

# INVESTIGATING JAMB PERFORMANCE: CAUSES & FUTURE TRENDS(2020-2030)

Data-driven insights and actionable recommendations for improving JAMB outcomes in Nigeria.

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# CRITICAL CHALLENGE IN JAMB PERFORMANCE

Exploring increased failure rates and goals for data-driven research solutions



## RISING JAMB UTME FAILURE RATES (2020-2025)

Significant increase in failure rates is adversely affecting access to tertiary education and national growth.



## RESEARCH AIMS TO IDENTIFY ROOT CAUSES

The project seeks to uncover the underlying reasons behind the declining JAMB performance through data analysis.



## FORECASTING FUTURE PERFORMANCE TRENDS

Research will project JAMB performance trends for 2026 to 2030 to better inform policy and interventions.



## PROPOSE ACTIONABLE RECOMMENDATIONS

Based on findings, the study will suggest practical measures to improve performance and educational outcomes.

1

## DATA SOURCE

Survey of 450 recent JAMB candidates (2020-2025) focusing on their demographics, study habits, and JAMB scores.

2

## DATA CLEANING & PREPROCESSING

Ensuring processed data is reliable and ready for analysis to facilitate accurate results.

3

## EXPLORATORY DATA ANALYSIS (EDA)

Identifying patterns and correlations within the dataset to inform future analyses and interpretations.

4

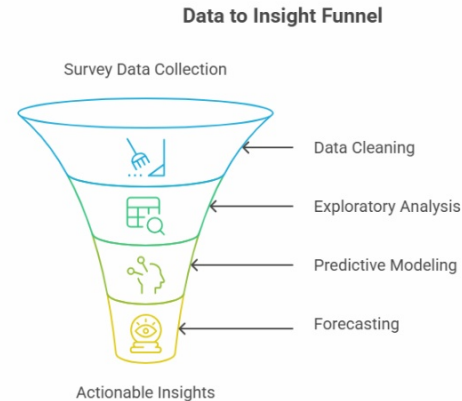
## PREDICTIVE MODELING (ML)

Utilizing machine learning techniques to construct models that predict future success tiers among candidates.

5

## FORECASTING

Projecting future performance trends based on insights gained from the data analysis process.



# CURRENT PERFORMANCE: TIERS OF SUCCESS

Insights on JAMB Performance Metrics

## FAILING RATES

19.33% failing rate, directly highlighting the project's core concern

## LIMITED OPTIONS

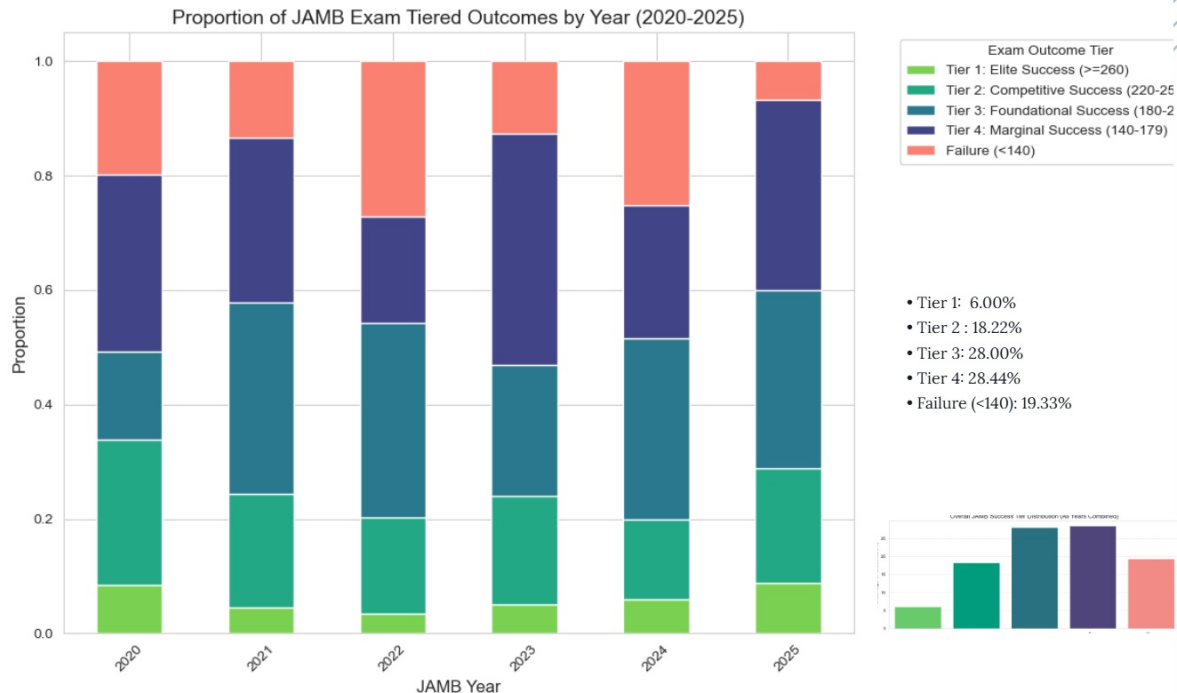
Over 56% of students fall into the Foundational and Marginal categories

## 2023 TREND

High concentration in Marginal Success (40.51%),

## 2 PEAK YEARS

Notable failure peaks in 2022 and 2024.



# PREDICTING FUTURE TRENDS

Key Insights from Our  
Predictive Model

jamb_year	Failure	Success
2020	62%	38%
2021	62%	38%
2022	56%	44%
2023	63%	37%
2024	64%	36%
2025	56%	44%
2026	58%	42%
2027	58%	42%
2028	57%	43%
2029	57%	43%
2030	56%	44%

## MODEL PREDICTS FUTURE CHALLENGES

Our model indicates ongoing challenges without significant intervention to change outcomes.

## PREDICTIVE ACCURACY ACHIEVED

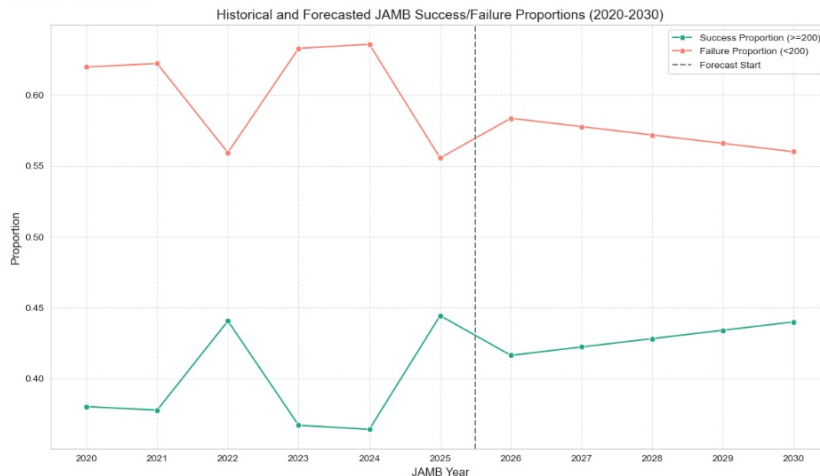
The Random Forest Classifier achieved approximately 52.22% accuracy in predicting success tiers.

## LINEAR REGRESSION USED

Forecasting employed a Linear Regression model based on historical success and failure proportions.

## CONTINUATION OF TRENDS




Forecasts from 2026 to 2030 suggest a continuity in success and failure rates, stressing urgent action.





# DRIVING IMPROVEMENT: DATA-BACKED SOLUTIONS

Concrete recommendations for enhancing JAMB outcomes

Characteristic	Students	Educators & Schools	Policymakers/ Government
 <b>Study Habits</b>	Structured study implementation	Promote study groups	Fund intervention programs
 <b>Resource Usage</b>	Use past questions	Integrate JAMB prep early	Standardize resource provision
 <b>Tech Skills</b>	Enhance CBT familiarity	Invest in teacher development	Prioritize rural infrastructure

# SHAPING THE FUTURE OF NIGERIAN EDUCATION

Collaborative, Data-Guided Actions for Sustainable Educational Progress



## COLLABORATIVE ACTION IS ESSENTIAL

Unified efforts among all stakeholders are vital to build a brighter educational future in Nigeria.



## TARGETED INTERVENTIONS NEEDED

Focus on improving study habits, resource access, and addressing regional disparities to enhance outcomes.



## URGENCY OF DATA-DRIVEN ACTIONS

Immediate interventions backed by concrete data are critical to reversing negative educational trends.



## CALL TO ACTION FOR STAKEHOLDERS

Encourage all parties to collaborate effectively for the implementation of recommended measures.

# IMPLEMENT RECOMMENDATIONS EFFECTIVELY

Engage in collaborative efforts to implement the recommendations outlined and ensure a proactive approach to improving JAMB outcomes for future candidates.

