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Factors affecting WASSCE performance in the Gambia: A quantitative analysis of student eligibility

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Abstract

This study investigates factors influencing student performance in the West African Senior School Certificate Examination (WASSCE) in The Gambia. Using a quantitative cross-sectional survey of 747 respondents across all six administrative regions, binary logistic regression analysis identified significant institutional, socioeconomic, and personal predictors of university eligibility. Results show that institutional factors exert the strongest influence. Science students have a 40.7 percentage point higher eligibility probability than Arts students ($p < 0.01$), while public school attendance reduces eligibility by 26.2 percentage points compared to PPP schools ($p < 0.01$). Geographic disparities are pronounced—students in Greater Banjul Area have 11 times higher odds of eligibility than those in Central River Region ($p < 0.01$). Access to study materials increases eligibility by 13.8 percentage points ($p < 0.01$). Personal factors, including studying 5–7 hours daily (+12.0 percentage points, $p < 0.05$) and high motivation (+8.6 percentage points, $p < 0.05$), were significant but comparatively modest in magnitude. The study concludes that improving WASSCE outcomes requires addressing structural inequities in school type, field-specific resource allocation, and regional infrastructure. These findings provide evidence-based guidance for promoting equitable academic achievement across the Gambia.

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Institutional Review Board Statement: Ethical approval for this study was obtained from the Regional Education Directorate, Ministry of Basic and Secondary Education (The Gambia). A formal letter granting permission for data collection in Region One was issued on 21st February 2025.
Transparency: The authors declare that the manuscript is honest, truthful and transparent, that no important aspects of the study have been omitted and that all deviations from the planned study have been made clear. This study followed all rules of writing ethics.
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1. Introduction

1.1. Background

The West African Examination Council (WAEC) is responsible for overseeing Grade 12 exams in five Anglophone West African countries: The Gambia, Nigeria, Sierra Leone, Ghana, and Liberia. This standardized exam ensures consistency in pre-university assessments across these countries. In The Gambia, students must obtain a credit in Mathematics, English, and three other subjects to meet the eligibility criteria for admission to the University of The Gambia, with specific requirements varying by field of study (University of The Gambia, 2024).

WASSCE results hold significant value at multiple levels, influencing government policy, educational outcomes, and individual futures. For The Gambia government, the WASSCE results serve as a key measure

of the Ministry of Basic and Secondary Education's (MoBSE) success in implementing educational policies. In the 2024 national budget, D4.195 billion, 14% of the Gambia's Consolidated Fund (Ministry of Finance and Economic Affairs, 2024) was allocated to this ministry, the highest percentage for any ministry in the country. Despite this substantial funding, the results from the 2024 exams showed a concerning 7.7% pass rate (Jawo, 2024).

For students, WASSCE significantly impacts their opportunities to access scholarships, higher education, and employment. It serves as a gateway to further academic pursuits and career advancement. As such, the exam is a pivotal aspect of a student's life in The Gambia. Schools and families, like the government, closely monitor the exam results, recognizing their critical role in shaping students' futures.

Understanding the factors that affect student performance in WASSCE is crucial, not only for the students themselves but also for educational stakeholders such as schools, policymakers, and families. This research aims to identify these factors and assess their contributions to student performance. While several studies have addressed similar issues in other Anglophone countries of West Africa, there is a notable gap in the literature specifically concerning The Gambia. This study seeks to fill that gap and provide valuable insights for improving WASSCE performance.

1.2. Statement of Research Problem

Despite the critical role of the West African Senior School Certificate Examination (WASSCE) in shaping access to higher education and skilled employment in The Gambia, student performance remains alarmingly low, with only 7.7% of candidates passing in 2024 (Jawo, 2024). This persistent underperformance threatens national development by limiting human capital formation and hindering socio-economic growth.

While the broader challenges of poor performance are well documented for other WASSCE countries, there is limited understanding of the specific factors influencing WASSCE outcomes in The Gambia, as well as the challenges faced by teachers and students in preparing for the exam. This study aims to fill this knowledge gap by identifying the key factors that affect student performance and examining the difficulties experienced by both teachers and students in the lead-up to WASSCE. The findings will inform targeted interventions to improve educational outcomes and enhance human capital development.

1.3. Justification of the Study

The persistent low performance of students in the WASSCE in The Gambia, poses a significant challenge for national development. WASSCE results not only determine students' access to higher education and job opportunities but also shape the country's human capital, which is essential for economic growth and social progress (Adedeji & Campbell, 2014). Despite substantial government investment in education, 14% of the national budget in 2024, these low pass rates highlight the urgent need to understand and address the underlying causes.

This study is critically important because it goes beyond general observations about low performance to identify the specific factors that contribute to this trend. By focusing on the regional and systemic challenges that students and teachers face during WASSCE preparation, the study provides a nuanced and evidence-based understanding of what factors shape performance in The Gambia. Such insights are vital for tailoring interventions to the unique needs of students across different regions and backgrounds.

Importantly, while similar studies have been conducted in other countries in the region, there is a notable gap in comprehensive research specific to The Gambia. This study fills that gap by providing context-specific evidence and practical recommendations that can inform policy and programmatic efforts to enhance educational outcomes. The findings will also serve as a valuable resource for stakeholders, including policymakers, educators, and development partners committed to advancing The Gambia's national development agenda.

1.4. Research Objectives

1. Investigate the factors affecting student performance.
2. Identify core challenges faced by teachers and students in preparation for the WASSCE exams.

1.5. Research Questions

1. What are the underlying factors affecting student performance?
2. What are the major challenges faced by grade 12 students and teachers in preparation for the WASSCE exams?

1.6. Limitations

One limitation of this study concerns the indeterminate size of the WASSCE graduate population in The Gambia. An exact cumulative figure for the number of students who have sat for the WASSCE examination over the past two decades was not obtainable from the Ministry of Basic and Secondary Education (MoBSE). However, available administrative records indicate that annual WASSCE candidature has ranged from

approximately 16,000 candidates in 2016 to about 11,000 candidates in 2020. Based on these recent trends, a conservative minimum population estimate of 100,000 WASSCE graduates was adopted for this study.

Accordingly, the WASSCE graduate population was treated as large and effectively indeterminate for sampling purposes. In line with standard methodological practice, this estimated population size was used solely to guide sample size justification, and Cochran (1977) formula for large populations was applied to determine an adequate minimum sample size. Although reliance on an estimated population size may introduce minor approximation error, it does not compromise the validity or representativeness of the final sample, which satisfies established statistical requirements for inference in large populations.

2. Literature Review

2.1. Introduction and Scope

Previous studies across West Africa, especially in Nigeria, Ghana, and Liberia, have examined factors influencing students' academic performance (Alade, Kuku, & Osoba, 2017; Mukhtari, 2017). However, most of these studies are limited in scope, focusing on specific subjects, isolated regions, or a narrow set of explanatory variables. Moreover, there is limited empirical research in The Gambia that quantitatively investigates how personal, institutional, and socioeconomic factors jointly determine academic outcomes. This chapter reviews relevant literature on these domains, synthesizes key findings, and establishes the conceptual foundation guiding the present study.

2.2. Personal Factors

Personal factors refer to individual characteristics and behaviors that directly influence students' learning processes and examination performance. These include motivation, study habits, self-discipline, and access to learning materials. Empirical research in West Africa consistently links structured study habits and positive academic attitudes to higher WASSCE achievement. For instance, Daberenze (2015) and Owoeye, Faleye, and Jimoh (2022) demonstrate that students who maintain consistent study routines and exhibit strong intrinsic motivation perform significantly better in national examinations.

International research supports these findings. Yazdani and Sane Godbole (2014) and Ergene (2011) observe that well-organized study routines and self-regulated learning strategies reduce academic anxiety and enhance achievement motivation. This suggests that study habits function not merely as indicators of effort, but as elements of psychological preparedness that foster academic resilience.

In the Gambian context, Giordano and Pugatch (2016) highlighted that financial constraints particularly those related to learning materials, uniforms, and transportation affect students' ability to maintain consistent study habits. Such findings imply that personal and resource-related factors are interconnected, shaping how students engage with their studies.

In this study, personal factors are operationalized through measurable indicators such as study hours per day, motivation toward learning, and attendance at extra classes. These variables capture both behavioural and attitudinal dimensions of students' effort and commitment.

2.3. Institutional and Teacher-Related Factors

Institutional and teacher-related factors determine the quality of education and shape students' learning environments. Numerous studies across West Africa link teacher competence, experience, and instructional quality with student achievement (Akiri & Ugborugbo, 2009; Mukhtari, 2017). However, systemic challenges such as limited resources, inadequate teacher supervision, and insufficient professional development often constrain effective teaching and learning outcomes.

In The Gambia, institutional issues such as overcrowded classrooms, poor infrastructure, and low teacher motivation remain pressing concerns. Tanimu and Tanimu (2025) noted that poor working conditions contribute to teacher attrition and declining instructional quality, suggesting that teacher performance is strongly influenced by institutional support systems.

This study quantitatively measures institutional and teacher-related factors including teaching quality, resource adequacy, and school type to assess how they jointly influence WASSCE performance.

2.4. Socioeconomic Factors

Socioeconomic factors provide the broader context within which students learn and perform. They encompass family income, parental education, parental involvement, and regional location. Bourdieu's theory of social reproduction offers a conceptual basis for understanding these relationships. It argues that economic, cultural, and social capital shape educational outcomes, often reinforcing inequality across generations.

Empirical evidence from West Africa supports this theoretical position. Alade et al. (2017) and Yinusa and Basil (2008) find that students from wealthier households perform better in national examinations due to greater access to study materials, private tutoring, and supportive home environments. Similarly, Hanafi (2008) and Larmie and Kang (2022) report that parental education and involvement positively influence students' motivation and academic achievement.

In The Gambia, Giordano and Pugatch (2016) show that even after tuition fees were waived, indirect costs such as books, uniforms, and examination fees continued to limit educational access, particularly for girls. This underscores that financial constraints not only affect school attendance but also academic preparation and exam performance.

This study incorporates socioeconomic factors through measures such as student study materials, school type, and regional context. These indicators enable a quantitative assessment of how socioeconomic inequalities interact with institutional and personal characteristics to influence university eligibility among WASSCE graduates.

2.5. Logistic Regression in Educational Research

Given that the key outcome of interest, university eligibility is binary (Eligible or not eligible), logistic regression is an appropriate analytical method. Logistic regression allows for the estimation of probabilities associated with categorical and continuous predictors, providing insights into how various personal, institutional, and socioeconomic factors influence the likelihood of meeting university entry requirements.

The technique is widely applied in educational research to model performance determinants (Eratlı Şirin & Şahin, 2020; Sule & Saporu, 2015). However, Niu (2018) cautions that many studies fail to interpret regression results meaningfully, focusing solely on statistical significance rather than on the magnitude of effects. To address this limitation, the present study not only estimates coefficients and odds ratios but also computes average marginal effects, showing how incremental changes in each independent variable affect the probability of eligibility. This enhances the interpretability and policy relevance of the findings.

2.6. Research Gaps and Conceptual Framework

Despite a growing body of research on WASSCE performance in West Africa, several key gaps remain.

1. There is a lack of nationally representative quantitative studies on the determinants of WASSCE performance in The Gambia.
2. Most existing studies focus on single explanatory dimensions, such as teacher quality or student motivation, rather than integrating multiple domains.

To address these gaps, this study develops a conceptual framework that integrates three interdependent domains influencing academic performance and eligibility outcomes.

- Personal Factors: study habits, motivation, and resource access.
- Institutional and Teacher Factors: Teacher competence, teaching quality, and school-level materials.
- Socioeconomic Factors: Student study materials, school type, and regional context.

These domains interact dynamically. Socioeconomic background can influence school type and access to educational resources, which in turn affect study habits and motivation. The framework therefore posits that WASSCE performance results from the combined and interrelated effects of these domains.

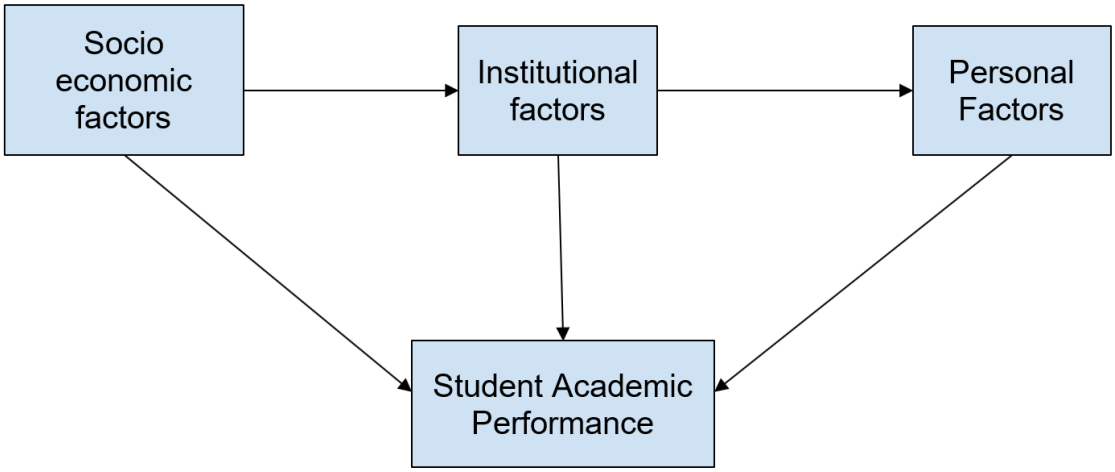

Figure 1. Presents the conceptual framework that guides the empirical analysis in Chapter 3.

3. Methodology

3.1. Research Design

This study adopted a quantitative cross-sectional survey design to examine the determinants of students' performance in the West African Senior School Certificate Examination (WASSCE) in The Gambia. The design was chosen because it allows for the systematic collection of standardized data from a large and diverse population, enabling statistical analysis of relationships between personal, institutional, and socioeconomic factors influencing academic achievement.

Respondents were interviewed by trained enumerators. Respondents were: (i) secondary school teachers and (ii) recent WASSCE graduates. The quantitative approach ensured objectivity, replicability, and comparability of findings across respondents and regions.

+

3.2. Population and Sampling Procedure

The study population consisted of secondary school teachers and West African Senior School Certificate Examination (WASSCE) graduates across The Gambia's six administrative regions: Banjul, Kanifing Municipality, West Coast Region, Lower River Region, Central River Region, and Upper River Region.

From data obtained directly from the Ministry of Basic and Secondary Education (MoBSE), approximately 2,896 secondary school teachers are currently employed nationwide. The exact cumulative population of WASSCE graduates over the past two decades is not officially published by the Ministry of Basic and Secondary Education (MoBSE). To establish a reasonable population estimate for sampling purposes, this study constructed a minimum baseline using publicly available WAEC candidature data spanning 20 years. Key annual figures include 14,200 candidates in 2012 (Clark, 2015) and 20,247 candidates in 2025 (The Alkamba Times, 2025). Assuming a conservative average of approximately 10,000 candidates per year over a 20-year period, the total graduate population is estimated to exceed 200,000 individuals. This figure is treated as a large and effectively indeterminate population, justifying the use of sample size calculation formulas designed for such contexts (e.g., Cochran's formula).

A total of 747 respondents were targeted, comprising 350 teachers and 400 WASSCE graduates. Of the graduate questionnaires administered, 397 valid responses were obtained. Following data screening and the removal of incomplete cases for key analytical variables, 350 graduate observations were retained for the final econometric analysis. The sampling procedure was structured to ensure proportional regional representation and random selection of both schools and respondents, thereby enhancing the representativeness of the sample.

3.3. Sampling Technique and Sample Size Determination

3.3.1. Sampling Technique

A proportionate stratified random sampling approach was employed to ensure adequate representation of all six administrative regions in proportion to the distribution of WASSCE-participating secondary schools.

3.3.2. Stratification by Region

Each administrative region was treated as a stratum. Data from MoBSE on the number of WASSCE-participating secondary schools in each region were used to determine the proportion of schools sampled per stratum.

3.3.3. Selection of Schools and Respondents

Within each stratum, secondary schools were selected using simple random sampling facilitated by a random number generator. In each selected school, an average of three to four teachers were interviewed, depending on staff size and availability.

For WASSCE graduates, respondents were randomly selected from communities surrounding the sampled schools. In rural and hard-to-reach areas, snowball sampling was employed to identify eligible participants. Inclusion criteria required that respondents had completed secondary school within the past 20 years and had sat for the WASSCE examination. This mixed approach reduced selection bias and ensured coverage of both urban and rural populations.

3.3.4. Sample Size Determination

Sample size determination varied by respondent group due to differences in population characteristics. For secondary school teachers, whose population size is known, the sample size was determined using the Krejcie and Morgan (1970) formula for finite populations. This method provides an adequate sample size at a 95% confidence level with a 5% margin of error. For WASSCE graduates, whose population is large and not precisely known, the sample size was determined using Cochran (1977) formula for large or indeterminate populations. At a 95% confidence level and a 5% margin of error, the formula recommends a minimum sample size of 384 respondents. Although 397 valid responses were collected, 350 complete observations were retained after data cleaning. This final sample size was considered sufficient for reliable estimation of the regression models and the computation of average marginal effects.

3.4. Data Collection Instrument

Data were collected using a structured questionnaire developed and administered via Survey Solutions, a digital platform that allows real-time monitoring and data validation. The instrument consisted of two

components. Most items were closed-ended, structured on categorical and Likert-type scales to support quantitative analysis, with a few open-ended questions for brief explanations.

3.5. Data Collection Procedure

Fieldwork was conducted by trained enumerators supervised by experienced field supervisors and coordinators. Enumerators visited selected schools and communities to conduct face-to-face interviews using tablets preloaded with Survey Solutions. Before each interview, respondents were informed about the study's objectives, assured of confidentiality, and asked to provide informed consent. Participation was voluntary, and interviews were conducted in English.

3.6. Model Specification

Given the binary nature of the dependent variable: where eligibility is coded as 1 if a graduate met the minimum University of The Gambia entry requirement and 0 otherwise, a binary logistic regression model was employed to estimate the likelihood of a candidate achieving eligibility. This method is appropriate for predicting the probability of a dichotomous outcome based on a set of explanatory variables.

Let Y_i represent the eligibility status of the *i*-th graduate, such that:

$$P(Y_i = 1) = P_i \text{ and } P(Y_i = 0) = 1 - P_i$$

Where P_i is the probability of the *i*-th graduate being eligible.

The logistic model connects the probability P_i to a linear combination of predictors (X_{ki}) through the *logit* function, which is the natural logarithm of the odds of eligibility.

$$Logit(P_i) = \ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + \varepsilon_i$$

Where:

- β_0 is the intercept
- β_k are the coefficients for the k variables.
- X_{ki} is the vector of independent variables (e.g., study hours, motivation, school type) for the *i*-th graduate.
- ε_i.

The probability P_i can be derived from the logit as:

$$P_i = \frac{e^{\left(\beta_0 + \sum \beta_k X_{ki}\right)}}{1 + e^{\left(\beta_0 + \sum \beta_k X_{ki}\right)}}$$

For interpretation, the exponentiated coefficients e^{β_k} yield odds ratios (OR), indicating the multiplicative change in the odds of eligibility for a one-unit increase in the predictor. To enhance policy relevance, the study also reports Average Marginal Effects (AMEs), calculated as $\partial P_i / \partial X_{ki}$. AMEs quantify the change in the probability of eligibility (in percentage points) associated with a one-unit change in an independent variable, holding all other variables constant. This addresses a common limitation where studies focus solely on statistical significance without conveying the magnitude of practical effects (Niu, 2018).

3.7. Definition of Variables and Expected Relationships

This section defines the variables used in the logistic regression analysis. The dependent variable is WASSCE eligibility, a binary indicator of whether a student achieved five credits including English and Mathematics, meeting the minimum entry requirement for University of The Gambia. Independent variables are grouped into three categories: personal factors (study hours, attitude, extra classes), institutional factors (teaching quality, learning resources, topics covered, field of study, school type), and socioeconomic factors (study materials, gender, region). Table 1 presents the complete list of variables, their descriptions, measurement types, and expected relationships with the dependent variable.

Table 1. Presents the list of variables used in the regression.

Variable	Description	Type of Measure	Expected Relationship
Eligibility (Dependent)	Achieved five credits including English and Mathematics	Dummy (1 = Yes, 0 = No)	N/A (dependent variable)
Study Hours	Average study hours per day	Categorical	Higher study time increases eligibility
Attitude	Student's self-reported motivation to learn	Categorical	Positive attitude increases eligibility
Topics Covered	Extent to which classroom topics matched exam questions	Dummy	Greater alignment improves performance
Teaching Quality	Students' rating of teaching quality	Categorical	Better teaching quality improves results
Learning Resources	Access to libraries, labs, and learning materials	Categorical	Adequate resources enhance learning
Extra Classes	Attendance at extra lessons	Dummy	Participation expected to increase eligibility
Study Materials	Availability of textbooks and past papers	Dummy	Better materials improve performance
Field of Study	Academic stream (Science, Arts, Commerce, Technical)	Categorical	Varies by discipline
School Type	Public, Private, or Public-Private School	Categorical	Private schools may perform better
Gender	Male = 1, Female = 0	Dummy	May vary
Region	Respondent's administrative region	Categorical	Contextual differences may exist

3.8. Data Processing, Analysis, and Model Diagnostics

Data from Survey Solutions were exported to Microsoft Excel for initial cleaning and validation, then imported into Stata for analysis.

1. Descriptive Statistics were used to summarize demographic characteristics, teacher and student challenges, and learning conditions through frequency tables and charts.
2. Inferential Analysis using binary logistic regression determined the influence of the independent variables on eligibility outcomes.
3. Marginal Effects quantified how each factor affected the probability of achieving WASSCE eligibility.

3.9. Ethical Considerations

The study strictly adhered to ethical research standards. All participants were informed about the purpose of the study, their voluntary participation, and confidentiality measures. Personal identifiers were excluded from the dataset. Ethical clearance was obtained from the regional educational directorate before the commencement of fieldwork.

Table 2. Socio-Demographic distribution of respondents.

Category	N	Mean	Std. Dev.	Min.	Max.
Gender Characteristics					
Female	797	0.335	0.472	0	1
Male	797	0.664	0.473	0	1
Highest Level of Education					
Senior School	797	0.321	0.467	0	1
Tertiary	797	0.678	0.468	0	1
Current Learning Status					
In School	797	0.39	0.488	0	1
Not In School	797	0.609	0.488	0	1
Type of School Attended					
Public School	797	0.827	0.379	0	1
Private School	797	0.093	0.29	0	1
Hybrid School	797	0.079	0.27	0	1
Respondent Category					
Student	797	0.562	0.496	0	1
Teacher	797	0.435	0.496	0	1
Region Distribution					

Central River Region	797	0.156	0.363	0	1
Greater Banjul Area	797	0.158	0.365	0	1
Lower River Region	797	0.089	0.285	0	1
North Bank Region	797	0.142	0.349	0	1
Upper River Region	797	0.159	0.366	0	1
West Coast Region	797	0.295	0.456	0	1
Age Group Distribution					
Age 18-25	797	0.458	0.499	0	1
Age 25-30	797	0.252	0.435	0	1
Age 30-35	797	0.151	0.358	0	1
Age 35 and above	797	0.138	0.345	0	1

4. Data Analysis

4.1. Demographic Profile of Respondents

Table 2 represents the demographic characteristics of the respondents. It produces important insights into the composition of respondents. The gender of the respondents, consists of 33.5% female and 66.4% male. The data represents a ratio about two-to-one of male and females respectively showing a male-dominated sample.

Educational attainment follows approximately the same ratio with 68% of the respondents completing tertiary education and 32 completing senior secondary school. The data shows a high participation of well-educated participants. The high level of tertiary education completion is understandable by the participation of teachers who almost all completed tertiary education.

For learning status, 61% of the respondents are not currently learning while 39% are learning. This is explained by the participation of the teachers who have completed their studies. A further analysis of the data shows that with only 11.8% of teachers currently learning.

The type of school attended shows that 83% of the respondents attended public school, 9% attended private school and 8% attended hybrid schools. This shows that the majority of the respondents attended public schools.

The respondents are categorized into teachers and students with students representing 56% of the sample and teachers representing 44%. This shows a relatively balanced representation of educational stakeholders.

The regional distribution of respondents shows that 30% of the respondents are from WCR, and 8% from LRR. GBR, CRR, and NBR each represent approximately 15% of the respondents.

The age distribution shows a predominantly younger sample with 87% of the respondents below 35 and 13% above 35.

The insights from the demography shows that the sample consists of male dominated, highly educated, young population, diverse regional distribution and balanced representation of teachers and students.

4.2. Initial Patterns in WASSCE Eligibility

This section examines the factors influencing WASSCE performance by analyzing a range of predictor variables, including student-related, demographic, and institutional characteristics. Student performance is classified into two categories: "eligible" for those who met the minimum University of The Gambia entry requirement (five credits including Mathematics and English), and "not eligible" for those who did not meet this benchmark.

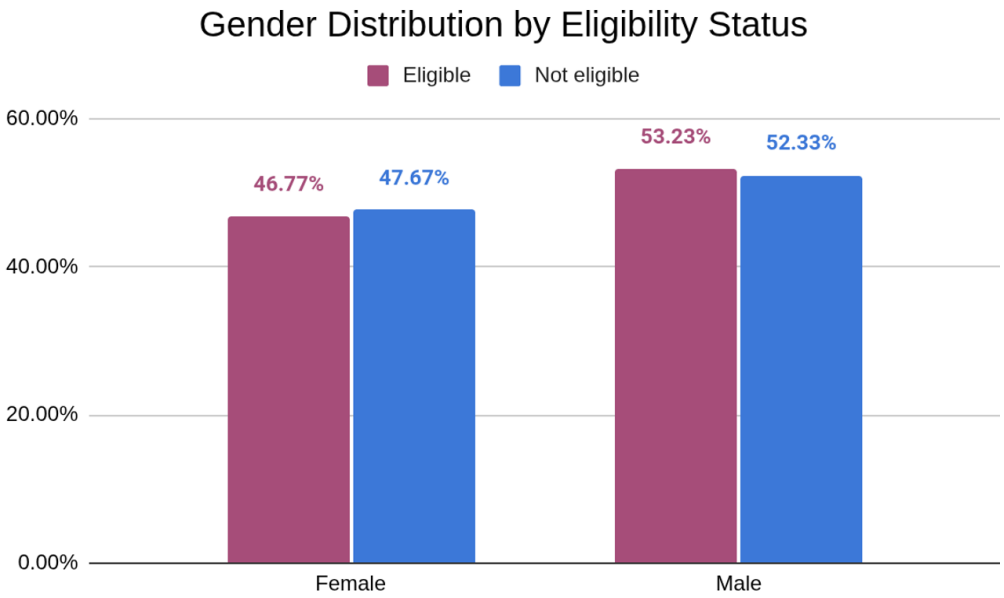

Figure 2. Distribution of respondents by gender and eligibility status.

Analysis of gender patterns in WASSCE eligibility shows no substantial performance gap between male and female students Figure 2. The proportion of eligible versus ineligible students is nearly identical for both genders: among respondents, approximately 47-48% of females and 52-53% of males fell into each eligibility category.

However, the sample reveals a significant enrollment imbalance: male respondents outnumbered females by approximately 2:1 (66% male vs. 34% female). This suggests that while performance outcomes are equitable for those who participate in secondary education, access or participation rates may differ substantially by gender at earlier educational stages.

These findings indicate that The Gambia's secondary education system delivers comparable academic outcomes across genders when students reach WASSCE level. The primary gender-related challenge appears to be ensuring equal participation rather than addressing performance disparities among participants.

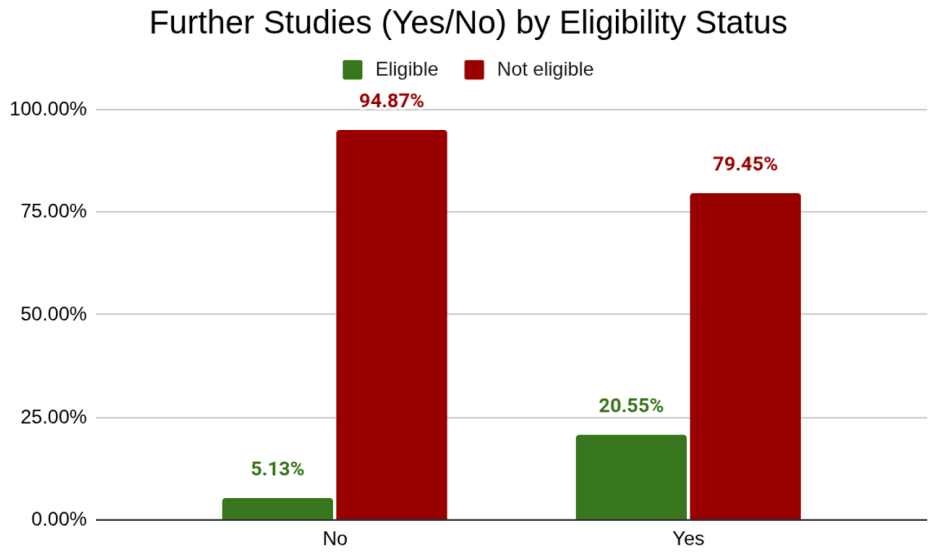

Figure 3. Relationship Between WASSCE eligibility and further education.

The connection between WASSCE performance and subsequent educational progression reveals critical barriers (Figure 3). Among students who pursued further education, only 20.55% had achieved WASSCE eligibility, while the vast majority (79.45%) continued their studies despite not meeting university entry requirements. This suggests that many students pursue alternative educational pathways or institutions with lower admission thresholds.

Conversely, among students who did not continue their education, an overwhelming 94.87% were ineligible, indicating that WASSCE failure represents a significant barrier to educational advancement. Most strikingly, only 5.13% of eligible students chose not to pursue further education, suggesting that when students achieve the minimum university requirements, they overwhelmingly choose to continue their studies.

These patterns highlight two important dynamics: first, WASSCE eligibility serves as a strong predictor of continued education, with eligible students being approximately four times more likely to pursue further studies than their ineligible counterparts. Second, the substantial proportion of ineligible students who still pursue further education (79.45%) indicates the existence of alternative pathways, though these may offer limited prospects compared to university education.

The findings underscore the gatekeeping function of WASSCE in The Gambia's education system while also revealing the resilience of students who seek educational advancement despite academic setbacks. This duality suggests the need for both improved academic support to increase eligibility rates and expanded recognition of alternative educational pathways for those who do not achieve conventional success.

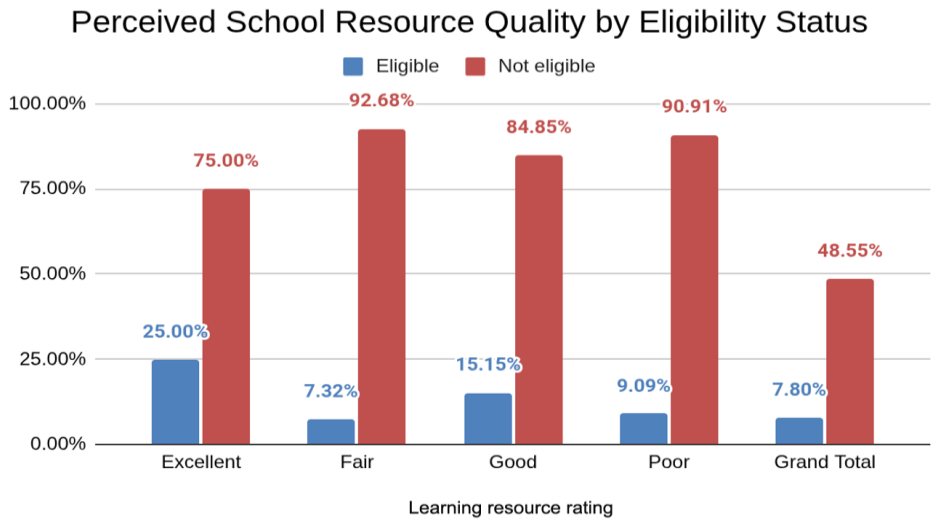

Figure 4. Perceived school resource quality by eligibility status.

Students' ratings of school resources show a strong correlation with WASSCE outcomes (Figure 4). Eligibility rates increase substantially with perceived resource quality: students who rated their school's resources as "Excellent" had a 25% eligibility rate, compared to only 7.32% among those rating resources as "Fair." This represents more than a threefold difference in success likelihood based on resource perceptions. Students reporting "Good" resources achieved intermediate outcomes (15.15% eligible), while those with "Poor" ratings showed slightly better results than the "Fair" group (9.09% eligible).

These findings indicate that access to quality educational facilities including libraries, laboratories, and learning materials significantly enhances academic performance. The stark gradient suggests that even marginal improvements in perceived resource quality could yield meaningful gains in WASSCE success rates. Interestingly, the "Poor" rating group outperformed the "Fair" group, which may reflect either measurement nuance or differing expectations among students.

This relationship underscores the critical role of school infrastructure and resource allocation in determining educational outcomes. Investments in physical and learning resources appear to offer substantial returns in terms of student achievement, particularly when these improvements are perceived by students as moving resources from "Fair" to "Excellent" quality.

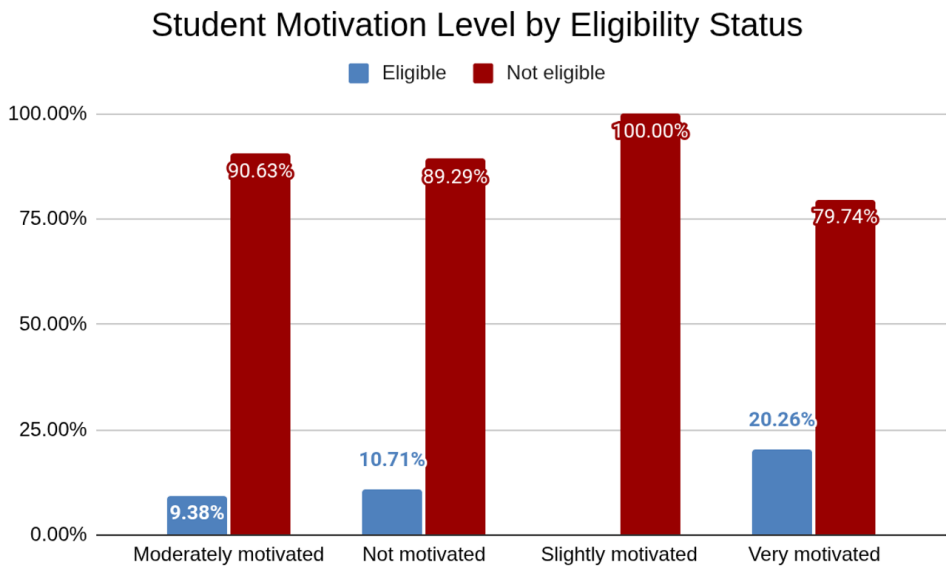

Figure 5. Student Motivation Levels During WASSCE Preparation by Eligibility Status.

The relationship between student motivation and WASSCE eligibility reveals that higher motivation is associated with a greater likelihood of success, though it does not guarantee it (Figure 5). Among students who reported being "Very motivated," 20.26% achieved eligibility, representing the highest success rate across all motivation categories. In contrast, students with lower motivation levels had considerably poorer outcomes: only 9.38% of "Moderately motivated" students and 10.71% of "Not motivated" students were eligible. Most strikingly, none of the students who reported being "Slightly motivated" achieved eligibility.

These patterns indicate that while strong motivation substantially improves a student's chances, increasing the probability of eligibility by more than double compared to moderate motivation, it is not sufficient on its own. The fact that nearly 80% of "Very motivated" students (79.74%) still did not achieve eligibility underscores that motivation must be coupled with other critical factors such as effective study habits, access to learning materials, and quality instruction.

The complete absence of eligible students in the "Slightly motivated" category suggests a potential motivation threshold; once motivation falls below a certain level, academic success becomes highly improbable. This finding aligns with the regression results, which identified being "Very motivated" as a significant positive predictor, increasing the probability of eligibility by 8.6 percentage points.

These insights highlight the importance of fostering student motivation as part of a comprehensive strategy to improve WASSCE outcomes, while also addressing the systemic and resource-related barriers that prevent even highly motivated students from succeeding.

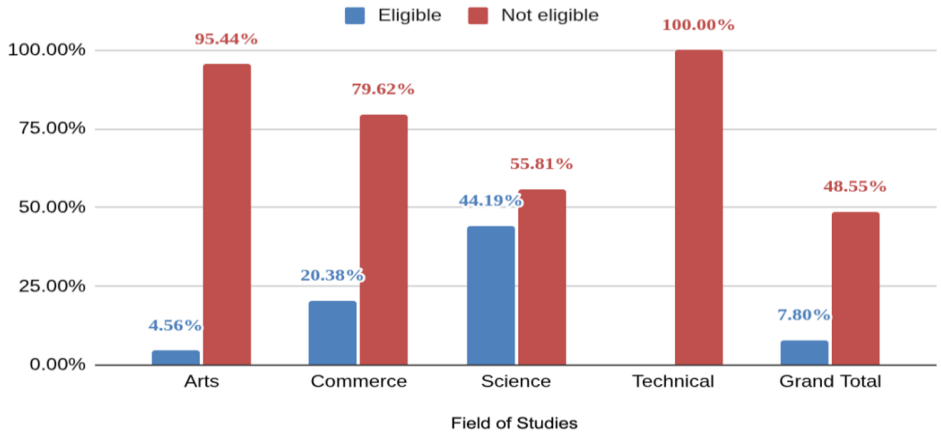

Figure 6. WASSCE eligibility rates by field of study.

Analysis reveals significant disparities in eligibility rates across academic streams (Figure 6). Science students demonstrated the strongest performance, with 44.19% achieving university eligibility. Commerce students showed a more moderate outcome (20.38% eligible), while Arts students had the lowest eligibility rate (4.56%).

Interpretive note: The reported 100% ineligibility in the technical stream is largely a function of sampling, very few technical students were interviewed due to the limited number of technical schools across regions.

This finding should therefore be seen as indicative of data limitations rather than as a definitive performance measure for technical education.

These patterns point to potential systemic inequities. The stronger performance in the Science stream may reflect advantages such as better-resourced laboratories, more qualified teachers, selection process, or stronger institutional alignment with WASSCE requirements. Conversely, the notably lower eligibility rates in Arts and Commerce suggest these streams may face challenges related to curriculum relevance, teaching quality, or student support.

The stark contrast in outcomes underscores the importance of investigating stream-specific factors that influence WASSCE performance.

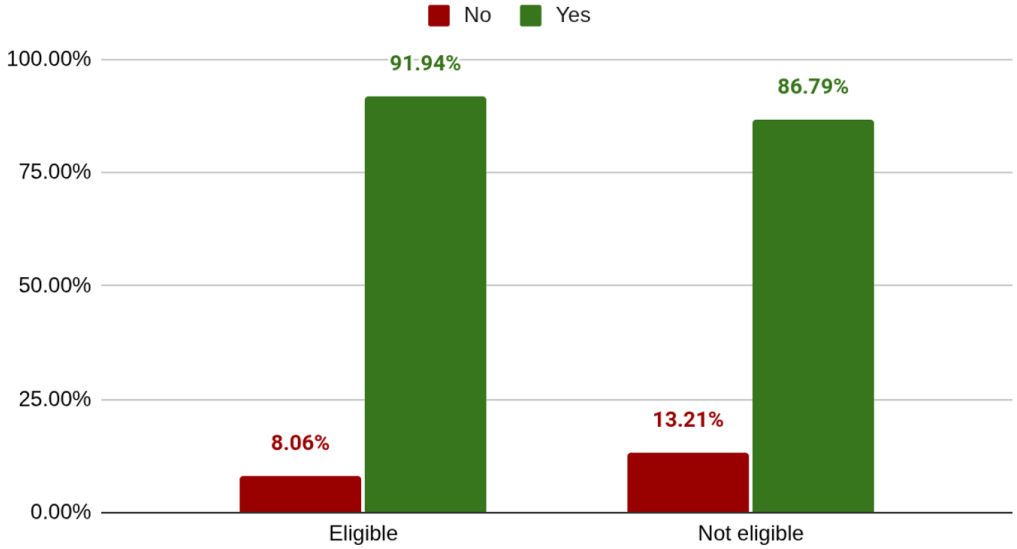

Figure 7. Attendance at extra classes by eligibility status.

Figure 7 represents the percentage distribution of respondents who attended extra classes based on their eligibility status to the university of the Gambia.

Among respondents who were not eligible, 87% reported attending extra classes, whereas 13% did not. In contrast, among those who were eligible, a higher proportion 92% attended extra classes, with only 8% not participating. This suggests a positive association between eligibility status and extra class attendance, although it is noteworthy that a considerable majority of both groups (eligible and not eligible) still attended the extra sessions.

These findings imply that while eligibility may slightly enhance attendance rates, extra class participation appears to be strongly favored across both groups, potentially indicating intrinsic motivation or external pressures that encourage attendance regardless of eligibility status. Further analysis would be necessary to identify the underlying factors contributing to this high level of participation.

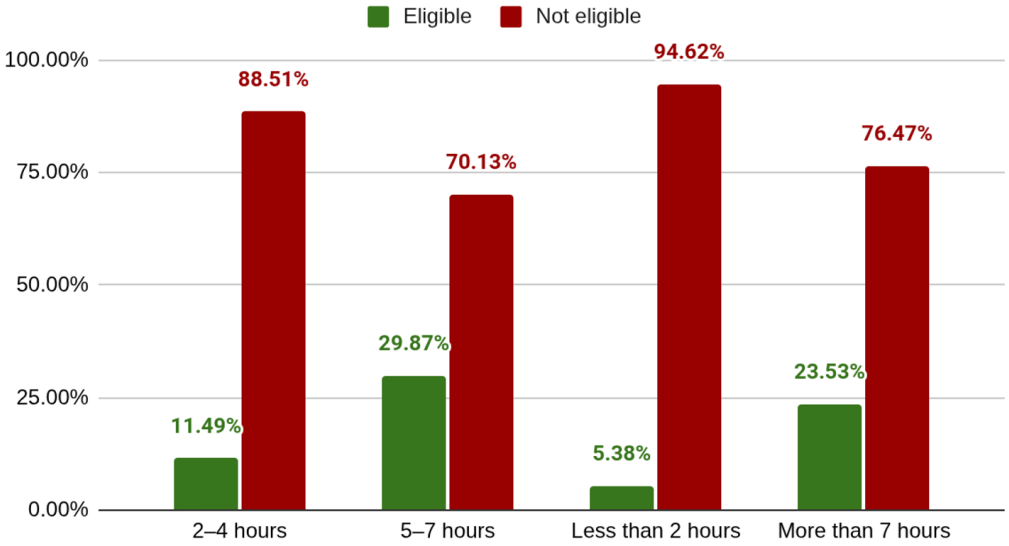

Figure 8. Average Daily Study Hours by Eligibility Status.

The relationship between daily study hours and WASSCE eligibility reveals notable patterns (Figure 8). Among students studying 2-4 hours daily, a substantial majority (88.51%) were not eligible for university admission, while only 11.49% achieved eligibility. This trend reverses among higher study durations: of students studying 5-7 hours daily, 29.87% were eligible, more than double the proportion in the 2-4 hour category. The most striking contrast appears among those studying more than 7 hours daily, where 23.53% were eligible despite this group representing only 7.80% of all respondents. Conversely, students studying less than 2 hours daily showed the poorest outcomes, with 94.62% not achieving eligibility.

These findings suggest a threshold effect: while moderate study (2-4 hours) is common (43.65% of all respondents), it correlates strongly with ineligibility. Significant academic success appears to require sustained, intensive study habits, with the probability of eligibility increasing substantially among those committing 5 or more hours daily. This underscores the importance of both study duration and perhaps study quality in determining WASSCE outcomes.

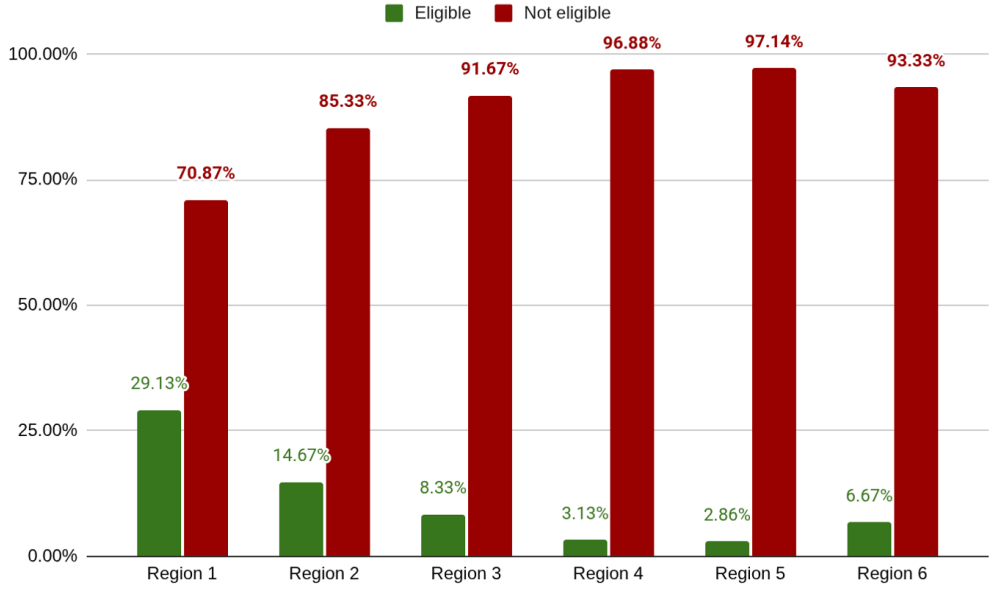

Figure 9. Regional Disparities in WASSCE Eligibility Across the Gambia.

Figure 9 compares the percentage of students deemed eligible versus not eligible across the six regions of the Gambia.

The chart reveals stark regional disparities in student performance. The Central River Region (CRR), Lower River Region (LRR), and Upper River Region (URR) exhibit the lowest proportions of eligible students, with only 5%, 0%, and 4% respectively achieving eligibility. In LRR, a complete lack of eligible students (0%) is observed, indicating systemic performance challenges. Conversely, the Greater Banjul Area

(GBA) demonstrates the highest rate of eligibility at 32%, followed by the West Coast Region (WCR) at 20%, and the North Bank Region (NBR) at 11%. These figures suggest a geographic concentration of educational advantage in more urbanized or economically developed regions.

The overwhelming predominance of students categorized as not eligible, ranging from 68% in GBA to 100% in LRR signals a widespread performance deficit across regions, with particularly acute challenges in rural areas. These disparities may be influenced by a host of interrelated factors, including socioeconomic inequality, resource allocation, teacher distribution, infrastructure deficits, and parental literacy levels.

This regional disaggregation of performance data highlights the urgent need for targeted educational interventions. Policymakers and education stakeholders must prioritize equity-focused strategies, including rural investment, teacher incentives for underserved areas, and inclusive curriculum reforms. Such measures are essential to bridging the performance divide and ensuring that all students, regardless of geographic location, have access to quality education and equitable opportunities for academic success.

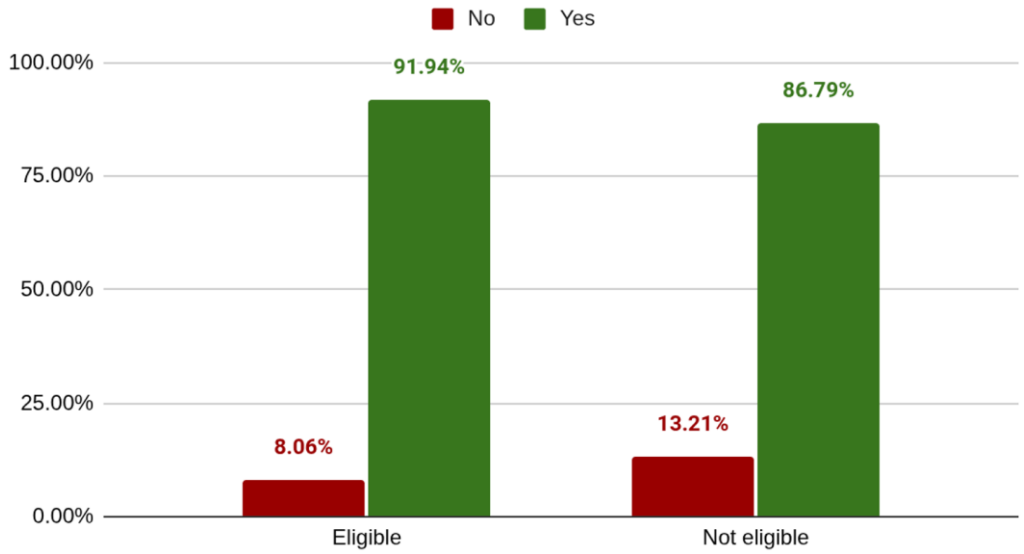

Figure 10. Access to Standard Study Materials by Eligibility Status.

Figure 10 represents the percentage distribution of the respondent having standard study materials segmented by student performance. From the graph above in the not eligible, 50% said that they have access to enough standard study materials, 32% said they have part of the materials and 18% said they do not have access to the standard study materials. While from the eligible part, 75% said they have access to enough standard study materials, 19% said that they have access to part of the materials and 6% said they have no access to study materials.

This data underscores a notable disparity in the availability of academic resources between the two performance groups. The greater proportion of eligible students with full access to standard materials suggests a positive relationship between resource availability and academic performance. Conversely, limited access to essential study materials may contribute to lower academic outcomes, as evidenced in the responses of the not eligible group. These findings reinforce the importance of equitable resource distribution in fostering academic success.

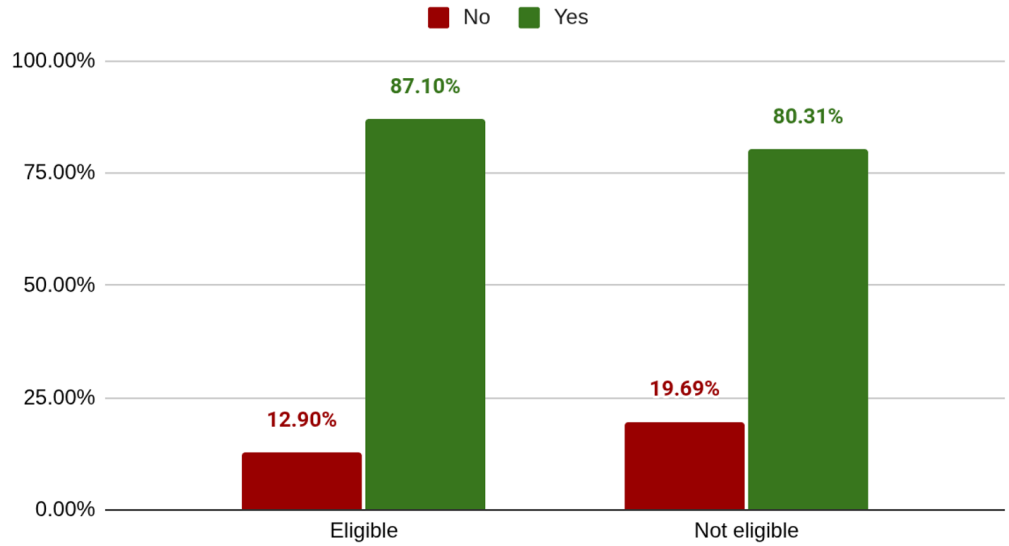

Figure 11. Availability of School Revision Programs by Eligibility Status.

Figure 11 illustrates whether students reported that their school organizes a revision program for WASSCE students, segmented by eligibility status.

Among students classified as "not eligible," 80% indicated that their schools offered revision programs, while 20% reported the absence of such programs. In comparison, 87% of students deemed "eligible" stated that their schools provided revision programs, whereas 13% reported otherwise. Although the proportion of eligible students who benefited from revision programs is slightly higher, the difference between the two groups is not considerable.

These findings suggest that the provision of revision programs does not significantly differ based on student performance outcomes. Consequently, while revision programs may offer academic support, they do not appear to be a decisive factor in determining WASSCE performance. Further investigation is warranted to examine additional variables such as school-level policies, availability of resources, quality and structure of revision programs, and institutional priorities that may influence both the implementation of revision support and student academic achievement.

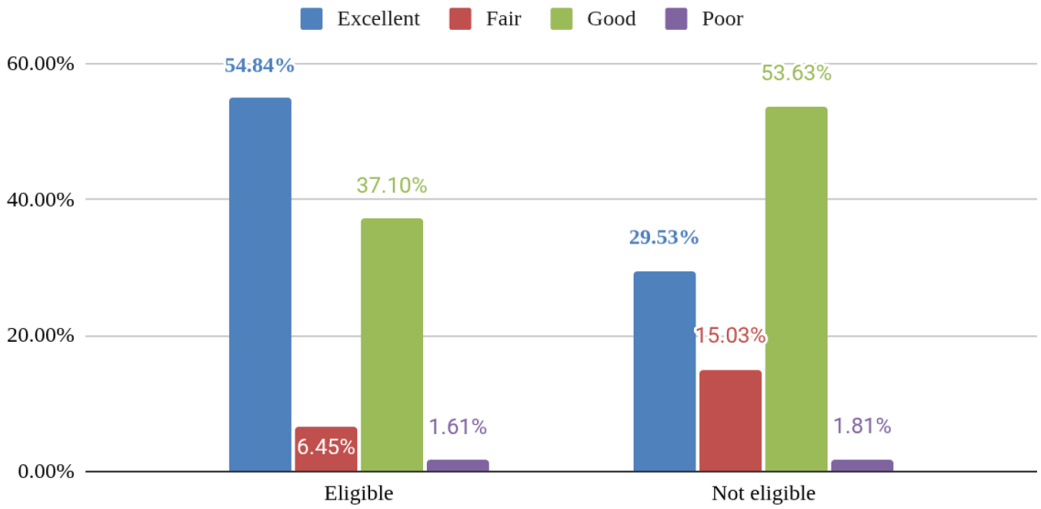

Figure 12. Student Ratings of Teaching Quality by Eligibility Status.

Figure 12 illustrates the percentage distribution of teaching quality ratings (Excellent, Good, Fair, and Poor) as assessed by students, disaggregated by eligibility status. The results indicate notable differences in perceived teaching quality between eligible and not eligible students. Among students classified as eligible, over half (54.84%) rated the teaching they received as Excellent, while 37.10% described it as Good. Only a small proportion rated teaching as Fair (6.45%) or Poor (1.61%). This pattern suggests that eligible students are predominantly exposed to higher-quality teaching, which may positively influence their academic readiness and overall performance. In contrast, students categorized as not eligible reported less favorable teaching experiences. While 29.53% rated teaching as Excellent, the largest share (53.63%) rated it as Good, and a

substantial proportion (15.03%) rated teaching as Fair. Similar to the eligible group, only a small fraction (1.81%) perceived teaching as Poor. Compared to eligible students, not eligible students are significantly less likely to experience Excellent-rated teaching and more likely to encounter Fair-quality instruction.

The overall distribution shows that 43.65% of respondents rated teaching as Excellent, followed by Fair (18.62%), Good (7.80%), and Poor (1.01%). While this aggregate view suggests generally positive teaching ratings, it conceals important disparities when disaggregated by eligibility status. Overall, the figure highlights a strong association between teaching quality and student eligibility outcomes. Higher concentrations of Excellent-rated teaching among eligible students suggest that teaching effectiveness may be a critical factor in determining student success. Conversely, the greater prevalence of Fair-rated teaching among not eligible students points to potential instructional gaps that may hinder academic achievement. These findings emphasize the need for targeted teacher support, professional development, and equitable deployment of qualified educators, particularly in schools serving students at risk of ineligibility. Such interventions could play a vital role in improving teaching quality and narrowing performance disparities.

Table 3. Logistic regression result and average marginal effects on probability of WASSCE eligibility.

Average marginal effects Number of obs. = 350

Model VCE : OIM

Expression : Pr(eligibility), predict()

dy/dx w.r.t. : 2.Study_hours_cat 3.Study_hours_cat 4.Study_hours_cat 2.Motivation 3.Motivation 4.Motivation 2.Topics_covered_num 2.Teaching_rating_num 3.Teaching_rating_num 4.Teaching_rating_num 2.learning_resources_num 3.learning_resources_num 4.learning_resources_num 2.Extra_classes_attendance_num 2.study_materials_num 3.study_materials_num 2.Field_of_studies_num 3.field_of_studies_num 4.field_of_studies_num 2.school_type_attended_num 3.School_type_attended_num 2.Gender_num 2.Region_num 3.Region_num 4.Region_num 5.Region_num 6.region_num

Variable (Reference category)	Category	AME (dy/dx)	Std. Error	z-value	p-value	95% CI
Study Hours (< 2 hours)	2–4 hours	0.033	0.049	0.68	0.497	[-0.063, 0.129]
	5–7 hours	0.120	0.061	1.97	0.048	[0.001, 0.239] *
	> 7 hours	0.046	0.092	0.50	0.620	[-0.135, 0.226]
Motivation (Moderate)	Not motivated	0.060	0.081	0.74	0.459	[-0.098, 0.218]
	Slightly motivated	—	—	—	—	n.e.
	Very motivated	0.086	0.038	2.24	0.025	[0.011, 0.161] **
Topics Covered (No)	Yes	0.006	0.061	0.09	0.926	[-0.113, 0.124]
Teaching Quality (Excellent)	Fair	-0.100	0.060	-1.67	0.095	[-0.218, 0.018] †
	Good	-0.050	0.044	-1.15	0.250	[-0.136, 0.035]
	Poor	0.133	0.243	0.55	0.583	[-0.342, 0.609]
Learning Resources (Excellent)	Fair	-0.001	0.057	-0.02	0.985	[-0.113, 0.110]
	Good	0.026	0.046	0.56	0.578	[-0.065, 0.116]
	Poor	0.056	0.078	0.71	0.478	[-0.098, 0.209]
Extra Classes (No)	Yes	-0.020	0.064	-0.31	0.756	[-0.146, 0.106]
Study Materials (None)	Some	0.075	0.051	1.47	0.142	[-0.025, 0.174]
	Yes	0.138	0.044	3.16	0.002	[0.052, 0.224] ***
Field of Study (Arts)	Commerce	0.090	0.037	2.44	0.015	[0.018, 0.162] **
	Science	0.407	0.075	5.45	0.000	[0.261, 0.554] ***
	Technical	—	—	—	—	n.e.
School Type (Hybrid/PPP)	Private	-0.203	0.092	-2.22	0.026	[-0.383, -0.024] **
	Public	-0.262	0.082	-3.21	0.001	[-0.423, -0.102] ***
Gender (Female)	Male	0.050	0.035	1.42	0.154	[-0.019, 0.118]
Region (Central River)	Greater Banjul Area	0.229	0.057	4.01	0.000	[0.117, 0.341] ***
	Lower River	—	—	—	—	n.e.
	North Bank	0.066	0.056	1.18	0.237	[-0.044, 0.176]

	Upper River	-0.015	0.045	-0.33	0.742	[-0.104, 0.074]
	West Coast	0.140	0.047	2.96	0.003	[0.047, 0.232] ***

Logistic regression

Eligibility	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig.
: Base Less than 2 hours	1	.	.	.	.	.	
2-4 hours	1.467	0.866	0.65	0.516	0.461	4.666	
5-7 hours	3.315	2.132	1.86	0.062	0.94	11.69	*
More than 7 hours	1.671	1.648	0.52	0.603	0.242	11.549	
Attitude: Base Moderate motivation	1	.	.	.	.	.	
Not motivated	2.045	1.82	0.80	.422	.357	11.701	
Slightly motivated	1	.	.	.	.	.	
Very motivated	2.654	1.278	2.03	.043	1.033	6.822	**
Topics_covered: No	1	.	.	.	.	.	
Yes	1.062	0.69	0.09	0.926	0.297	3.796	
Teaching_rating: Excellent	1	.	.	.	.	.	
Fair	0.325	0.247	-1.48	0.139	0.073	1.443	
Good	0.603	0.261	-1.17	0.243	0.258	1.409	
Poor	2.966	5.383	0.60	0.549	0.085	104.018	
Learning_resourcesExcellent	1	.	.	.	.	.	
Fair	0.988	0.633	-0.02	0.985	0.282	3.466	
Good	1.317	0.667	0.54	0.587	0.488	3.556	
Poor	1.768	1.385	0.73	0.467	0.38	8.212	
Extra_classes_atteNo	1	.	.	.	.	.	
Yes	0.813	0.528	-0.32	0.75	0.228	2.905	
Study_materials: No	1	.	.	.	.	.	
Some	3.06	2.605	1.31	0.189	0.577	16.229	
Yes	5.885	4.583	2.28	.023	1.279	27.08	**
Field_of_studies :Arts	1	.	.	.	.	.	
Commerce	2.835	1.241	2.38	.017	1.202	6.684	**
Science	26.345	15.863	5.43	0	8.094	85.746	***
Technical	1	.	.	.	.	.	
School_type_atteHybrid	1	.	.	.	.	.	
Private school	0.21	0.149	-2.21	0.027	0.053	0.841	**
Public school	0.115	0.068	-3.64	0	0.036	0.368	***
Gender: base Female	1	.	.	.	.	.	
Male	1.691	0.63	1.41	0.159	0.814	3.511	
Region: base Central River Region	1	.	.	.	.	.	
Greater Banjul Area	11.482	8.743	3.21	0.001	2.582	51.066	***
Upper River Region	1	.	.	.	.	.	
North Bank Region	2.688	2.296	1.16	0.247	0.504	14.341	
Upper River	0.73	0.7	-0.33	0.743	0.112	4.776	

Region							
West Coast Region	5.68	4.185	2.36	0.018	1.341	24.067	**
Constant	0.008	0.013	-3.14	0.002	0	0.164	***
Mean dependent var		0.180	SD dependent var			0.385	
Pseudo r-squared		0.355	Number of obs			350	
Chi-square		117.244	Prob > chi2			0.000	
Akaike crit. (AIC)		262.731	Bayesian crit. (BIC)			359.180	

Note: *** p<0.01, ** p<0.05, * p<0.1.

4.3. Key Predictors of Eligibility: Multivariate Regression Analysis

The logistic regression model was employed to identify factors that significantly predict a student's eligibility in the West African Senior School Certificate Examination (WASSCE) in The Gambia. The model's overall fit is robust, as indicated by a statistically significant Chi-square value (117.244, $p < 0.000$) and a Pseudo R-squared of 0.355, suggesting that the model explains approximately 35.5% of the variance in WASSCE eligibility. The analysis of odds ratios and average marginal effects reveals several key determinants of academic success, which can be contextualized within the broader findings of the study.

A student's field of study emerged as the most powerful predictor of WASSCE eligibility. Science students had an odds ratio of 26.345, meaning they were over 26 times more likely to be eligible than the base category (Art students), a finding significant at the 1% level. In practical terms, being a Science student increases the probability of WASSCE eligibility by 40.7 percentage points, holding all other factors constant. Similarly, Commerce students were nearly three times more likely to be eligible (Odds Ratio = 2.835, $p < 0.05$), with an associated 9.0 percentage point increase in probability. This quantitative finding likely reflects disparities in resource allocation, teaching quality, and student selection processes between academic tracks.

The type of school a student attended was another critical factor. Compared to the base category (Public–Private Partnership schools), attending a public school significantly decreased the odds of eligibility (Odds Ratio = 0.115, $p < 0.01$). The average marginal effect shows that public school attendance reduces the probability of eligibility by 26.2 percentage points, while private school attendance reduces it by 20.3 percentage points ($p < 0.05$). This stark disparity aligns with the survey data highlighting issues of resource constraints and infrastructural deficits prevalent in the public school system.

Geographical inequities are also apparent. Students in the Greater Banjul Area (GBA) had odds of eligibility over 11 times higher than those in the Central River Region ($p < 0.01$), translating to a 22.9 percentage point higher probability. Similarly, students in the West Coast Region had 5.68 times higher odds ($p < 0.05$), or a 14.0 percentage point higher probability. This regional variation quantifies the urban-rural divide in educational outcomes.

At the individual level, several factors proved significant. Student access to study materials was a strong enabler - students with adequate materials were almost six times more likely to be eligible (Odds Ratio = 5.885, $p < 0.01$), corresponding to a 13.8 percentage point increase in probability. Studying for 5-7 hours per day was also a significant positive predictor (Odds Ratio = 3.315, $p < 0.05$), increasing eligibility probability by 12.0 percentage points. Additionally, having a "Very motivated" attitude significantly improved a student's odds (Odds Ratio = 2.654, $p < 0.05$), increasing the probability of success by 8.6 percentage points.

In conclusion, the analysis demonstrates that WASSCE performance in The Gambia is not a function of individual effort alone but is profoundly shaped by systemic and socioeconomic factors. The results confirm that eligibility is significantly determined by a student's field of study, type of school, geographical location, and access to fundamental resources.

Other factors including teaching ratings, learning resources, extra classes attendance, gender, and some regional categories did not demonstrate statistically significant effects at the conventional 5% level. These findings underscore the importance of daily study commitment, strong motivation, adequate study materials, and field of study in determining WASSCE performance and subsequent eligibility for university admission, while also highlighting the need to address disparities across school types and geographic regions.

Table 4. Challenges Reported by Students During WASSCE Preparation.

Challenge	Frequency	% of Responses	% of Students
Health Challenges	113	18.37%	25.17%
Family Responsibilities	129	20.98%	28.73%
Bad Peer Influence	53	8.62%	11.80%
Financial Challenges	172	27.97%	38.31%
Other	35	5.69%	7.80%
No Challenges	113	18.37%	25.17%
Total	**615**	**100.00%**	**136.97%**

4.4. Challenges

This section examined the prevalence of various challenges reported by students preparing for the West African Senior School Certificate Examination (WASSCE). The frequency distribution analysis (N=449 students providing 615 total responses) reveals significant patterns in the obstacles students face during their examination preparation period.

Financial challenges emerged as the most commonly reported obstacle, affecting 38.31% of students and accounting for 27.97% of all challenges cited. This finding underscores the substantial economic barriers that nearly two-fifth of students encounter during their WASSCE preparation. Family responsibilities represented the second most prevalent challenge, reported by 28.73% of students and comprising 20.98% of total responses, indicating that domestic obligations significantly impact a considerable portion of examinees.

Health-related issues affected 25.17% of students, matching the proportion who reported facing no challenges (25.17%). This parity suggests that while a quarter of students navigate their preparation without notable difficulties, an equal proportion contend with health problems that may hinder their academic performance. Peer influence appeared as a less common but still notable challenge, affecting 11.80% of students, which may reflect the social dynamics influencing adolescent academic engagement.

The multiple-response nature of the data (Totalled 136.97% when summing student percentages) indicates that many students face multiple concurrent challenges. This cumulative burden of obstacles has important implications for educational equity and student support systems. The findings particularly highlight the need for financial assistance programs and family support mechanisms to mitigate these prevalent challenges. Future research should explore how these challenges interact and their cumulative effects on examination performance.

Table 5. Systemic Challenges Reported by Teachers in WASSCE Preparation.

Challenge	Frequency	Percent of responses (%)	Percent of cases (%)
Lack of adequate teaching resources	272	22.17	78.61
Insufficient time to cover the curriculum	218	17.77	63.01
Large class sizes	108	8.8	31.21
Low student motivation	213	17.36	61.56
Limited access to professional development	150	12.22	43.35
Parental involvement challenges	217	17.69	62.72
Other (Please specify)	49	3.99	14.16
Total	**1227**	**100**	**354.62**

This study examines the systemic barriers teachers face when preparing students for the West African Senior School Certificate Examination (WASSCE) through a multiple-response survey of 346 educators. The analysis reveals significant institutional and pedagogical constraints, with respondents reporting 1,227 total challenges (mean = 3.55 challenges per teacher). Resource deficiencies emerge as the predominant concern, with 78.61% of teachers identifying inadequate teaching materials as a major obstacle (22.17% of total responses), underscoring critical gaps in educational infrastructure. Temporal constraints similarly affect instructional quality, as 63.01% of educators report insufficient curriculum coverage time (17.77% of responses), suggesting structural misalignments between syllabus requirements and academic calendars.

Notably, psychosocial factors substantially influence preparation efficacy. Low student motivation constitutes a persistent challenge for 61.56% of respondents (17.36% of responses), while limited parental engagement affects 62.72% of cases (17.69% of responses), reflecting broader socio-educational dynamics that extend beyond classroom boundaries. Professional development limitations (reported by 43.35% of teachers) and large class sizes (31.21%) further compound these difficulties, indicating systemic underinvestment in educator capacity building and optimal learning environments.

These findings carry important policy implications. The prevalence of resource-related challenges suggests that material investments should be prioritized. The temporal constraints necessitate curriculum audits and potential restructuring of academic timelines. Furthermore, the dual challenges of student motivation and parental involvement highlight the need for comprehensive engagement strategies, possibly incorporating behavioural interventions and community partnership programs. Future research should employ mixed-methods approaches to investigate how these challenges interact at institutional and individual levels, and to evaluate the effectiveness of targeted interventions in diverse educational contexts. The cumulative burden of these obstacles, as evidenced by the high multiple-response rate, underscores the necessity for integrated, system-wide reforms to enhance WASSCE preparation outcomes.

5. Conclusion and Recommendation

5.1. Conclusion

This study set out to identify and examine the key factors influencing student performance in the West African Senior School Certificate Examination (WASSCE) in The Gambia. Through a quantitative cross-

sectional survey and logistic regression analysis, the findings reveal that WASSCE outcomes are shaped by a combination of institutional, socioeconomic, and student-level factors, with structural determinants playing a particularly influential role.

The regression results indicate that institutional and systemic factors exert the strongest influence on eligibility. Students in the science stream had a 40.7 percentage point higher probability of eligibility compared to those in arts or technical fields, highlighting significant disparities in academic preparation and resource allocation across disciplines. Similarly, public school attendance reduced eligibility probability by 26.2 percentage points relative to hybrid schools, underscoring the impact of school type and resource availability.

Socioeconomic and geographic inequities were also prominent. Access to study materials increased eligibility probability by 13.8 percentage points, and students in the Greater Banjul Area had odds of eligibility over 11 times higher than those in the Central River Region, quantifying the profound urban-rural divide in educational outcomes.

While student-level factors such as daily study hours (5–7 hours increased eligibility by 12 percentage points) and motivation ("Very motivated" students had 8.6 percentage points higher eligibility) were significant, their effects were comparatively modest. Notably, variables including gender, participation in extra classes, teaching ratings, and topic coverage did not emerge as statistically significant predictors.

These findings collectively demonstrate that WASSCE performance in The Gambia is not merely a function of individual effort but is fundamentally shaped by structural inequities in educational provision. The concentration of success among science students, urban residents, and those in hybrid schools points to systemic barriers that limit opportunities for students in other streams, regions, and school types.

This evidence underscores the necessity of multi-level interventions that address institutional resource gaps, curriculum alignment, and regional disparities, while also supporting student discipline and motivation. Without such comprehensive reform, efforts to improve WASSCE outcomes are unlikely to achieve equitable or sustainable impact across The Gambia's diverse educational landscape.

5.2. Recommendations

5.2.1. Addressing Structural and Systemic Inequities

1. Review and Rebalance Resource Allocation: The Gambia Ministry of Basic and Secondary Education (MoBSE) should conduct an equity audit of resource distribution. Given the 40.7 percentage point advantage for Science students and the rural-urban divide, policy must prioritize targeted investments in laboratories, libraries, and qualified teachers for Arts/Commerce streams in public schools, particularly in regions like CRR, LRR, and URR.
2. Develop a Regional Support Strategy: To address the extreme geographic disparities (e.g., GBA odds 11x higher than CRR), MoBSE should establish a Regional Educational Support Fund. This fund would finance infrastructure upgrades, teacher retention incentives (e.g., rural allowances), and mobile digital learning labs for the most disadvantaged regions.
3. Foster Public-Private Partnership (PPP) Models: Given the superior performance of Hybrid/PPP schools, the government should develop a clear policy framework to encourage and scale sustainable PPPs in secondary education, focusing on management practices and resource sharing rather than privatization.

5.2.2. Enhancing Pedagogical and School-Level Support

4. Implement a National Study Materials Scheme: To mitigate the 13.8 percentage point eligibility boost linked to material access, MoBSE should partner with WAEC and publishers to provide standardized, curriculum-aligned textbook sets and past-paper booklets to all final-year students in public schools, with a focus on core subjects.
5. Institutionalize Academic Mentoring Programs: Schools should be supported to design and implement structured mentoring programs. These programs would formalize the development of effective study habits (e.g., moving students toward the beneficial 5-7 hour daily study range) and foster intrinsic motivation, which your study found increased eligibility by 8.6 percentage points.

5.2.3. Mitigating Socioeconomic Barriers

6. Introduce a Targeted WASSCE Support Grant: To alleviate the financial challenges reported by 38.31% of students, the government and development partners should pilot a need-based grant for Grade 12 students from low-income households. This grant would cover essential costs like exam fees, transportation, and basic materials, reducing the economic pressure that hinders preparation.
7. Launch Community-Parent Engagement Campaigns: To address the teacher-reported challenge of low parental involvement (62.72%), schools and regional education directorates should organize regular community forums and result-awareness workshops. These would educate parents on the WASSCE's importance and equip them with simple strategies to support their children's learning at home.

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