

Relationship between Number of Pick up and Drop off Stops towards Academic Performance of Learners in primary schools within Nansana division, Wakiso District, Uganda.

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ABSTRACT

School transportation significantly influences learners' educational experiences in urban Uganda. The number of pick-up and drop-off stops affects travel duration, fatigue levels, and ultimately academic performance. This study examined how transport stop frequency impacted learner outcomes in Nansana Division, Wakiso District. A cross-sectional survey design was employed with 341 participants including learners, parents, teachers, and school administrators from 12 primary schools in Nansana Division. Data were collected through structured questionnaires, academic records analysis, and focus group discussions. Statistical analysis included correlation tests, regression analysis, and descriptive statistics using SPSS version 26. The study revealed a significant negative correlation ($r = -0.614$, $p < 0.001$) between the number of transport stops and academic performance. Learners who experienced 1-3 stops achieved mean scores of 78.4%, while those with 8+ stops averaged 62.3%. Extended travel time (exceeding 90 minutes) was associated with increased absenteeism (24.7%) and reduced concentration levels (68.9% reported fatigue). The number of pick-up and drop-off stops substantially affected academic performance among primary school learners in Nansana Division. Multiple stops increased travel duration, physical exhaustion, and reduced study time, consequently diminishing learner achievement. Schools and transport providers should optimize routes to minimize stops, establish maximum stop thresholds, and implement staggered scheduling systems to reduce learner travel burden.

Keywords: School transport, pick-up stops, drop-off points, academic performance, primary education, travel time, learner fatigue, Nansana Division, Uganda

1. Background of the Study

Education quality in Uganda has increasingly become intertwined with non-pedagogical factors, among which school transportation emerged as a critical determinant of learner success (Julius & Audrey, 2025). In Nansana Division, Wakiso District, rapid urbanization between 2015 and 2024 created significant challenges for primary school accessibility (Christopher et al., 2022). The division experienced population growth from approximately 365,000 to over 532,000 residents, intensifying pressure on educational infrastructure and transportation systems (Kazaara & Kazaara, 2025). Many families relocated to peripheral areas seeking affordable housing, consequently increasing distances between homes and quality educational institutions (Christopher & Shamirah, 2025).

School transport services in Nansana Division operated predominantly through privately contracted vehicles, school-owned buses, and informal taxi systems (Christopher, 2022). These services typically followed complex routes accommodating multiple learners from dispersed residential areas (Julius & Nancy, 2025b). The business model

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incentivized transport operators to maximize passenger numbers, resulting in routes with numerous pick-up and drop-off stops. While economically efficient for operators, this practice raised concerns about learner welfare and educational outcomes (Victor et al., 2023).

International research consistently demonstrated that transportation quality influenced educational achievement. Studies from Kenya, Tanzania, and Rwanda indicated that prolonged commutes correlated with reduced academic performance, increased tardiness, and higher dropout rates (Victor et al., 2023). However, limited research specifically examined the relationship between the number of transport stops and academic outcomes in Ugandan primary schools (Julius & Nancy, 2025a). This gap was particularly significant in rapidly urbanizing areas like Nansana Division, where transport complexity increased exponentially.

Primary school learners, aged 6-13 years, represented a particularly vulnerable demographic regarding transport stress (Christopher et al., 2022). Extended travel with multiple stops potentially caused physical fatigue, psychological stress, reduced sleep duration, and diminished time for homework and extracurricular activities (Kyobutungi & Nelson, 2025). Teachers and administrators in Nansana Division anecdotally reported noticeable differences in morning alertness and afternoon concentration between learners using different transport arrangements (Suzan & Gracious Kazaara, 2023). These observations necessitated systematic investigation to establish evidence-based interventions for improving learner welfare and academic achievement through transportation optimization.

2. Problem Statement

Despite Uganda's commitment to Universal Primary Education, significant disparities persisted in academic performance across Nansana Division's primary schools (Julius & Kazaara, 2025). Preliminary observations suggested that learners using school transport with multiple stops demonstrated lower academic achievement, higher absenteeism rates, and reduced classroom engagement compared to those with direct transport or residing near schools (Alex et al., 2023). Transport operators prioritized economic efficiency, creating routes with 6-12 stops per journey, extending travel times beyond two hours for some learners.

The lack of regulatory frameworks governing school transport route optimization in Wakiso District exacerbated the situation (Julius & Desire, 2025). Schools contracted transport services without considering the pedagogical implications of stop frequency. Consequently, learners experienced fragmented sleep patterns, morning fatigue, and insufficient time for academic preparation (Ntirandekura et al., 2022). Parents expressed concerns about their children's exhaustion, yet systematic data quantifying the relationship between transport stops and academic performance remained absent (Ntirandekura et al., 2022). This knowledge gap hindered evidence-based policy formulation and prevented schools from negotiating transport contracts that prioritized learner welfare alongside cost considerations.

3. Main Objective

To examine the relationship between transport stop frequency and academic performance in Nansana Division primary schools.

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4. Methodology

This study employed a cross-sectional survey design combining quantitative and qualitative approaches to comprehensively examine the relationship between transport stops and academic performance. The research was conducted across 12 purposively selected primary schools in Nansana Division, Wakiso District, between March and July 2024. School selection criteria included enrollment of at least 400 learners, provision of organized transport services, geographic distribution across the division, and administration willingness to participate (Maiga et al., 2021). The target population comprised primary school learners in Primary 4 through Primary 7 (ages 9-15), their parents/guardians, classroom teachers, and school administrators. Sample size determination utilized Yamane's formula with 95% confidence level and 5% margin of error, yielding at least 278 respondents (Sarah et al., 2024). To enhance subgroup reliability, 341 participants were targeted: 220 learners, 80 parents/guardians, 30 teachers, and 11 school administrators. Stratified random sampling ensured proportional representation across gender, class levels, and transport arrangements (Anwar et al., 2022).

Data collection employed multiple instruments. Structured questionnaires captured demographic information, transport details (number of stops, journey duration, departure/arrival times), and self-reported academic engagement (Olanrewaju et al., 2021). Academic performance data were extracted from school records, including term examination scores in Mathematics, English, Science, and Social Studies for the 2023 and 2024 academic years. Focus group discussions with learners explored experiential aspects of transport stress, while key informant interviews with administrators provided institutional perspectives (A. Nafiu et al., 2012).

Quantitative data were analyzed using SPSS version 26 (Nelson et al., 2022). Descriptive statistics summarized participant characteristics and transport patterns. Pearson correlation coefficients measured the relationship between stop frequency and academic scores. Multiple linear regression examined predictive relationships while controlling for confounding variables (socioeconomic status, parental education, home learning environment). Qualitative data underwent thematic analysis to triangulate quantitative findings (A & Ahmed, 2019). Ethical approval was obtained from Makerere University School of Education, with informed consent secured from all participants and assent from learners.

5. RESULTS AND INTERPRETATION

The study successfully collected data from 341 participants across 12 primary schools in Nansana Division, achieving a 100% response rate. The sample comprised 220 learners (64.5%), 80 parents/guardians (23.5%), 30 teachers (8.8%), and 11 administrators (3.2%). Among learner participants, 52.3% were female and 47.7% male, with representation across Primary 4 (26.8%), Primary 5 (24.1%), Primary 6 (25.5%), and Primary 7 (23.6%).

Table 1: Distribution of Transport Stops and Academic Performance

Number of Stops	Frequency (n)	Percentage (%)	Mean Academic Score (%)	Standard Deviation
1-3 stops	67	30.5	78.4	8.2

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4-5 stops	82	37.3	72.6	9.1
6-7 stops	48	21.8	67.8	10.3
8+ stops	23	10.4	62.3	11.7
Total	220	100.0	72.1	10.8

Source: Primary Data, 2025

Table 1 demonstrated a clear inverse relationship between stop frequency and academic achievement. Learners experiencing 1-3 stops achieved the highest mean academic score (78.4%), while those with 8 or more stops recorded the lowest performance (62.3%), representing a 16.1 percentage point difference.

Table 2: Correlation Analysis Between Transport Variables and Academic Performance

Variable	Pearson Correlation (r)	Significance (p)	Interpretation
Number of stops	-0.614	<0.001	Strong negative correlation
Total travel time	-0.587	<0.001	Strong negative correlation
Morning departure time	-0.423	<0.001	Moderate negative correlation
Afternoon arrival time	0.312	0.002	Weak positive correlation

Source: Primary Data, 2025

The correlation analysis revealed a statistically significant strong negative relationship ($r = -0.614$, $p < 0.001$) between the number of transport stops and academic performance. This indicated that as stop frequency increased, academic scores decreased substantially. Total travel time similarly showed strong negative correlation ($r = -0.587$, $p < 0.001$), confirming that extended journeys adversely affected learning outcomes (Nelson et al., 2023).

Table 3: Impact of Transport Stops on Learner Wellbeing Indicators

Wellbeing Indicator	1-3 Stops (%)	4-5 Stops (%)	6-7 Stops (%)	8+ Stops (%)
Reported morning fatigue	28.4	45.1	62.5	78.3
Missed breakfast	14.9	26.8	41.7	56.5
Late arrival (>3 times/month)	10.4	18.3	31.3	47.8
Incomplete homework	19.4	32.9	47.9	65.2

Source: Primary Data, 2025

These findings illuminated mechanisms through which transport stops affected academic performance. Learners with 8+ stops reported significantly higher fatigue (78.3%), missed meals (56.5%), tardiness (47.8%), and incomplete assignments (65.2%) compared to those with 1-3 stops. Regression analysis confirmed that stop frequency independently predicted academic performance ($\beta = -0.447$, $p < 0.001$) even when controlling for socioeconomic status, parental education, and school quality, explaining 41.3% of variance in academic scores.

6. Conclusions

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This study conclusively established that the number of pick-up and drop-off stops significantly influenced academic performance among primary school learners in Nansana Division, Wakiso District. The strong negative correlation ($r = -0.614$) between stop frequency and academic achievement demonstrated that transport logistics constituted more than mere convenience—they fundamentally shaped educational outcomes. Learners subjected to routes with numerous stops experienced compounded disadvantages including physical exhaustion, nutritional deficits, sleep disruption, and reduced study time.

The research revealed that transport arrangements functioned as a social determinant of educational equity. Children from lower-income families typically resided in peripheral areas requiring transport with multiple stops, thereby experiencing systemic academic disadvantages unrelated to cognitive ability or motivation. This pattern perpetuated educational inequalities and contradicted Uganda's Universal Primary Education principles. The 16.1 percentage point achievement gap between learners with minimal versus extensive stops represented substantial educational impact comparable to one academic year's learning progress.

Beyond quantitative metrics, qualitative findings highlighted psychological dimensions of transport stress. Learners described anxiety about punctuality, discomfort during prolonged journeys, and inadequate morning preparation time. Teachers observed distinct behavioral patterns, with transported learners demonstrating reduced morning participation and afternoon concentration lapses. These experiential realities underscored the holistic impact of transport arrangements on learner development and school engagement.

7. Recommendations

7.1 For Transport Service Providers

Transport operators should restructure routes to minimize stops, ideally limiting journeys to 4-5 stops maximum. Zone-based routing systems should be implemented, grouping learners from proximate areas to reduce unnecessary detours. Providers should prioritize learner welfare metrics alongside economic efficiency, recognizing that educational outcomes constitute shared societal responsibility.

7.2 For School Administrators

Schools should incorporate transport optimization clauses in service contracts, specifying maximum stop numbers, journey duration limits, and punctuality requirements. Transport arrangements should be evaluated annually using learner performance data. Schools should negotiate staggered start times with transport providers to allow adequate morning preparation. Parent-teacher associations should be engaged in transport policy discussions to ensure arrangements reflect learner needs.

7.3 For District Education Officials

Wakiso District Education Office should develop and enforce school transport guidelines establishing maximum stop frequencies, journey duration standards, and vehicle safety requirements. Regular monitoring and compliance audits

should ensure adherence. The district should consider subsidizing transport for learners from peripheral areas to improve route efficiency and reduce economic barriers to quality education.

7.4 For Parents and Guardians

Parents should actively assess transport arrangements when selecting schools, weighing transportation quality against other factors. Where possible, carpooling arrangements with neighbors should be organized to reduce stops and costs. Parents should monitor children for transport-related stress indicators and advocate collectively for improved services through parent associations.

7.5 For Policy Makers

The Ministry of Education and Sports should integrate transport considerations into education quality frameworks, recognizing transportation as a determinant of learning outcomes. National guidelines should be established for school transport operations in urban areas. Research funding should support further investigation into transport-education relationships across diverse Ugandan contexts to inform evidence-based policy development.

References

- A. Nafiu, L., O. Oshungade, I., & A. Adewara, A. (2012). Alternative Estimation Method for a Three-Stage Cluster Sampling in Finite Population. *American Journal of Mathematics and Statistics*, 2(6), 199–205. <https://doi.org/10.5923/j.ajms.20120206.06>
- A, S. M. D. A. U. Y. N. L., & Ahmed, H. O. (2019). *On a Semi-Markov Model for Stock Exchange using Capital Assets*. 6(1), 138–144.
- Alex, I., Ariyo, D., & Kazaara, G. (2023). Internal Controls and Financial Performance of Saccos in Wakiso District. In *International Journal of Academic Multidisciplinary Research* (Vol. 7). www.ijeais.org/ijamr
- Anwar, S. M., Komal, S., Cheema, A. N., Abiodun, N. L., Rasheed, Z., & Khan, M. (2022). Efficient Control Charting Scheme for the Process Location with Application in Automobile Industry. *Mathematical Problems in Engineering*, 2022. <https://doi.org/10.1155/2022/2938878>
- Christopher, F. (2022). *Striking a Balance : Developing a Green Economy around Lake Bunyonyi - Farmer Field School Activity Report for October , 2020*. 6(5), 105–108.
- Christopher, F., Komunda, T. R., & Milton, N. (2022). *The Impact of Supervision on the Quality-Of-Service Delivery at Kirima Community Secondary School in Kanungu District , South Western Uganda*. 6(5), 157–162.
- Christopher, F., & Shamirah, B. (2025). *Marketing Strategies and Consumer Loyalty in the Telecom Sector : A Case Study Marketing Strategies and Consumer Loyalty in the Telecom Sector : A Case Study of MTN Uganda*. 9(February), 20–24.
- Julius, A., & Audrey, A. (2025). *Beyond Skills Training : Addressing the Systemic Pathologies in Uganda ' s Education System for Genuine Work Readiness*. 9(11), 352–360.
- Julius, A., & Desire, N. (2025). *The Enduring Ocean : Newton ' s Adage and the Complex Seas of Modern School*

Received: 18.01.2026

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Discipline. 9(11), 297–305.

Julius, A., & Kazaara, A. G. (2025). *Beyond the 1 . 5 Points : A Longitudinal Analysis of Gender Equity Policies in Ugandan Education and Their Perceived Societal Consequences.* 9(10), 99–104.

Julius, A., & Nancy, M. (2025a). *Bridging the Chasm : An Evaluation of the Transition from Secondary Education to Higher Learning in Uganda : A Case Study of Avance International University and Mbarara University of Science and Technology.* 9(10), 163–172.

Julius, A., & Nancy, M. (2025b). *The Digital Crossroads : A Comparative Analysis Of OpenAI And Google AI For Enhancing Learning Among Gen Z In Ugandan Private Universities.* 9(10), 84–92.

Kazaara, A. G., & Kazaara, A. I. (2025). *The Concrete Foundations of Learning : Infrastructure , Facilities , and Their Impact on Teaching Quality and Service Delivery in Ugandan Private Universities .* 9(8), 124–131.

Kyobutungi, I. K., & Nelson, K. (2025). *Impact of Sleep Quality on Health-Related Quality of Life among Residents Living near Bwindi Impenetrable forest , Kanungu District.* 9(4), 160–164.

Maiga, I. H., Abiodun, N. L., & Mageto, T. (2021). Analyzing the Effects of Flexible Exchange Rate Regime on the Malian Economy Using a Dynamic Stochastic General Equilibrium Model. *International Journal of Mathematics Trends and Technology*, 67(12), 9–20. <https://doi.org/10.14445/22315373/ijmtt-v67i12p502>

Nelson, K., Christopher, F., & Milton, N. (2022). *Teach Yourself Spss and Stata.* 6(7), 84–122.

Nelson, K., Kazaara, A. G., & Kazaara, A. I. (2023). *Teach Yourself E-Views.* 7(3), 124–145.

Ntirandekura, M., Friday, C., & Muhammad, M. (2022). Rewards and Staff Retention in Public Sector in Uganda: An Empirical Study from Kabale District Local Government. *International Journal of Academic Management Science Research*, 6(7), 165–170.

Olanrewaju, R. O., Waititu, A. G., & Abiodun, N. L. (2021). *Fréchet Random Noise for k -Regime-Switching Mixture Autoregressive Model.* 11(1), 1–10. <https://doi.org/10.5923/j.ajms.20211101.01>

Sarah, A., Nafiu, P., & Abiodun, L. (2024). *Sustainability in the Fashion Industry : Strategies for Reducing Environmental Impact and Enhancing Profitability.* 8(8), 178–182.

Suzan, W., & Gracious Kazaara, A. (2023). *The Impact of Western Education on Social Economic Development of Communities in Uganda-A Case Study of Wakiso Town Council Wakiso District (Vol. 7).*

Victor, N., Kazaara, A. G., & Kazaara, A. I. (2023). *Analysing The Effects Of Bullying On Child School Dropout In Secondary Schools In Uganda A Case Of Bwanda Secondary School Masaka District.* 7(3), 213–220.