

## Abstract

*Hutanho Kuvana* ("Nourishment for Children") is a science-driven initiative designed to combat childhood malnutrition in Zimbabwe through an all-in-one digital nutrition platform. Nutrient deficiency-related diseases such as stunted growth, weakened immunity, and delayed development are a leading cause of under-five mortality in the region. This project investigates how artificial intelligence, mobile health tools, and community education can be combined to improve nutritional awareness and dietary behavior among caregivers and children.

The platform integrates a multilingual AI chatbot that offers personalized nutrition advice, an interactive learning app for children with games and food demonstrations, and a data dashboard to monitor trends and guide community interventions. The prototype was tested using simulations and feedback from nutrition guides and local food databases to assess its accuracy, engagement, and accessibility in low-resource settings.

Results showed that the system provided accurate food recommendations based on local availability and age-specific needs. Users found the visual tools and gamified learning modules both educational and enjoyable. The project demonstrated that even in offline or low-infrastructure areas, a technology-driven solution can deliver impactful health education.

The findings support the hypothesis that a unified, intelligent platform can improve community nutrition knowledge and empower families to make healthier food choices. Future directions include pilot testing the platform in rural schools, integrating visual food recognition via image input, and partnering with local health agencies for broader impact.

*Hutanho Kuvana* highlights the power of science, technology, and culturally relevant design in addressing global health challenges.