The Adoption of Artificial Intelligence in Animal Health Communication in Zimbabwe

Jennings Joy Chibike
http://orcid.org/0000-0002-4899-2446
Lupane State University, Zimbabwe & Midlands State University, Zimbabwe

Alban Mugoti
http://orcid.org/0000-0003-0837-5272
Lupane State University, Zimbabwe

Justin Salani
http://orcid.org/0009-0006-5332-8650
National University of Science and Technology, Zimbabwe

ABSTRACT

While captains of industries and academics concur in celebrating artificial intelligence in the context of it helping improve productivity, there has been little to no use of artificial intelligence in climate change and animal health communication in Zimbabwe. Against this milieu, this study is poised at examining how artificial intelligence can be best used to communicate animal illnesses that are a result of climate change. For this qualitative study, empirical data were gathered through in-depth interviews with climate change specialists and animal scientists in Zimbabwe. The importance of this study lies in that it brings to the fore the applicability of artificial intelligence within the realms of communication, climate change, and animal science in a Zimbabwean set up against the background that prior studies have not explored the applicability of artificial intelligence in communicating animal diseases that are a result of climate change.

INTRODUCTION

Artificial intelligence (AI) refers to the mechanical and scientific improvements which allow for tasks which were in the past handled by humans to be done by machines and technology (Lima- Santos and Ceron, 2021:3). However, Ryan (2020) states that in some cases artificial intelligence is automated to perform restricted tasks thus rendering it not equal with human intelligence. Despite this, scholars concur

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that the emergence of artificial intelligence has led to an efficient, fast and thorough service provision which is better than that which is purely run by humans (Tasheva and Karpovich, 2024). While it is clear that artificial intelligence has improved various sectors such as education (Nguyen, 2023), engineering, agriculture, health and finance (Wu et al., 2025), Gunkel (2012) questions the centrality of artificial intelligence in the realm of communication. In response, Mkwebu and Chibike (2025) poignantly notes that artificial intelligence and computer aided language is instrumental in the social communication and identity fabrication process. Hannock et al (2020) spectacle the centrality, vitality and applicability of artificial intelligence in business communication. In the realm of science communication which is the focus of this study Schäfer (2022) posits that scientists have embraced artificial intelligence in communicating science. Kushahwa, Prasad and Kumar (2024) spectacle the centrality of using artificial intelligence in communicating agricultural biological science. Within the spectra of animal science scholars have focused on how to use artificial intelligence to improve outputs from cattle (Monteiro et al 2023). Absent from literature is how artificial intelligence can be harnessed to communicate climate change induced sicknesses of livestock to Zimbabwean farmers. Against this milieu, this study is poised at filling this glaring scholarly void through studying animal scientists and communicators' views on how artificial intelligence can be used to communicate illness among animals which are a result of climate change. In doing this the study answers the following questions:

- What is the state of AI use in animal health communication?
- What are the perceived benefits of using AI in animal health?
- What are the challenges hindering the effective adoption and use of AI in animal health?
- How can artificial intelligence be used to effectively communicate and help in the prevention of animal ill health caused by climate change in Zimbabwe?

The importance of this study lies in that it offers literature to the discourse of artificial intelligence, climate change and animal health in Zimbabwe something past scholarship has not done. By doing so the study extends the body of knowledge not only in artificial intelligence but also in the spectra of science communication. Though not going to offer an ultimate panacea and definite answer on how AI can be used to prevent animal diseases caused by climate change in Zimbabwe, this study is a stepping stone in the trajectory of animal disease prevention. This study will help cattle farmers to think about infusing AIin cattle breeding and rearing. This is against the background that there is urgent need of addressing climate change induced climate change related animal health illness in Zimbabwethreatening both food security and livelihoods.Harnessing artificial intelligence (AI) offers a transformative solution to improve communication and mitigate these impacts.

BACKGROUND OF THE STUDY: ANIMAL HEALTH ISSUES AND CLIMATE CHANGE IN ZIMBABWE

Climate change has emerged as one of the most pressing challenges to animal health and agricultural productivity in Zimbabwe. Changes in temperature, rainfall variability, and the increased frequency of extreme weather events such as droughts, floods, and heatwaves have disrupted the delicate balance between animals, pathogens, and their environment (Thornton et al 2009). The country has already witnessed shifts in ecological zones, with formerly humid regions experiencing pro-