

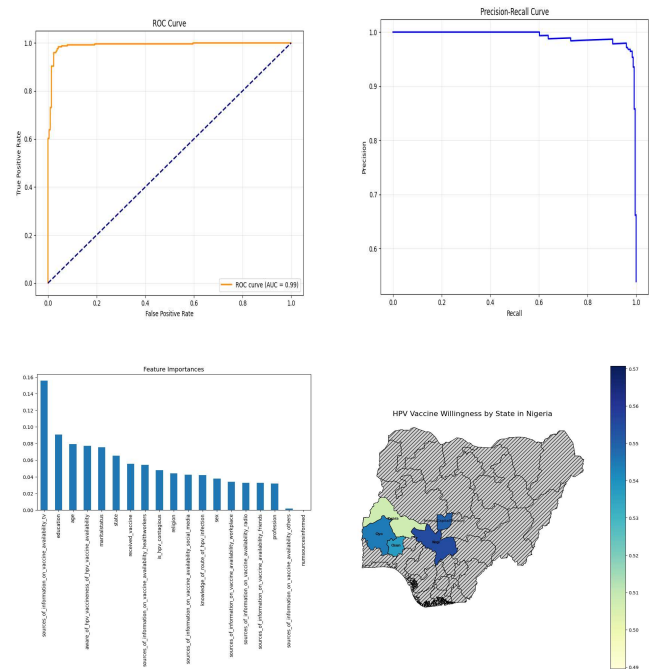
INTRODUCTION

Cervical cancer is a significant health issue in Nigeria, but this is mostly preventable with the help of HPV vaccination. Nevertheless, the vaccine uptake continues being low because of cultural, socioeconomic, and communication factors.

The analysis of the article relies on machine learning to identify the most important variables in HPV vaccine uptake and inform data-driven health communication to increase its coverage.

OBJECTIVES

- Identify major predictors of HPV vaccine willingness.
- Build predictive models for adoption patterns.
- Map geographic regions of low willingness.
- Suggest data-based communication interventions.



CONCLUSION

Machine learning provides actionable insights to **guide AI-powered communication** for HPV vaccine uptake in Nigeria. Integrating AI models with public health programs can **accelerate progress toward cervical cancer elimination goals**.

REFERENCES

- Du et al. (2017) - HPV Vaccine ML Sentiment Analysis.
Elemuwa et al. (2024) - Ward System Engagement in Nigeria.
Isah et al. (2025) - Prediction of Cervical Cancer using ANN.
Otorokpa et al. (2024) - HPV Vaccine Rejection in Nigeria.

ACKNOWLEDGMENT

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RESULTS

Top Predictors

Television exposure (importance =0.15)
Education level (= 0.09)
Marital status (= 0.08)
Age group (=0.06)
Region/State (= 0.05)

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.. Confusion Matrix:  
[[209 17]  
 [ 4 232]]
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Classification Report:				
	precision	recall	f1-score	support
0	0.98	0.92	0.95	226
1	0.93	0.98	0.96	236
accuracy			0.95	462
macro avg	0.96	0.95	0.95	462
weighted avg	0.96	0.95	0.95	462