INVESTIGATING THE CAUSE OF JAMB FAILURE RATES AND PREDICTING FUTURE PERFORMANCE TRENDS (2020-2030)

Presented To

InternPulse Data Analysis Track

Presented By

Group 4

PROJECT BACKGROUND & OBJECTIVES

Background

Over the past five years, there has been a noticeable increase in the failure rate of students taking the Joint Admissions and Matriculation Board (JAMB) examination in Nigeria.

Objectives

- Investigate causes (2020–2025)
- Collect and Analyze Data obtained from the investigation.
- Build a predictive model to Forecast trends from 2026 - 2030
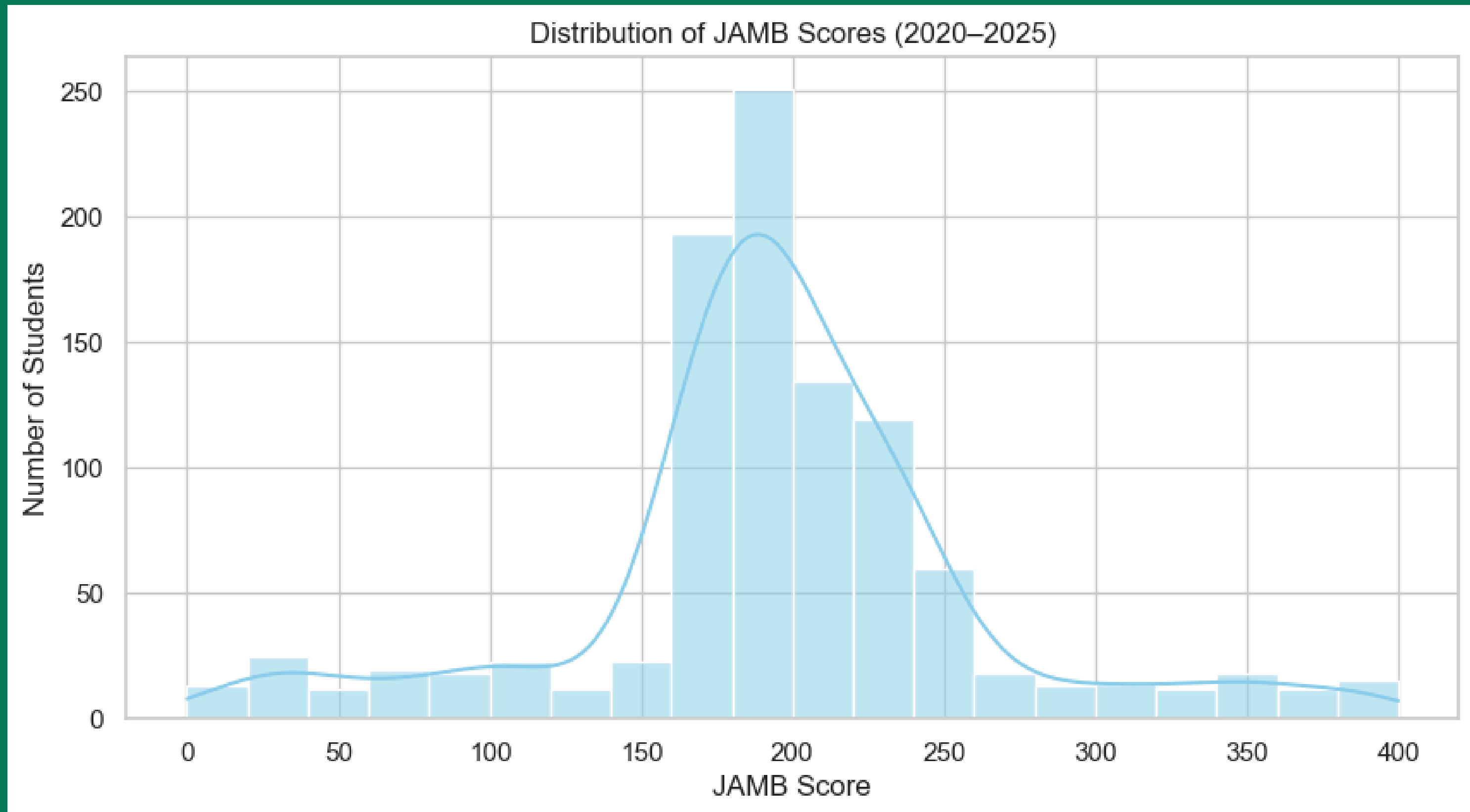- Provide recommendations.

SUMMARY OF COLLECTED DATA

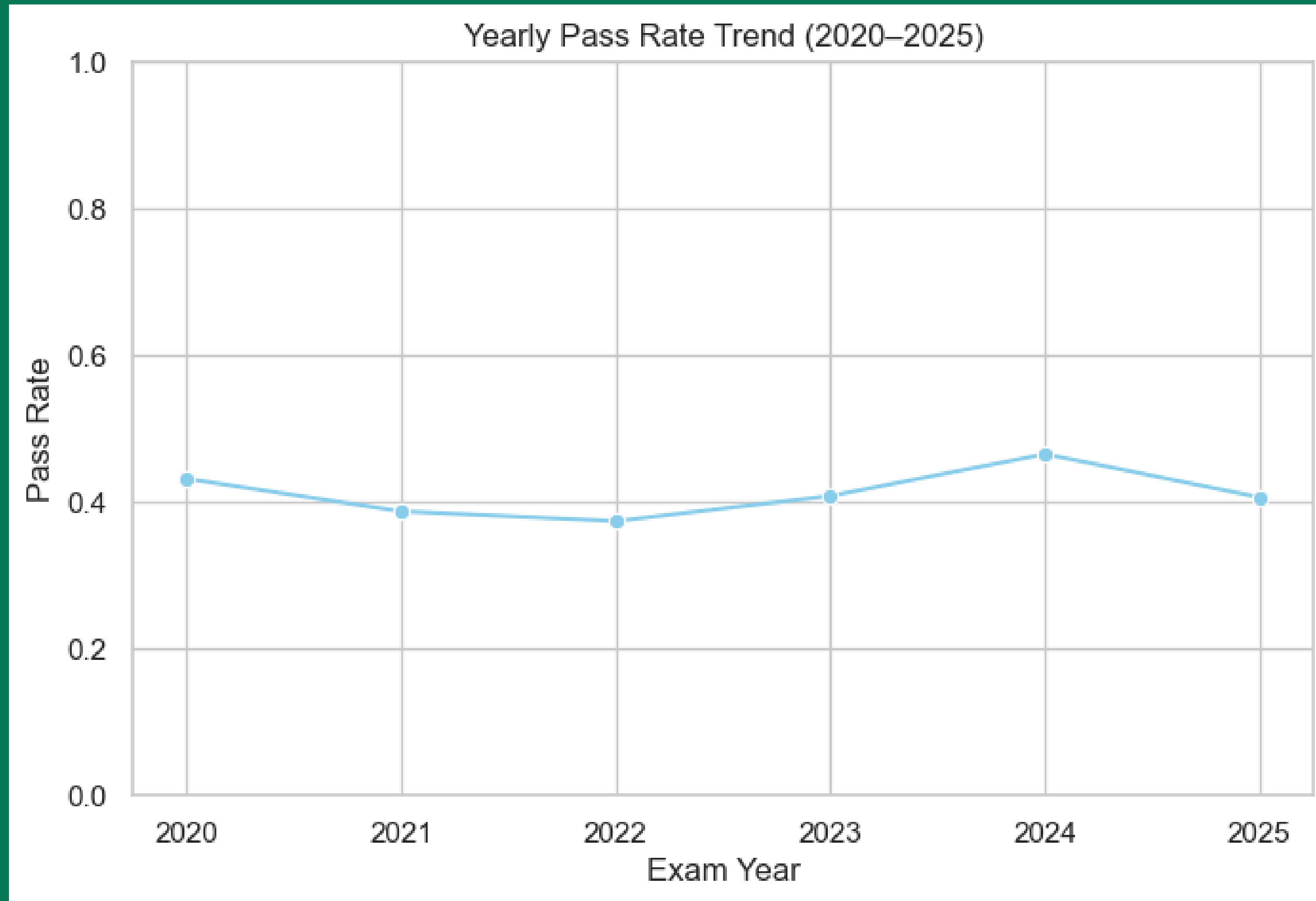Data was collected via Google Forms from 1000+ JAMB candidates (2020–2025).

Survey Design Highlights
- Demographic Information: Age, gender, school type (public/private), state.

- Exam Attempts: Year(s) the candidate sat for JAMB, and the highest score attained.

- Preparation Methods: Study hours per day, types of materials used (books, online resources, private tutoring).

- Digital Readiness: Frequency of CBT practice, internet access, and access to devices.

- Self-assessment: Confidence level before the exam, perception of how well the score reflects their ability, and reasons for perceived underperformance.
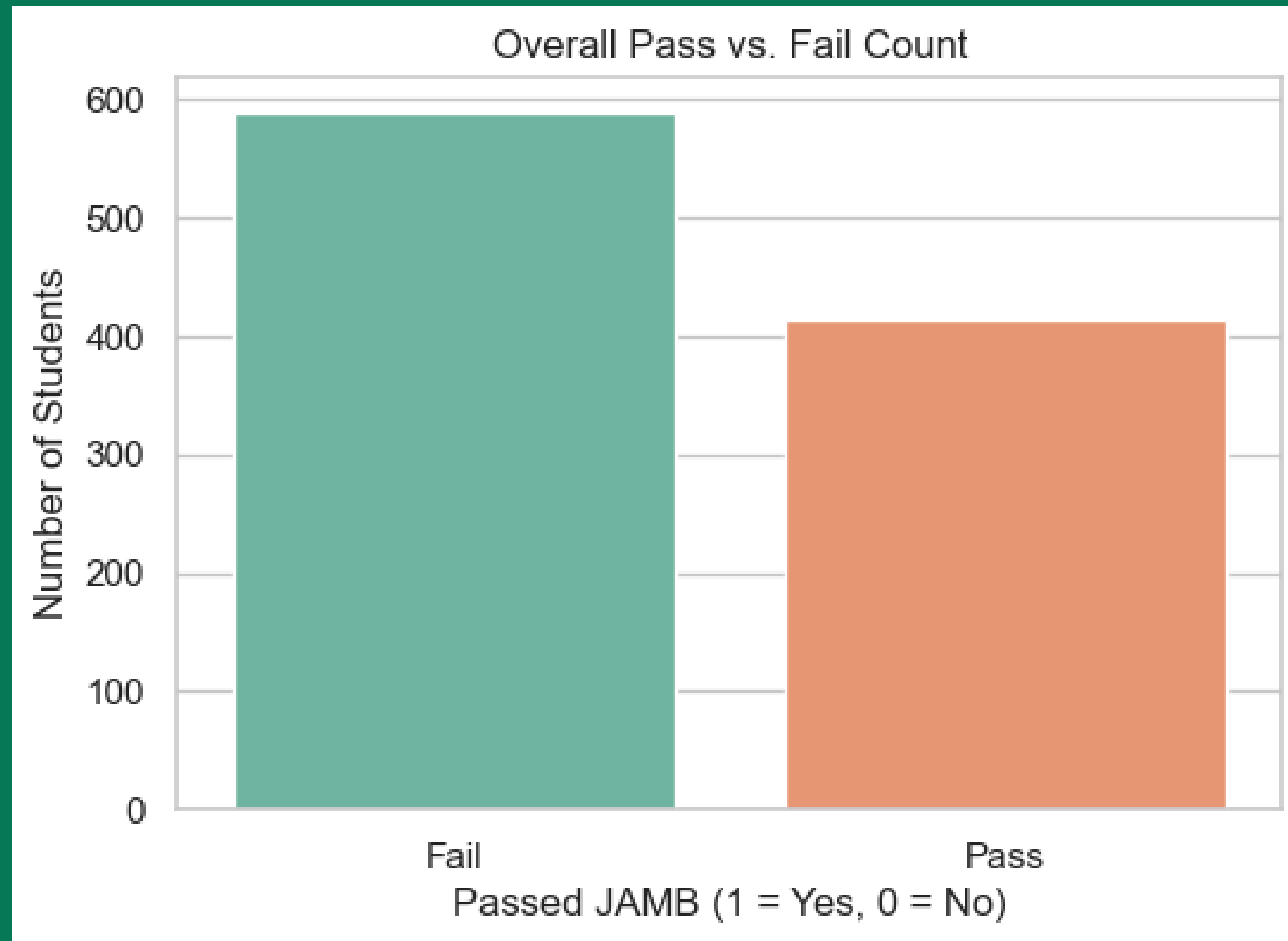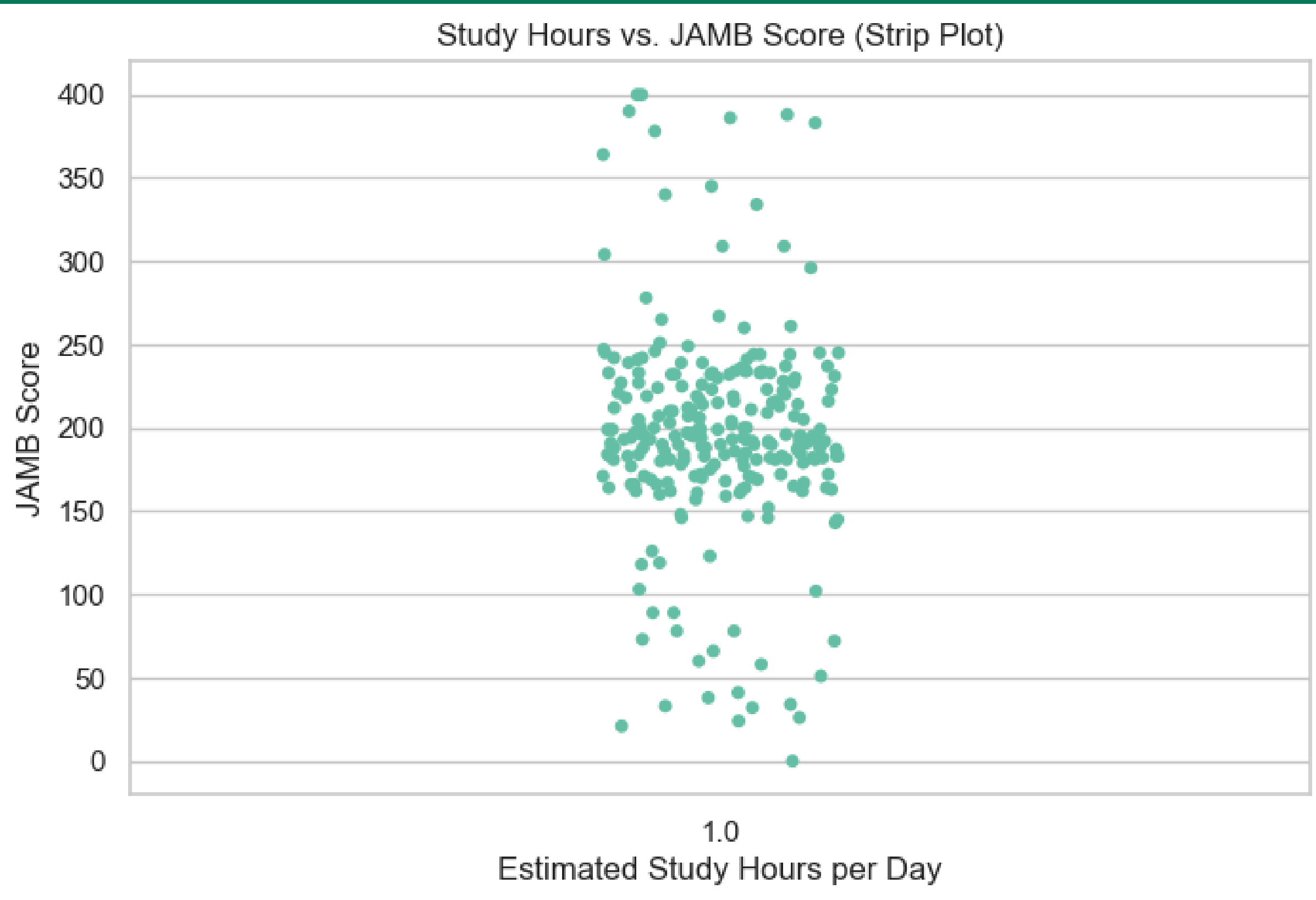
EXPLORATORY DATA ANALYSIS (EDA)

Distribution of JAMB Scores (2020–2025)

EXPLORATORY DATA ANALYSIS (EDA)

Yearly Pass Rate Trend (2020–2025)

EXPLORATORY DATA ANALYSIS (EDA)

Overall Pass vs. Fail Count

EXPLORATORY DATA ANALYSIS (EDA)

Study Hours vs. JAMB Score (Strip Plot)

EXPLORATORY DATA ANALYSIS (EDA)

Pass Rate by Gender
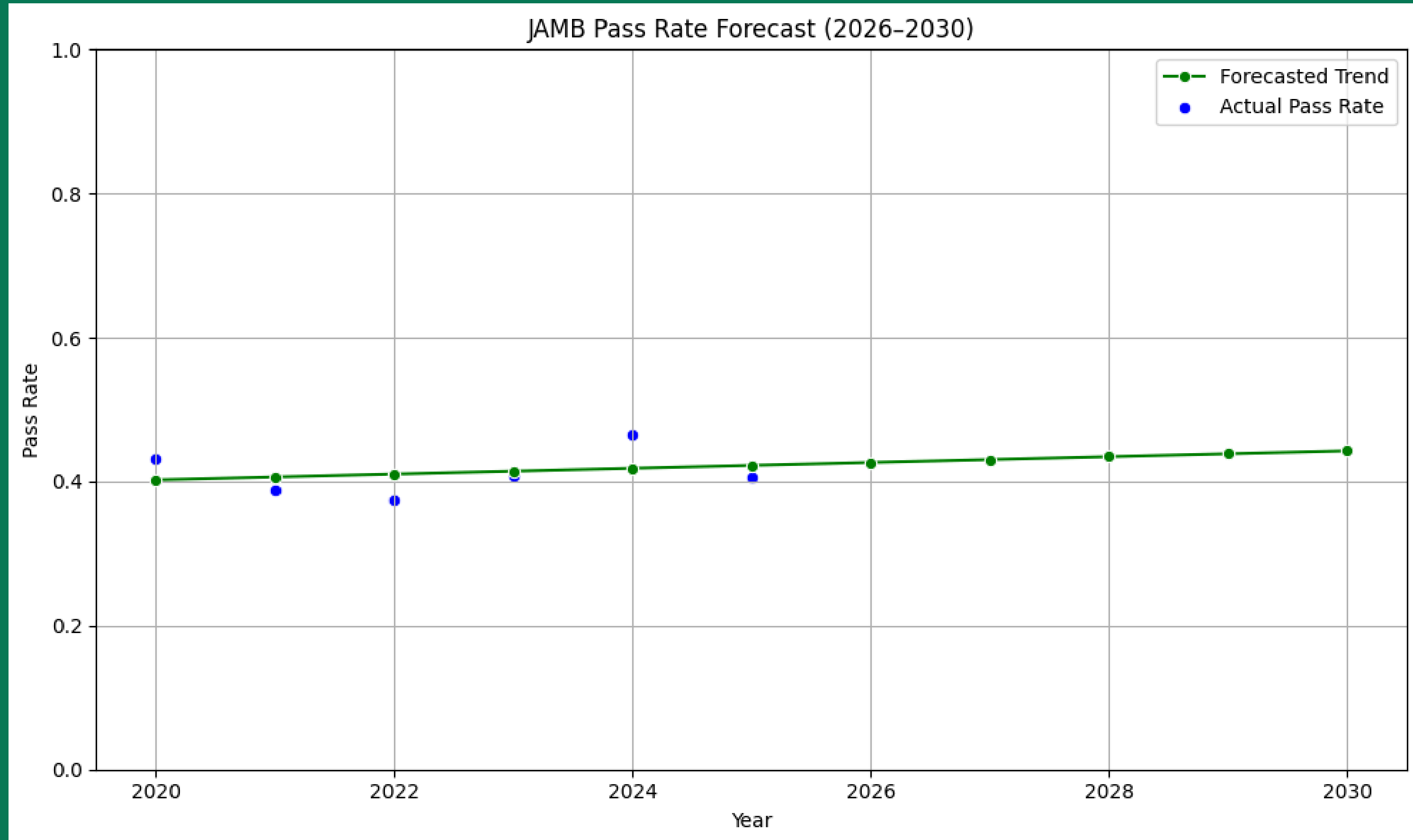
KEY FINDINGS FROM EDA

- Scores mostly between 180–250; high scores (260+) rare.

- 4–6 hours/day study correlated with higher scores.

- Frequent CBT practice and digital access improved performance.

- Private school students performed slightly better.

PREDICTIVE MODEL PERFORMANCE AND FORECAST

JAMB Pass Rate Forecast (2026–2030)

RECOMMENDATIONS

For Students
- Use CBT practice modules while studying
- Study 3–4+ hours/day
- A mix of online and offline materials.

For Educators
- Implement digital learning and CBT simulations in schools and preparatory centers/facilities.

For Policymakers
- Expand digital access
- Subsidize CBT license criteria, to encourage onboarding of more independent facilities to accommodate the ever increasing student population, for better examination experience.
- Provide early exam orientation.

CONCLUSION

Implementing these recommendations can significantly enhance JAMB performance outcomes by addressing key challenges identified through data analysis. By fostering a supportive and well-equipped environment, students can better prepare for the exam, leading to improved performance and increased access to tertiary education opportunities in the next five years to come.