. This approach captured their perspectives and experiences on the role of sports in promoting completion rates providing valuable insights into school-level challenges and opportunities.

The validity of the instruments was ensured through content and construct validation. For the questionnaire, content validity was established through expert review by academic supervisors. These experts evaluated the relevance, clarity, and coverage of the items to ensure alignment with the study objectives. The construct validity of the questionnaire was tested through pre-testing conducted in Katakwi district with 48 participants drawn from four primary schools. The validity of the interview and focus group discussion guides was established through content validity, also

reviewed by the supervisors to ensure that the tools adequately captured the depth and scope of the study variables. Katakwi is a neighboring district with similar characteristics to Karamoja. Based on the feedback received, some items were reworded for clarity and the questionnaire layout was adjusted to improve logical flow.

The reliability of the questionnaire was done through a pre-test conducted in Katakwi district involving 48 participants drawn from four primary schools. The collected data were analysed using SPSS version 27 to compute Cronbach's alpha, a measure of internal consistency that indicates how well the items within each construct measure the same underlying concept. All Cronbach's alpha values exceeded the acceptable threshold of 0.70, indicating that the questionnaire items demonstrated good internal consistency and reliability. For the interview guide and focus group discussion guide, reliability was ensured by employing a structured format with predefined questions that were consistently applied across all interviewees and FGD participants. This approach minimised interviewer bias and ensured uniformity in data collection, thereby enhancing the credibility and dependability of the qualitative findings (Flick, 2013).

3.6 Data analysis

Quantitative data from questionnaires were entered in Excel, cleaned, and analyzed in SPSS version 27. Descriptive statistics (frequencies, means, percentages, medians, interquartile ranges) summarized respondent characteristics and response patterns. While inferential techniques such as Spearman's correlation and linear regression with bootstrapping (5,000 resamples) tested the relationship between sports participation and completion rates (Hayes, 2022). Qualitative data from interviews and FGDs were transcribed, coded thematically in NVivo (version 15) and analyzed using both inductive and deductive approaches to capture patterns and contextual insights (Flick, 2013). Theme Development of Collated codes into broader themes and sub-themes that address the research objectives was done. Interpretation of Analysed themes in relation to existing literature and the study's aims, drawing connections between participant experiences and broader sport participation contexts was done.

3.7 Ethical Considerations

In regards to Ethical Considerations, the following were observed; the researcher respected the rights, interests, and dignity of all participants, recognising them as autonomous individuals whose participation was voluntary and valuable. Informed consent was obtained prior to any data collection, based on a clear explanation of the study's objectives, procedures, risks, and rights. Participants were made aware of their right to decline to answer specific questions or to withdraw from the study at any point without penalty. All data collected was treated with strict confidentiality. Information provided by participants was stored securely using encrypted digital files and locked physical storage and shared only with authorised personnel. Anonymity was carefully maintained by avoiding the collection of personally identifiable information unless explicitly necessary. The researcher ensured that no harm, whether physical, psychological, or social, came to the participants as a result of the study. The research was designed to maximise potential benefits to the Karamoja community while avoiding any exploitation of respondents. The study was conducted with academic and professional integrity, ensuring transparency, honesty, and respect throughout. Plagiarism was prevented by properly citing all external sources using APA style, and the originality of the study was verified through a plagiarism detection tool.

IV. FINDINGS & DISCUSSION

4.1 Findings

The table below shows the descriptive responses for the effect of sports participation on completion rates.

Table 2

Descriptive statistics for the effect of sports participation on completion rates.

Statement	Mean	SD	Median	IQR	% Agree/ Strongly Agree
Participation in school sports improves pupils' regular attendance throughout primary school.	4.42	0.875	5.00	1.00	89.1
Sports participation strengthens pupils' sense of belonging to the school community.	4.05	0.959	4.00	2.00	71.1
School sports establish structured routines that support continuous enrolment.	4.18	0.999	4.00	1.00	82.2
Pupils involved in sports are less likely to drop out before completing grade Seven.	4.14	0.916	4.00	1.00	80.2
Sports participation helps pupils cope with academic demands as they move between classes.	4.10	0.994	4.00	1.00	76.2

Participation in sports builds self-discipline that supports long term schooling.	4.24	0.975	4.00	1.00	85.8
Team sports create peer networks that encourage pupils to remain in school.	4.34	0.884	5.00	1.00	88.2
Pupils who participate in sports are less likely to repeat classes.	4.30	0.916	4.00	1.00	85.1
Sports participation increases pupils' confidence in their ability to complete primary school.	4.53	0.681	5.00	1.00	92.9
Participation in sports strengthens pupils' future orientation toward completing education.	4.52	0.688	5.00	1.00	92.1
Sports involvement helps pupils manage school work alongside home responsibilities.	4.54	0.677	5.00	1.00	93.1
School sports reduce exposure to social risks that interrupt primary school completion.	4.50	0.750	5.00	1.00	91.8

Descriptive statistics revealed that respondents strongly agreed that sports participation positively influences primary school completion across all 12 items, with mean scores ranging from 4.05 to 4.54. The highest agreement was recorded for sports helping pupils manage school work alongside home responsibilities ($M = 4.54$, 93.1%), increasing confidence in completing school cycle ($M = 4.53$, 92.9%), strengthening future orientation toward completing primary education ($M = 4.52$, 92.1%), and reducing exposure to social risks such as early marriage and peer pressure ($M = 4.50$, 91.8%). The lowest mean score was recorded for sense of belonging to the school community ($M = 4.05$, 71.1%), though this still reflects positive support. Overall, respondents perceived sports participation as most beneficial for building confidence, fostering future educational aspirations, helping pupils balance school and home responsibilities, and reducing exposure to social risks that could interrupt schooling and hence completing primary school cycle.

To provide a robust measure of the effect of sports participation on primary school completion rates, the items representing this construct were aggregated into a single composite variable. This was achieved by calculating the average score across the three items for each respondent, producing a score ranging from 1 to 5, with higher scores indicating a stronger perceived positive effect of sports on school completion.

The internal consistency of this composite measure was assessed using Cronbach's Alpha, which yielded a coefficient of $\alpha = .737$. This value comfortably exceeds the commonly accepted threshold of .70, confirming that the three items reliably measure the underlying construct of completion rates and justifying their aggregation into a single composite score (Nunnally & Bernstein, 1994).

As shown in Table 3 below, the overall composite score for completion rates recorded a mean of 4.41 ($SD = 0.584$). The median score of 4.67 and the interquartile range of 1.00 ($Q1 = 4.00$, $Q3 = 5.00$) indicate that the majority of respondents strongly endorsed the role of sports in supporting school completion, with responses heavily concentrated in the "Agree" to "Strongly Agree" range. Notably, the median (4.67) exceeds the mean (4.41), suggesting a slight negative skew where a high proportion of respondents gave the maximum score. These findings confirm that respondents overwhelmingly perceive sports participation as a critical factor in ensuring that pupils complete the full primary cycle, from regular attendance through to successful completion of Primary Seven.

Table 3: Descriptive Statistics for the Composite Completion Rate Score.

Composite Variable	N	Mean	SD	Median	IQR	Min	Max
Completion Rates	520	4.41	0.584	4.67	1.00	2.00	5.00

4.1.1 Thematic Analysis of Qualitative Responses

Table 4

Thematic analysis of qualitative responses on the effect of sports participation on completion rates.

Theme	Key Issues Identified	Functional Impact	frequency
Goal Orientation and Commitment	Pupils set personal and team goals; intrinsic motivation to complete primary cycle; focus on achieving objectives	Higher primary completion rates; reduced dropout before Primary Seven	11/12
Peer Networks and Social Support	Team sports create friendships and accountability; pupils encourage each other to remain in school	Sustained enrolment across class levels; reduced isolation	10/12
Self-Discipline and Resilience	Conformity to rules; fair play; sportsmanship; coping with wins and losses; perseverance through challenges	Long-term schooling; reduced class repetition	9/12
Future Orientation and Scholarships	Role models who completed education; scholarships for talented athletes; exposure through competitions	Motivation to complete primary and transition to secondary school	8/12

The most frequently cited theme was goal orientation and commitment, with respondents emphasizing that pupils set personal and team goals, develop intrinsic motivation to complete the primary cycle, and maintain focus on achieving objectives. One key informant noted:

"By setting goals both personal and team oriented, pupils develop a strong commitment to complete each year. Sports helps pupils develop resilience and coping strategies that enables them to complete year in and year out." (KII I4, 27th, November, 2025)

The peer networks and social support theme highlighted that team sports create friendships and accountability, with pupils encouraging each other to remain in school, leading to sustained enrolment across class levels and reduced isolation. The self-discipline and resilience theme revealed that conformity to rules, fair play, and sportsmanship, coping with wins and losses, and perseverance through challenges foster long-term schooling and reduce class repetition. One key informant stated:

"Conformity to the rules of the game encourages self-discipline. Sportsmanship, team play, fair play are evidences of self-discipline. Sports has set rules which must be abided by the players." (KII I2, 30th November, 2025).

The future orientation and scholarships theme indicated that role models who completed education, scholarships for talented athletes, and exposure through competitions motivate pupils to complete primary school and transition to secondary education. Focus group participants added:

"It shapes pupil future orientation because it teaches them to set goals and find ways of achieving them. As pupils get involved in sports, they are exposed to different people and environment. This gives them an impression and motivation of wanting to be better than their counterparts who are not at school." (FGD1, 1st December, 2025).

4.1.2 Correlation Analysis

The table below shows the spearman correlation between sports participation and completion rates.

Table 5

Spearman correlation between sports participation and completion rates

Correlations			
Spearman's rho		Sports Participation	Completion rates
Sports Participation	Correlation Coefficient	1.000	.992**
	Sig. (2-tailed)	.	.000
	N	450	450
Completion rates	Correlation Coefficient	.992**	1.000
	Sig. (2-tailed)	.000	.
	N	450	450

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis revealed an exceptionally strong, positive, and statistically significant relationship between sports participation and school completion ($\rho = 0.992$, $p < .001$). This association indicates that as sports participation increases, pupils' likelihood of completing the primary cycle increases in a highly consistent manner. The null hypothesis is hereby rejected, and it is concluded that sports participation has a significant positive effect on school completion among primary school children in Karamoja. According to standard benchmarks (Dancey & Reidy, 2017), this correlation coefficient represents a strong positive relationship, suggesting that sports participation may be a critical factor in reducing dropout and ensuring pupils persistence through the full primary cycle in this pastoralist context.

4.1.3 Regression Analysis

Table 6

Linear regression results for the effect of sports participation on completion rates

Bootstrap for Coefficients					
	B		Bootstrap ^a		
			Bias	Std. Error	Sig.
(Constant)	.592		-.007	.134	.001
	.870		.002	.030	.000
a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples					
Coefficients ^a					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.592	.041		14.303	.000
Sports Participation	.870	.010	.974	91.528	.000
a. Dependent Variable: Completion rates					
R	R Square	Adjusted R Square	Std. Error	F Statistic	Sig.
.974 ^a	.949	.949	.11607	8377.374	.000 ^b

The linear regression analysis found out a statistically significant positive relationship between sports participation and school completion in Karamoja sub-region of Uganda. The R Square value of 0.949 shows that participating in sports is responsible for approximately 94.9% of the variance in completion, indicating a big and exceptionally dominant contribution. The finding further indicate that structured sporting activities create a powerful sense of commitment, belonging, and perseverance that makes learners motivated to endure up to primary seven despite the many challenges including long distances to school, household chores, cattle herding responsibilities, food insecurity, and security concerns.

The overall regression analysis results was statistically significant ($F = 8377.374$, $p = 0.000$), confirming that participating in sports is associated with school completion.. The unstandardized coefficient ($B = 0.870$) shows that for every one-unit increase in sports participation, completion rates increase by 0.870 units. The standardized Beta coefficient ($\beta = 0.974$) reflects exceptionally strong effect size approaching a near-perfect relationship, while the t-value of 91.528 ($p < 0.001$) further underscores the strength of this relationship. Bootstrapping with 5,000 resamples confirmed the robustness of these findings, with the bootstrapped estimate ($B = 0.870$, Bootstrap Bias = 0.002) remaining consistent and the bootstrapped p-value significant at $p < .001$, indicating the relationship is not an artifact of normality violations or outliers.

These findings strongly reject the null hypothesis that sports participation has no significant effect on completion rates among primary school children of Karamoja region, Uganda. The high R Square value of 0.949 shows that only 5.1% of the variance in completion rates is explained by factors other than participating in sports. While elements such as parental support, school feeding programs, teacher quality, and safe school environments may contribute to completion, sports participation emerges as a key factor. Therefore, investing in structured sporting activities in primary schools across Karamoja may be one of the most effective strategies for drastically enhancing primary school completion rates breaking the cycle of intergenerational poverty and marginalization in the region.

4.2 Discussion

The finding that participating in sports explains 94.9% of variance in school completion rates represent a very strong association. Regine and Andala (2021) found out that sports participation accounted for 78.5% of academic performance variance in Rwandan secondary schools, while Owen et al. (2024) further noted that continued sport participation was associated with higher odds of university study ($OR = 1.78$). The strong correlation ($\rho = 0.992$) suggests that in this high-attrition nomadic pastoralist context, sports may be one of the most critical factors contributing to children's' persistence through the full primary cycle, providing a rare powerful combination of incentives, structure, belonging, and future orientation that no other intervention can provide to school completion (Datzberger, 2022; Stites et al., 2022). The finding that confidence in completing school (Mean=4.53, 92.9% agreement) and future orientation toward completing education (Mean=4.52, 92.1% agreement) were among the most strongly agreed items that align with Muhammad (2023) and Nguri (2024) who asserted that sports cultivate goal-setting and resilience. Kukoda (2022) asserted that sports strengthens commitment to school through positive academic identity and future aspirations and all are aimed at school completion.

The finding that sports help pupils manage school work alongside home responsibilities (Mean=4.54, 93.1% agreement) addresses a contextual reality of pastoralist communities where pupils face a lot of livelihood demands including cattle herding, domestic chores, water collection, care for younger siblings and gardening (Brown et al., 2017). All these have a strong bearing towards children's school completion. The finding that sports reduce exposure to social risks (Mean=4.50, 91.8% agreement) aligns with Ebert (2022) who found student-athletes had increased odds of graduation, and the Arkansas Higher Education Coordinating Board (2024) who documented higher retention for student-athletes. In Karamoja, these social risks include early marriage, cattle raiding, peer pressure to drop out, and community violence (Stites et al., 2022; Datzberger, 2022). The goal orientation theme (11/12 responses) aligns with Owen et al. (2024) and Tompsett et al. (2023) who asserted that student-athletes in non-revenue sports had higher completion rates. The peer networks theme (10/12 responses) aligns with Kamau et al. (2015) who established that student-athletes reported higher school connectedness, and Kukoda (2022) who indicated that social integration acts as a shield against withdrawal.

The self-discipline and resilience theme (9/12 responses) confirms Muhammad (2023) and Nguri (2024) who emphasized that participating in sports cultivates self-discipline and time management, with the qualitative finding that pupils who participate in sports concentrate in class, are alert, and pass with high grades suggesting that self-discipline transfers directly to academic commitment. The future orientation and scholarships theme (8/12 responses) expands the existing studies by recording a mechanism particularly important in resource-poor contexts, with Nazari (2023) finding that sports participation resulted in higher graduation rates with scholarship opportunities as a motivating factor. The current study provided the first quantitative evidence from a high-attrition nomadic pastoralist context of Karamoja, filling the critical gap identified by Mollel and Otieno (2022) in Tanzania and Datzberger (2022) in Karamoja. The R^2 value of 0.949 means that only 5.1% of the variance in completion rates is explained by factors other than participating in sports. This suggests that while parental support, school feeding programs, teacher quality, and safe school environments contribute to completion, participating in sports is a contributing factor in this context, and having structured sports programs in the schools implies as the most effective intervention for keeping children in school through to completion.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Sports participation has a very strong, positive, and statistically significant effect on primary school completion in Karamoja, explaining 94.9% of the variance in whether pupils complete the full primary cycle. The relationship between sports participation and completion rates ($\rho = 0.992$) is almost perfect association, meaning that the relationship is very strong. Sports participation enhances completion rates by building pupils' confidence in their ability to complete school, strengthening their future orientation toward completing education, helping them manage school work alongside home responsibilities, and reducing exposure to social risks that interrupt schooling. The discipline, goal orientation, peer support, and resilience cultivated through sports involvement create a powerful combination of protective factors that enable pupils to persist through the full seven-year primary cycle despite the numerous challenges facing education in pastoralist contexts, including long distances, household chores, cattle herding responsibilities, food insecurity, early marriage, and security concerns. Sports participation accounts for over 94% of the explained variance in completion outcomes, making it the dominant, overwhelming predictor of whether a child will complete primary school in Karamoja.

5.2 Recommendations

The Ministry of Education and Sports should establish longitudinal sports participation pathways by keeping the same cohort of pupils engaged from Primary One through grade seven with progressively advanced competitions and recognition milestones. This should be coupled with Schools tracking systems to monitor progress. Schools should implement attendance-eligibility policies requiring pupils to attend school regularly to participate in sports. These policies should be communicated clearly to pupils and parents at the start of each term through termly and annual circular letters and also during the annual parent meetings (AGMs). The Ministry of Education and Sports should train coaches in mentoring and future orientation and strategies for linking sports success to educational outcomes. Coaches should share success stories of former athletes who completed school and help pupils set both athletic and academic goals. The Ministry of Education and Sports should prioritize sports program funding for districts with low completion rates, with Karamoja receiving the highest per-pupil allocation. Funding should be conditional on schools demonstrating improved completion rates among vulnerable subgroups including girls and pastoralist children.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.



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