

## Ropafadzo Chimuti

**Degree:** MSc Biostatistics, University of Cape Town

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**Title:** Monitoring fleet vehicle usage using GPS data.

### **Abstract:**

**Background:** The Clinton Health Access Initiative (CHAI) currently lacks detailed information on the specific types of trips made by the white fleet vehicles used by the Eastern Cape Department of Health (ECDoH) and whether these vehicles are being efficiently utilized at their designated sites. Without a clear understanding of these usage patterns, CHAI faces challenges when allocating resources, often resulting in potential inefficiencies such as unnecessary vehicle hirings and underutilized fleets.

**Aim:** To analyse white fleet vehicle usage through GPS data to identify patterns of effective and ineffective utilization at each site or site group.

**Methods:** By analysing a year's worth of white fleet vehicle trip data, from January 2023 to December 2023, metrics such as trip counts, inactive days, and locations visited will serve as key indicators to evaluate vehicle usage. Data analysis techniques, including exploratory data analysis (EDA), clustering, and statistical analysis, will be employed to derive meaningful insights on the vehicle usage patterns. The findings will inform vehicle allocation strategies and contribute to improving fleet operations.