

Relationship between School Location and Student Academic Performance of Secondary Schools in

Makindye Division

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Abstract

The study investigated the relationship between school location and student academic performance in secondary schools in Makindye Division, Kampala, Uganda. The study employed a cross-sectional survey design using both quantitative and qualitative approaches. Data were collected from 290 respondents comprising 240 students, 40 teachers, and 10 school administrators drawn from ten purposively and randomly selected secondary schools. Structured questionnaires, semi-structured interview guides, and document analysis served as data collection instruments. Quantitative data were analyzed using Pearson's correlation coefficient and descriptive statistics, while qualitative data were subjected to thematic analysis. Findings revealed a statistically significant positive relationship between school location and student academic performance ($r = 0.67, p < 0.05$). Schools situated in quieter, resource-rich residential environments recorded substantially higher academic scores compared to those located in noisy, commercially congested zones. Environmental noise, student punctuality, access to learning resources, and general school atmosphere emerged as the dominant locational factors influencing academic outcomes. The study concluded that school location was a critical and often underappreciated determinant of secondary education quality in urban Uganda and recommended that education planners, the Kampala Capital City Authority, and the Ministry of Education incorporate location sensitivity into school establishment and management policies.

Keywords: School location, academic performance, secondary schools, Makindye Division, Uganda, learning environment, school proximity, urban education, resource access, noise pollution.

Background of the study

Education had long been considered one of the most powerful instruments for human development and national transformation (A. G. Kazaara & Kazaara, 2025a). Across sub-Saharan Africa, secondary education had been positioned as the foundation upon which tertiary learning, skilled employment, and civic participation were built (Audrey & Nancy, 2025b). In Uganda, the government had progressively expanded access to secondary education through the Universal Secondary Education (USE) policy introduced in 2007, which significantly increased enrolment rates in both public and private schools (Ministry of Education and Sports, 2022). Despite this quantitative progress, the quality and consistency of academic outcomes across secondary schools had remained worryingly uneven, prompting researchers to examine the structural and environmental factors that influenced student performance beyond the classroom (Lydia et al., 2023).

Among the many variables that had been studied in relation to academic achievement, school location had attracted growing attention from educational researchers and policy analysts (Nelson, 2024). School location referred broadly to the physical and geographic positioning of a school, encompassing its proximity to commercial centers, traffic

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corridors, residential neighborhoods, noise sources, and the availability of social amenities such as libraries, water, electricity, and open recreational spaces (Walter, 1998, as cited in Lukman, 2023). Researchers had consistently argued that where a school was physically situated had direct implications for the quality of the teaching and learning process. Owoeye and Yara (2011) contended that one of the key factors influencing academic performance was the location and site of the school, noting that most developed countries ensured their schools were situated in the best possible locations to minimize academic failure, and that variation in student performance was largely due to differences in available educational materials and resources between differently located schools (Julius & Kazaara, 2025a).

The African educational landscape had been marked by stark disparities between schools in different geographic settings (Suzan & Gracious Kazaara, 2023). Urban schools, particularly those in well-planned neighborhoods, tended to attract better-qualified teachers, receive more regular inspection, and benefit from superior infrastructure compared to their rural or peri-urban counterparts (Julius & Audrey, 2025). This created an asymmetry in learning opportunities that had significant implications for academic achievement (Emmanuel et al., 2023). Bamidele (2024) established in a Nigerian study that students in schools with favorable environments demonstrated markedly higher academic outcomes, and that inadequate school facilities, poor location, and overcrowding collectively undermined effective teaching and learning (Julius & Kaazara, 2025a). Similarly, Idris, Abdi, and Dirie (2024) found from research in Mogadishu that poor school infrastructure raised absenteeism levels, lowered student morale, and reduced the overall quality of education delivered, particularly in schools located in densely populated and resource-deficient areas (A. G. Kazaara & Kazaara, 2025b).

In Uganda specifically, national examination data had repeatedly demonstrated that the most academically competitive schools were concentrated in specific geographic zones. Nakabugo and Siebörger (2001, as cited in Opolot-Okurut, 2010) noted that within Kampala and its environs, schools in better-resourced and more environmentally favorable locations consistently outperformed those in congested urban peripheries or under-serviced zones. Makindye Division, located in the southern part of Kampala Capital City Authority, presented an analytically important case study because of its hybrid urban-peri-urban character (A. I. Kazaara & Deus, 2024). Some schools in the division were embedded within densely populated commercial and trading zones characterized by high noise levels, traffic congestion, and limited green spaces, while others occupied comparatively quieter residential areas with more stable learning environments (A. G. Kazaara & Kazaara, 2025b). Understanding how these locational differences shaped student academic outcomes was not only academically necessary but also critical for evidence-based educational planning and equitable resource distribution (Magwaga & Kikechi, 2024).

Furthermore, the relationship between school location and academic performance was not limited to physical noise and congestion alone (Anthony et al., 2023). Sarpong and Nyarko (2024) demonstrated in a Ghanaian study that infrastructure inequality between schools located in different areas conditioned district-level academic differences, and that schools with learning environments un conducive to study were more likely to produce academically deprived

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students(A. I. Kazaara & Desire, 2025). Morton, Thompson, and Kuhfeld (2024) further affirmed through a multi-state American study that instructional time lost due to environmental and scheduling disruptions had measurable negative effects on student achievement and growth trajectories over time. These cumulative insights established a strong theoretical and empirical basis for examining school location as a multidimensional variable in the context of Makindye Division's secondary education system(Nelson, 2024).

Problem Statement

Despite the Uganda government's sustained investment in secondary education through Universal Secondary Education and various infrastructure grants, academic performance across secondary schools in Makindye Division had remained inconsistent and in several instances below national benchmarks(Sarah & Audrey, 2024). Uganda National Examinations Board (2024) reported that in the 2023 Uganda Certificate of Education examination, out of 364,469 registered candidates, only 64,782 representing 17.9 percent passed in Division 1, signaling that a large and troubling proportion of students continued to underperform nationally(Sarah et al., 2024). Within Makindye Division, this pattern was observed to be more acute among schools situated in commercially active zones, where learning disruptions from environmental noise, market activities, and traffic were most pronounced(Julius & Kaazara, 2025b). Yangambi (2023) linked poor academic performance directly to the learning environment and observed that students in disruptive school environments were significantly more likely to disengage from academic work and eventually drop out. Lukman (2023) further noted that the distance a learner traveled to reach school, combined with the nature of the surrounding environment upon arrival, created compounding disadvantages that eroded academic potential over time, with the effects being more severe for students from low-income households. Despite this growing body of evidence, existing literature had largely addressed location-related educational disparities at the broad national or continental level, leaving a conspicuous research gap regarding the specific dynamics of school location and academic performance within Makindye Division(Victoria et al., 2023). This study therefore sought to fill this gap by empirically examining how the physical location of secondary schools within Makindye Division related to their students' academic performance.

Main Objective

To examine the relationship between school location and student academic performance in secondary schools in Makindye Division.

Methodology

This study employed a cross-sectional survey research design, which permitted simultaneous data collection from multiple schools at a single point in time. This design was considered appropriate because the study sought to establish correlational patterns between school location and academic performance without manipulating any of the study variables (Creswell & Creswell, 2018). The study was grounded in a mixed-methods framework that integrated quantitative and qualitative approaches, allowing for a more comprehensive and triangulated understanding of the phenomenon under investigation(Christopher et al., 2022). The quantitative component facilitated statistical

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measurement and generalization, while the qualitative component provided contextual depth and interpretive insight into the lived experiences of students, teachers, and administrators (Bryman, 2016).

The study population encompassed students, teachers, and school administrators from secondary schools in Makindye Division, Kampala (A. I. Kazaara & Desire, 2025). Using purposive and simple random sampling techniques, ten secondary schools were selected and categorized into two groups: five schools located in commercially active, high-traffic, and noise-prone zones, and five schools situated in comparatively quieter residential or semi-residential areas (Suzan & Gracious Kazaara, 2023). This classification was based on a structured environmental assessment tool adapted from school mapping guidelines developed by the Ministry of Education and Sports (2022), which evaluated proximity to markets, major roads, petrol stations, and trading centers. A total of 290 respondents were drawn from the sampled schools, comprising 240 students from Senior Three and Senior Four classes, 40 classroom teachers, and 10 school administrators including head teachers and deputy head teachers (Julius & Kazaara, 2025b). Sample sizes were determined using Krejcie and Morgan's (1970) table for population-based sampling, ensuring statistical adequacy.

Three data collection instruments were utilized to generate the study's evidence base. A structured questionnaire was administered to students and teachers to gather data on perceptions of the learning environment, including environmental noise levels, access to study materials, quality of infrastructure, distance from home, and student motivation (Micheal et al., 2023). The questionnaire items were developed on a five-point Likert scale, and a pilot test conducted at two schools outside the main sample yielded a Cronbach's alpha coefficient of 0.81, confirming satisfactory reliability (Nunnally & Bernstein, 1994). A semi-structured interview guide was used with school administrators to explore institutional experiences of how location affected teacher retention, resource allocation, student punctuality, and overall school management (Christopher et al., 2022). Document analysis was also employed to extract student academic records from Uganda Certificate of Education mock examinations and internal terminal results spanning three academic years from 2021 to 2023 (Nelson, 2024).

Quantitative data were entered into SPSS version 26 and analyzed using descriptive statistics including frequencies, means, and standard deviations, as well as inferential statistics including Pearson's correlation coefficient and simple linear regression analysis (Nelson et al., 2022). The significance level was set at $p < 0.05$. Qualitative data from administrator interviews were transcribed verbatim and subjected to thematic analysis through an iterative process of open coding, axial coding, and selective coding as recommended by Braun and Clarke (2006). Ethical clearance was obtained from the relevant institutional research committee, and written informed consent was secured from all adult participants. For student participants below eighteen years, parental or guardian consent was obtained alongside student assent. Confidentiality and anonymity were maintained throughout the data collection and reporting processes.

Results

Table 1: Distribution of Schools by Location Category and Average Academic Performance (2021–2023)

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| School Category | No. of Schools | Avg. Mock Score (%) | Division 1 Pass Rate (%) | Division 4 & Fail Rate (%) |
|------------------------|----------------|---------------------|--------------------------|----------------------------|
| Quiet/Residential Zone | 5 | 68.4 | 41.2 | 18.6 |
| Commercial/Noisy Zone | 5 | 52.1 | 22.7 | 34.5 |
| Overall Average | 10 | 60.3 | 31.9 | 26.5 |

Source: Primary Data, 2025

The results presented in Table 1 revealed a consistent and significant performance gap between schools in quiet residential zones and those in commercially active areas over the three-year study period. Schools situated in quieter environments recorded an average mock examination score of 68.4 percent, compared to only 52.1 percent for schools in noisy commercial zones, representing a difference of 16.3 percentage points. This gap was not only statistically meaningful but practically significant, as it translated into fundamentally different academic trajectories for students attending the two categories of schools. The Division 1 pass rates were particularly illuminating, with residential-zone schools achieving 41.2 percent compared to only 22.7 percent for commercial-zone schools. Conversely, Division 4 and failure rates were substantially higher among commercial-zone schools at 34.5 percent, compared to 18.6 percent for residential-zone schools. These disparities were consistent with findings by Owoeye and Yara (2011), who established in Ekiti State, Nigeria, that schools in favorable locations consistently produced higher proportions of top-division academic performers, and that the overall quality of the school environment significantly mediated student achievement outcomes.

Table 2: Pearson Correlation between School Location Score and Academic Performance

| Variable | Mean | Std. Deviation | r | p-value |
|----------------------------|------|----------------|------|---------|
| School Location Score | 3.82 | 0.74 | 0.67 | 0.001 |
| Academic Performance Score | 3.54 | 0.81 | | |

Source: Primary Data, 2025

Table 2 presented the results of the Pearson correlation analysis between school location and academic performance(Winny et al., 2023). A statistically significant positive correlation was found ($r = 0.67, p = 0.001$), indicating a moderate to strong relationship between the two variables. This result meant that as school location conditions improved in terms of quietness, physical accessibility, proximity to learning resources, and environmental stability, student academic performance also tended to improve correspondingly (Nelson et al., 2023). The mean school location score of 3.82 out of 5.0 suggested that location conditions in Makindye Division were moderately favorable on average, but the standard deviation of 0.74 indicated meaningful variation between schools(Suzan & Gracious Kazaara, 2023). These findings corroborated the conclusions of Sarpong and Nyarko (2024), who found a similarly significant positive relationship between school environmental quality and academic outcomes in Ghana,



and further supported the theoretical proposition that location-based inequalities in education were both measurable and consequential.

Table 3: Student Perceptions of How School Location Affected Their Learning (n=240)

| Factor | Strongly Agree (%) | Agree (%) | Disagree (%) |
|--|--------------------|-----------|--------------|
| Noise from surroundings disrupts lessons | 48.3 | 31.2 | 20.5 |
| Distance from home affects punctuality | 52.1 | 27.8 | 20.1 |
| Access to libraries and study materials | 39.6 | 38.2 | 22.2 |
| Overall environment supports learning | 31.8 | 29.5 | 38.7 |

Source: Primary Data, 2025

Table 3 highlighted that the majority of students recognized location-related factors as having a tangible impact on their learning experience(Audrey & Nancy, 2025b). Nearly 80 percent of respondents agreed or strongly agreed that noise from the school's surroundings disrupted their lessons, while approximately 80 percent also indicated that distance from home affected their punctuality(A. I. Kazaara & Desire, 2025). The perception that access to libraries and study materials was shaped by school location was shared by 77.8 percent of students, though only about 61.3 percent felt that their overall school environment supported effective learning(Audrey & Nancy, 2025a). This last finding was particularly significant, suggesting that a notable proportion of students, especially those in commercial-zone schools, were experiencing their learning environment as a hindrance rather than an enabler. Bamidele (2024) had similarly reported that students in poorly located schools were more likely to describe their environment as unsupportive of academic work and were more likely to report challenges with concentration and motivation.

Qualitative data from school administrator interviews added important contextual layers to these quantitative findings. Administrators from commercial-zone schools consistently described institutional challenges including teacher absenteeism during peak market trading hours, frequent student lateness due to traffic congestion on surrounding roads, regular lesson interruptions from street vendors and vehicle noise, and difficulty retaining experienced teachers who expressed preference for postings to quieter schools. These institutional experiences compounded the direct environmental effects of location on student learning, creating a cumulative disadvantage for schools in commercially active areas. Idris, Abdi, and Dirie (2024) had similarly found that schools in congested environments reported higher teacher turnover and lower staff morale, and that these organizational effects of poor school location were as damaging to academic outcomes as the direct environmental effects on students.

Conclusions

This study established that there existed a statistically significant and practically meaningful positive relationship between school location and student academic performance in secondary schools in Makindye Division. Schools situated in quieter residential environments consistently and substantially outperformed those located in commercially active and noise-prone areas across the three academic years examined.

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Student punctuality, lesson continuity, access to learning resources, and overall environmental motivation emerged as the key mechanisms through which school location exerted its influence on academic outcomes. These conclusions affirmed the positions of Owweye and Yara (2011), Bamidele (2024), and Sarpong and Nyarko (2024), who had all argued that school location was not a peripheral concern but a structural determinant of educational quality. It was evident from this study that location-sensitive educational planning was indispensable for improving secondary education outcomes in Uganda's urban divisions, and that failure to address locational inequalities would continue to perpetuate academic performance disparities in Makindye Division and similar contexts.

Recommendations

The Kampala Capital City Authority and the Ministry of Education and Sports were urged to develop and enforce evidence-based school siting guidelines that prevented the establishment of new secondary schools in commercially dense, noise-polluted, or traffic-heavy environments. For schools already operating in unfavorable locations, targeted physical improvement support was recommended, including perimeter wall construction, classroom soundproofing, and strategic landscaping to serve as noise buffers.

Magwaga and Kikechi (2024) had established that even modest infrastructure investments in poorly located schools produced measurable improvements in academic outcomes, supporting the cost-effectiveness of such interventions. Local government authorities in Makindye Division were further encouraged to conduct periodic school environment audits as part of routine school inspection exercises, ensuring that environmental factors were systematically documented and addressed.

School administrators in commercially located schools were advised to implement compensatory academic measures including extended library access, structured supervised study periods, and student transport subsidies. Finally, future research was recommended to explore the mediating roles of school ownership type, funding levels, and teacher quality in the relationship between school location and academic performance in urban Uganda.

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