READ ME File for “2021\_Household\_Inteview\_Survey\_4\_Rural\_Villages.csv”

Dataset DOI https://doi.org/10.5258/SOTON/D3415

Date that the file was created: 11/03/2025

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GENERAL INFORMATION

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ReadMe Author: PAB James, University of Southampton [https://orcid.org/0000-0002-2694-7054]

Date of data collection: 30/07/2021-22/08/2021

Information about geographic location of data collection:

Related projects:

ADD IN

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SHARING/ACCESS INFORMATION

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Licenses/restrictions placed on the data, or limitations of reuse: CC BY

Recommended citation for the data:

Analysis and further details of this dataset can be found in paper in:

Mohammed, A.; James, P.; Bahaj, A. Electricity Access Linkages to Sustainable Development Goals in Rural Sudan. Sustainability 2025, 17, 2441. <https://doi.org/10.3390/su17062441>

This dataset supports the publication:

AUTHORS: Mohammed, A.; James, P.; Bahaj, A.

TITLE: Electricity Access Linkages to Sustainable Development Goals in Rural Sudan

JOURNAL: Sustainability

PAPER DOI IF KNOWN: doi.org/10.3390/su17062441

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DATA & FILE OVERVIEW

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This dataset contains two files, (1) the survey instrument and (2) the survey responses.

1. 2021\_Household\_Interview\_Survey\_4\_Rural\_Villages\_variable\_list.docx, The household interview survey
2. 2021\_Household\_Inteview\_Survey\_4\_Rural\_Villages.csv, the survey dataset

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METHODOLOGICAL INFORMATION

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Description of methods used for collection/generation of data: In choosing the sites for data collection, the consensus-based Nominal Group Technique was applied through the participation of five experienced energy specialists in Sudan. The sites were chosen from a suitability map that was designed using ArcGIS (ArcGIS 10.8.1) and considered eight specific criteria, which were equally weighted including the following: distance to the national grid, population, accessibility, political stability, natural hazards, service sector, willingness to pay, and security. The authors aimed to select villages based on similar criteria, such as proximity to the national grid and a population size of 500, amongst other criteria. However, they also prioritized diversity to ensure the sample was representative of the country as a whole. Experts selected villages with varying economic activities—those relying on different sources of income and located in different states—to capture a broader and more diverse population.

The sample selection was carried out randomly but with guidance from the village Diwan members (group of village masters). In each village, a local guide assisted in identifying households that would be open to participating in the survey. This approach was necessary due to cultural and social factors that influenced community responses. In rural Sudan, there is a general distrust of outsiders, especially those conducting surveys.

The sample size was 60 participants from different households in each village, and an age group of 18–79. The data were collected using the Fulcrum app (Fulcrum 2.40.0), which is an application that allows field data to be entered and stored with precise geographic coordinates in a cloud-based platform.

The average household across the four villages had six members; therefore, each village has around 84 households. For a confidence level of 95% and a margin of error of 7%, we would therefore need a sample size of 59 households. We collected n = 60 surveys from each village between 30 July 2021 and 22 August 2021.

Software- or Instrument-specific information needed to interpret the data, including software and hardware version numbers: We conducted a multiple logistic regression analysis to evaluate the influence of five factors from the survey on the likelihood of children attending school using Sigmaplot (Sigmaplot 16.0.0.28)

People involved with sample collection, processing, analysis and/or submission: Data collection was led by A. Mohammed. Data processing for this archive was by P.A.B. James.

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DATA-SPECIFIC INFORMATION 2021\_Household\_Inteview\_Survey\_4\_Rural\_Villages.csv

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Number of variables:22

Number of cases/rows: 240 + header

Column 1: Settlement Name, Categorical (4): Taebeen, Al Hashieb 2, Wiheishat, Helbeh extension

Column 2: Number of household members, Integer

Column 3: Number of children in household, Integer

Column 4: Number of boys in household who attend school, Integer

Column 5: Number of boys in household who so not attend school, Integer

Column 6: Number of girls in household who attend school, Integer

Column 7: Number of girls in household who so not attend school, Integer

Column 8: Head of household education level, Categorical (6): Prefer not to say, No qualifications, Primary, Khalawi, Secondary, Higher Education

Column 9: Household monthly income (SDG), Integer

Column 10: Distance to health clinic (km), Number

Column 11: From where did you learn about the importance of water purification?

Categorical (5): no data, From TV news, word of mouth, School, From Radio

Column 12: Is heating of water necessary?, Binary variable (2): yes, no

Column 13: Why is heating of water necessary for you? Response only IF YES to Column 12,

Free text response (2): No data, To clean it from contaminants

Column 14: Do you heat water before drinking / cooking?, Binary variable (2): yes, no

Column 15: What is your view of the health impact of biomass use for cooking?, Free text response (3), I don’t know, Polluting, Clean

Column 16: In the case of a health emergency what do you do? Free text response (4): We walk to clinic, Traditional medicine, We wait for a vehicle, We walk to Tibaib

Column 17: Animal grazing, how many hours per day does your household undertake this?, Integer

Column 18: Biomass collection for cooking, how many hours per day does your household undertake this?, Integer

Column 19: Fetching of water, how many minutes per day does your household undertake this?, Integer

Column 20: How far do your children travel to school?, Real

Column 21: Are energy sources reliable?, Binary variable (2): yes, no

Column 22: What would you use electricity for if it was available?, Free text response