

ASHESI UNIVERSITY

**SOAN 325: RESEARCH METHODS – COHORT B**

ASSIGNMENT 1

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# **INVESTIGATING HOW IoT TECHNOLOGIES CAN BE LEVERAGED TO IMPROVE POOR LIVING CONDITIONS IN RURAL ENVIRONMENTS IN GHANA.**

Rural communities in Ghana suffer from a lot of poor living conditions. The list could go on from inadequate access to water, lack of electricity, lack of basic amenities, and lack of food. In today's world, with the technologies and innovations that have been made, it can be surprising to some individuals that these problems still exist in some communities. Research (Overview | Reduce Rural Poverty | Food and Agriculture Organization of the United Nations, n.d.) shows that 80 percent of the world's poorest people live in rural areas. This situation brings the fact that the technologies and innovations that have been developed are not being appropriately implemented. Ghana's situation with respect to this problem is very upsetting. Research conducted by Boakye and Olumide (2023) states that the incidence of preventable diseases in rural parts of Ghana and Sierra Leone is highly unacceptable. Therefore, it can be seen that these poor living conditions only serve as a cause for these diseases that sprout all over rural areas in Ghana. This research is meant to investigate how IoT technologies can be implemented to improve the poor living conditions of rural communities in Ghana. The research seeks to access the various IoT solutions developed to explore if there are preferable resorts that can be leveraged to improve the living circumstances of people in rural communities in Ghana. This is a pure research paper.

## **Objectives**

1. Access the role of IoT technologies in developing rural environments.
2. Investigate possible IoT solutions to improve living conditions in rural areas.

**Primary Research Question:** How can IoT technologies be effectively leveraged to improve poor living conditions and promote sustainable development in rural environments?

### **○ Sub-questions:**

- What are the specific needs and challenges in rural communities that IoT technologies can address?
- What do you need for a sustainable plan to use IoT technologies in rural areas?

**Significance of the Study:** The living conditions of rural communities are poor due to certain factors. These factors do not allow these communities to fully benefit from technological innovations that have come up in recent times. This study aims to close the gap that exists between technological innovations and their adoption in rural areas. The significance of this research lies in its potential to improve the poor living conditions in rural communities and close the gap between rural and urban lives.

**Related Work:** In search of studies that closely relate to my topic, I came across a study by researchers Alex Boakye and Omilola Babatunde Olumide. They studied "the role of Internet of things to support health services in rural communities. A case study of Ghana and Sierra Leone." Their main aim was to provide appropriate mechanisms by which IoT technologies could be leveraged to mitigate health burdens in poor communities. They claim IoT technologies can potentially bridge the gap between rural and urban healthcare services. The research method involves an extensive literature review, surveys of healthcare providers in rural areas, and case studies of existing IoT implementations in healthcare. Looking at their method in this study, it is evident that it was a mixed methods approach that combined both qualitative and quantitative approaches to come to the conclusion that "Internet of Things technologies have the power to improve health outcomes for people located in rural and remote locations, particularly for those with mobility problems or who find travel difficult" Boakye and Babatunde Olumide (2020). While my research is similar to this study in the sense that both studies aim to improve conditions in rural communities, my study will focus on other aspects of living conditions other than healthcare in rural communities.

## References

- Boakye, A., & Babatunde Olumide, O. (2020). The Role of Internet of Things to Support Health Services in Rural communities. a Case Study of Ghana and Sierra Leone. *Transnational Corporations Review*, 13(1), 43–50. <https://doi.org/10.1080/19186444.2020.1849937>
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