

## Community Acceptance of Ai- Based Health Tools in Ankpa Local Government Area of Kogi State, With Policy Implications

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### Abstract

This study examined the utilization and community acceptance of Artificial Intelligence (AI)-based health tools in Ankpa Local Government Area of Kogi State, Nigeria, with emphasis on identifying policy implications for effective integration. The study is anchored on the Technology Acceptance Model (TAM). Data were gathered from a purposively selected sample of 201 respondents including household heads, local leaders, and health workers across a few Ankpa localities using a survey study approach. Results showed low community trust with Mean = 2.05, poor understanding of AI functions with Mean score of 1.99, and resistance among the elderly with Mean = 2.03. Also, there was optimism that sensitization could increase acceptance (= 2.94). Regarding adoption factors, lack of infrastructure (= 2.18), fear of job loss (= 2.20), and insufficient government support (= 1.98) were not seen as dominant barriers. Similarly, respondents agreed that training healthcare workers (= 3.03) and addressing ethical concerns such as data privacy (= 2.89) are critical to successful adoption. These results imply that integrating AI health technologies in rural communities requires inclusive policy frameworks that prioritize community engagement, ethical protections, and human capacity-building in addition to technology deployment. The study comes to the conclusion that if sociocultural realities and infrastructure needs are addressed through focused policy action, AI-based health interventions can greatly assist healthcare delivery in Ankpa LGA.

**Key words:** Artificial intelligence; Utilization; Community; Acceptance; AI-based health tools; Kogi State; Nigeria

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### INTRODUCTION

Artificial Intelligence (AI) refers to the simulation of human cognitive functions such as learning, problem-solving, and decision-making by machines, especially computer systems (Dwivedi, Hughes, Ismagilova, Aarts et al. 2019). AI applications in healthcare include predictive diagnoses, remote patient monitoring, AI-driven chatbots, telemedicine, and electronic health record optimization (Varnosfaderani & Forouzanfar, 2024). To enhance clinical precision, shorten patient waiting time, and control health contingencies like pandemic outbreaks and chronic diseases incidence, the health industry has started using AI tools globally (Rajpurkar, Chen, Banerjee, & Topol, 2021). In sub-Saharan Africa, and Nigeria, in particular, the push to use AI as a means of strengthening health systems, in under-served region is growing (Ugar & Malele 2024).

Nevertheless, in Kogi, the penetration of AI in the field of healthcare is insignificant, and it can help solve such traditional problems in the country as epidemics, maternal or child deaths, and the prevalence of malaria and a lack of medical workers. Kogi State has repetitively suffered public health crises that include Lassa fever epidemic to low rates of immunization and collapse of primary healthcare facilities (WHO, 2022). Equally, Ankpa Local

Government Area, Kogi State, is characterized by constant health problems such as inaccessible qualified health professionals, inadequately equipped health centers as well as elevated incident of avoidable diseases (Sherifat & Habib, 2023). Such health issues create a context within which the possible involvement of tools based on AI in substituting exhausted human resources, enhancing diagnostics, and developing interventions based on data should be weighed.

In clinical decision support, AI tools, like IBM Watson, Babylon Health, and Google DeepMind Health, have been shown to be very accurate globally, although their effectiveness is not only determined by technical efficiency but also by trust among users and the accordance of the policy (Bidgoli, 2023). The same thing can be said about Nigeria, where projects like ADVISER (AI-based vaccine demand forecasting) in Oyo and AwaDoc chatbot in Abia State demonstrated participation with communities and the provision of proper information lead to a drastic change in acceptance of digital tools (Ezeaka, 2024). The socio-cultural, educational, and infrastructural set ups of the various states in Nigeria are however very different and what works in one cannot be automatically applicable to another and extend to the local government areas. Kogi State is still battling the same health issues that germinated whether in infectious disease, maternal and child deaths etc, mainly caused by inaccessible health services, inadequate healthcare professionals and health education amongst the inhabitants of rural areas (Federal Ministry of Health, 2022). The COVID-19 pandemic once again revealed the vulnerability of the health surveillance and data systems used by the state, which further strengthened the importance of the digital innovations like AI to aid healthcare delivery.

Conceptually, medical sociology and medical geography as aspects of the humanities seem vital and complementary to the study of how people use and accept AI-based health tools in many rural communities, including Ankpa Local Government Area in Kogi State. The medical sociology looks into the impact of social structure, cultural beliefs and education as well as behaviors around health in the acceptance or lack of it of health technologies. As an example, the community attitude to the AI tools could depend on their prior positivity toward the health professionals, fear of the loss of their workplaces by health workers, or their socio-religious perceptions of disease and cure (Habib & Sherifat, 2023). All these sociocultural processes play a critical role in defining ethical issues, digital literacy disparities, and AI implementation communication approaches. What medical geography offers in its turn is spatial analysis of health delivery services, technologies, and outcomes distribution on physical landscapes. It exposes the healthcare inequality patterns, namely, the

inadequate infrastructure, health facility accessibility, and unreliable connectivity in rural Kogi, the dynamics of which might interfere with the deployment and efficiency of AI tools (Gayawan, Adebayo, & Waldmann, 2019).

Even though such a transition could be advantageous, the implementation of AI health tools in Ankpa Local Government and Kogi State, in general, is not certain because it is affected by various adverse factors like poor digital infrastructure, low technological literacy, and local communities' skepticism. Policy structures that can be used to govern and merge AI in the healthcare sector are also lacking. AI health technology has the potential to improve equity in medical care, but without involving communities, investing in efficacious infrastructure, and legislative support, it can end up being yet another source of inequity in the provision of medical care or fail to live to its potentials. Therefore, exploring the utilization and acceptance of AI-based health tools in Ankpa Local Government Area of Kogi State is critical for designing inclusive digital health policies which can be applied to other local governments in the state and beyond.

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## STUDY OBJECTIVES

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The aim of the study is to examine the utilization and community acceptance of AI-based health tools in Kogi State, with specific focus on Ankpa Local Government Area, with the goal of identifying policy implications for effective integration.

Specifically, the study aims to:

- Assess the extent to which AI-based health tools are accepted by healthcare workers and community members in Ankpa Local Government Area of Kogi State.
- Identify the major factors that influence the adoption or resistance to AI-based health tools among different communities in Ankpa Local Government Area of Kogi State.

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## RESEARCH QUESTIONS

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- What is the extent of community acceptance of AI-based health tools among healthcare workers and residents in Kogi State?
- What are the major factors influencing the adoption or resistance to AI-based health tools within different communities in Kogi State?

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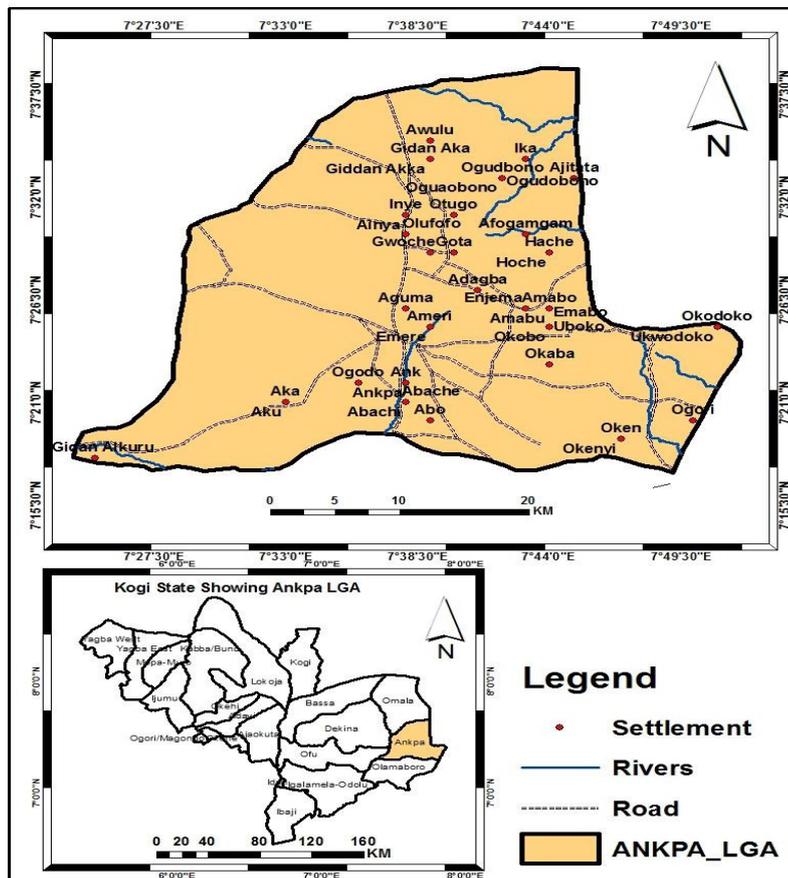
## AREA OF THE STUDY

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Ankpa is the administrative headquarter of Ankpa Local Government Area situated in the eastern part of Kogi State. It lies between latitude 7°16'N and 7°41'N and longitude 7°22'E and 7°51'E. It is bounded by Omala Local

Government Area to the North, to the east by Otuorkpo LGA in Benue State, to the west by Ofu and Dekina Local

Government Areas and to the south by Olamaboro Local Government Area (Habib & Idoko, 2025).



**Figure 1**  
Ankpa Local Government Area  
*Source:* Adopted from Administrative Map of Kogi State (2024).

## THEORETICAL FRAMEWORK

This research is based on Technology Acceptance Model (TAM). This framework presents a clear way of looking at this intricate association amidst technology usability, conduct within the community, and health-related decision-making. Originally developed by Davis (1989), TAM posits that two primary factors determine the acceptance of any new technology: Perceived Usefulness (PU): the extent to which a person believes that using the system will enhance their performance; and Perceived Ease of Use (PEOU): the degree to which a person believes that using the system will be free of effort. In the context of AI-based health tools in Ankpa, TAM explains how healthcare workers and community members decide whether or not to utilize these innovations (Sherifat & Habib, 2023). In case AI chatbots, diagnostic platforms, or predictive health apps are viewed as useful and simple to use, they might be more likely to be used by people. On the other hand, a feeling of complexity or irrelevance can lead to resistance and this is common in low-literacy, rural communities that most parts of Kogi State are.

Technology Acceptance Model (TAM) interpret community responses. Perceived Usefulness (PU) is reflected in items assessing whether AI technologies improve health care access and outcomes (e.g., AI-enabled health monitoring devices help people in my community get better healthcare services). Perceived Ease of Use (PEoU) is also captured through items measuring understanding and perceived autonomy, such as “People in my community understand how AI health monitoring works.” These constructs are interpreted within the study’s critical framework, linking acceptance to trust, surveillance concerns, and community agency.

## RESEARCH METHOD

The study adopts a survey research design which involves selecting marginalized communities with public health centres such as Okolo, Ojobi, Alor, among others in Ankpa Local Government Area, Kogi State. A purposive sampling technique was adopted to select communities where AI-enabled health monitoring initiatives (e.g., wearables, mobile health apps, remote diagnosis platforms) have

been introduced. Within these communities, a stratified random sample technique was applied to the targeted population (N= 420), which was stratified into household heads, community health workers, and local community leader, reflecting their distinct roles in health service delivery and community decision-making. A total of 201 respondents were randomly selected across these strata, with attention to gender, age, and socio-economic diversity to capture varied perspectives. Eligibility criteria

included being 18 years and above, resident in the selected communities and either direct users of or stakeholders in AI-enabled health monitoring initiatives. This combined purposive- stratified approach enhanced methodological transparency, relevance and reproducibility. A structured questionnaire was designed and distributed to collect data from the respondents. Data collected were subjected to mean rating on 4-point Likert scale and standard deviation with the aid of SPSS V21.

**Table 1**  
**Data Analysis and Interpretation**

<b>Perceptions: Community Acceptance of AI-Based Health Tools</b>									
S/N	Item	SA	A	D	SD	Total	Mean	S.D	Decision
1	People in my community trust the use of AI-based tools in healthcare.	20	30	90	61	201	2.05	0.92	Disagree
2	Cultural or religious beliefs influence the acceptance of AI-based health technologies.	28	40	75	58	201	2.23	1.00	Disagree
3	Community members understand how AI tools function in diagnosing or recommending treatments.	18	34	80	69	201	1.99	0.93	Disagree
4	The elderly population in my community is open to using AI-based healthcare tools.	25	31	70	75	201	2.03	1.01	Disagree
5	If adequately sensitized, my community would be willing to adopt AI-based health solutions.	60	80	40	21	201	2.94	0.95	Agree
<b>Factors Influencing Adoption or Resistance: Community Views</b>									
6	Lack of digital infrastructure (e.g., power, internet) limits AI tool usage in my locality.	30	39	80	52	201	2.18	1.00	Disagree
7	Fear of job loss among healthcare workers discourages AI adoption.	28	38	85	50	201	2.20	0.97	Disagree
8	There is sufficient government support or policy for AI health tool deployment in my community.	20	29	88	64	201	1.98	0.93	Disagree
9	Training healthcare workers on AI usage would increase community trust in the tools.	65	75	35	26	201	3.03	1.00	Agree
10	Ethical concerns like data privacy affect people’s willingness to use AI in healthcare.	62	70	36	33	201	2.89	1.05	Agree

Source: Researchers Field work, 2024

## FINDINGS ON COMMUNITY PERCEPTIONS TOWARD AI-BASED HEALTH TOOLS

The findings indicate generally low community acceptance of AI-based health tools, with mean scores below the decision benchmark for most perception items. Respondents expressed limited trust in AI-based healthcare tools (Mean = 2.05, S.D. = 0.92), suggesting overall disagreement accompanied by moderate variability in opinions across respondents. Similarly, poor understanding of how AI tools function in diagnosis or treatment was reported (Mean = 1.99, S.D. = 0.93), indicating a largely uniform lack of knowledge within the community. Perceptions regarding the receptiveness of the elderly to AI-based health tools were also negative (Mean = 2.03, S.D. = 1.01), with the relatively higher standard

deviation reflecting some divergence in views, possibly across age or exposure levels.

Cultural or religious beliefs were not perceived as a strong barrier to AI adoption (Mean = 2.23, S.D. = 1.00), though the dispersion suggests mixed perceptions among respondents. In contrast, optimism emerged regarding potential acceptance following adequate sensitization (Mean = 2.94, S.D. = 0.95). The comparatively lower standard deviation here indicates a fairly consistent belief that awareness and education campaigns could significantly improve acceptance of AI-based health solutions. These findings align with Ng, Cramer, Lee, and Moher (2024), who emphasize that trust and understanding are critical determinants of effective AI integration in low-resource settings. They also support Eze, Okeke, and Agunwamba (2021), who argue that community engagement and education are essential

for overcoming skepticism toward emerging health technologies.

## FINDINGS ON FACTORS INFLUENCING ADOPTION OR RESISTANCE

With respect to adoption factors, respondents did not strongly perceive infrastructural limitations (Mean = 2.18, S.D. = 1.00), fear of job loss among healthcare workers (Mean = 2.20, S.D. = 0.97), or government support (Mean = 1.98, S.D. = 0.93) as dominant barriers to AI adoption. The moderate standard deviation values across these items suggest some variability in experiences across communities, but overall disagreement with these factors as primary constraints. Infrastructure limitations were not perceived as a dominant barrier because of the limited exposure to functional AI-based health tools in Ankpa LGA shifts community concern toward issues of trust, awareness, and human interaction rather than technical or infrastructural readiness.

Conversely, strong consensus was observed on the importance of training healthcare workers to improve community trust (Mean = 3.03, S.D. = 1.00) and addressing ethical concerns such as data privacy (Mean = 2.89, S.D. = 1.05). These higher mean scores, coupled with relatively moderate dispersion, indicate broad agreement that human capacity-building and ethical safeguards are central to AI acceptance. Although these findings contrast with Ndukwe, Ajuwon, and Alabi (2020), who identified infrastructure and workforce gaps as major barriers, they are consistent with Dwivedi et al. (2021), who emphasize professional training and transparent data governance as critical policy priorities for successful AI implementation in healthcare.

## POLICY IMPLICATIONS AND RECOMMENDATIONS

The result of this study indicates the necessity to shift policy attention towards the inclusion of digital health policies in Ankpa Local Government Area with an emphasis on awareness-raising and education technology-related online training as the key factors in building human capacity. Local government agencies in Ankpa LGA should implement pilot AI-based health programs in selected primary healthcare centres through partnerships with technology providers, alongside targeted training for healthcare workers and community sensitization initiatives. Clear ethical guidelines, monitoring mechanisms, and public-private collaboration should support these pilots to build trust and guide evidence-based scale-up. As most people mistrust and lack knowledge about AI-based health tools, especially among the elder population and digitally marginalized people,

the health policymaker should organize specific public sensitization programs to demystify AI and emphasize its positive features directly in the local language and culturally sensitive forms. The fact that the group opinions were highly consistent regarding the training of healthcare workers implies that the focus on the roles of AI should be introduced into the training programs of medical and nursing schools, whereas the proper training programs of long-term professional development must be facilitated on the local governmental level. Moreover, the supposed absence of governmental assistance requires the health authorities in Kogi State to build an understandable, well-financed AI health plan, which takes care of ethical issues, grants data security, and develops digital infrastructure. Such policy responses will facilitate the development of community trust, sustainable adoption, and make the Ankpa LGA the example of the AI-enabled primary healthcare in Nigeria.

## CONCLUSION

It has been identified in this research that, although the functionality of AI-based health tools in improving overall provision of healthcare in Ankpa Local Government Area can be said to have substantial potential, effective application and community acceptance is currently limited due to lack of trust, digital illiteracy, and the sense of exclusion of the vulnerable including elderly. In spite of such challenges, the results indicate that broad acceptance and adoption is a high probability given sufficient community sensitization and training amongst healthcare workers. The fact that ethical issues, especially data privacy, have been put in the limelight also shows that unless AI solutions are done in the context of transparency, accountability, and local values, they cannot be sustainable. All in all, it is not just the adoption of current technological solutions that define the successes of AI-driven healthcare in Ankpa but the inclusive policies, human-friendly strategies, and the unending engagement of people in the community that helps expand the gaps between innovation and the people that have to embrace it.

## REFERENCES

- Bidgoli, H. (2023). Integrating information technology to healthcare and healthcare management: Improving quality, access, efficiency, equity, and healthy lives. *American Journal of Management*, 23(3), 1-10.
- Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., ... Williams, M. D. (2019). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging

- challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, Article 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Eze, A., Okeke, M. O., & Agunwamba, J. C. (2021). Infrastructure and healthcare transformation in Nigeria: Exploring the inadequacies and opportunities for AI adoption. *International Journal of Health Management and Information*, 6(1), 23-35.
- Ezeaka, B. N. (2024). Artificial Intelligence (AI) and health communication policy in Nigeria: Challenges and prospects. *Journal of Advanced Research and Multidisciplinary Studies*, 4(4), 141-149.
- Gayawan, E., Adebayo, S. B., & Waldmann, E. (2019). Modeling the spatial variability in the spread and correlation of childhood malnutrition in Nigeria. *Statistics in Medicine*, 38(10), 1869-1890. <https://doi.org/10.1002/sim.8085>
- Habib, O. I., & Idoko, O. (2025). Temporal analysis of vegetal cover in coal mining areas of Ankpa LGA, Kogi State, Nigeria. *International Journal of Research Publication and Reviews*, 6(6), 11294-11301.
- Habib, O. I., & Sherifat, M. D. (2023). Exploring the nexus between medical geography and COVID-19 control in Nigeria. *Journal of Arts, Social Sciences and Entrepreneurship Research*, 5(1), 1-12.
- Ndukwe, C. D., Ajuwon, A. J., & Alabi, O. (2020). Challenges and prospects of health communication in Nigeria: The role of information technology. *Journal of Communication in Healthcare*, 13(2), 65-72. <https://doi.org/10.1080/17538068.2020.1741769>
- Ng, J. Y., Cramer, H., Lee, M. S., & Moher, D. (2024). Traditional, complementary, and integrative medicine and artificial intelligence: Novel opportunities in healthcare. *Integrative Medicine Research*, 13(1), Article 101024. <https://doi.org/10.1016/j.imr.2023.101024>
- Rajpurkar, P., Chen, E., Banerjee, O., & Topol, E. J. (2022). AI in health and medicine. *Nature Medicine*, 28, 31-38. <https://doi.org/10.1038/s41591-021-01614-0>
- Sherifat, M. D., & Habib, O. I. (2023). Determinants of choice of delivery services among expectant mothers in Ankpa local government area of Kogi State, Nigeria. *International Journal of Research Publication and Reviews*, 4(5), 5928-5937.
- Ugar, E. T., & Malele, N. (2024). Designing AI for mental health diagnosis: Challenges from sub-Saharan African value-laden judgements on mental health disorders. *Journal of Medical Ethics*, 50(9), 592-595. <https://doi.org/10.1136/jme-2023-109762>
- Varnosfaderani, S. M., & Forouzanfar, M. (2024). The role of AI in hospitals and clinics: Transforming healthcare in the 21st century. *Bioengineering*, 11(4), 337. <https://doi.org/10.3390/bioengineering11040337>