

EEP AFRICA IMPACT AND PERFORMANCE EVALUATION END-USER RESEARCH ABSOLUTE ENERGY

Presented to the Nordic Development Fund



- 1. Context and objectives**
2. Sample overview
3. Using the Absolute Energy mini grid
4. Impact

The objective of this presentation is to detail the results of the Absolute Energy end-user research in Uganda

Context

- The acquisition of the Energy and Environment Partnership Africa Trust Fund by the Nordic Development Fund in 2018 has **transformed it into an open-ended, multi-donor trust fund**
- NDF has mandated Altai Consulting to conduct the **first impact and performance evaluation of EEP Africa since the NDF acquisition and change of structure**

Evaluation approach and data collection

- To conduct the evaluation Altai has leveraged **three types of data**: desk review, stakeholders Key Informant Interviews (KIIs), end-user research
- **Three end-user studies of EEP-funded projects** have been performed



Countries

Uganda



Zambia



Zimbabwe



Services



Objectives

- The objective of the end-user studies is to provide an independent assessment of the impact of selected grantees
- The results will serve to confirm the underlying assumptions in EEP Africa’s Theory of Change and provide tangible examples and data for the final evaluation report
- Additionally, the results will be shared with Absolute Energy

297 quantitative customer interviews and 6 qualitative business operators interviews have been conducted on Kitobo island

Absolute Energy

- Absolute Energy provides affordable clean energy to Kitobo island's inhabitants. The company has developed a mini grid set for domestic and business purposes on the island



- Absolute Energy has developed several businesses on the island, which are connected to the mini grid

Sample size

- The 297 participants were randomly selected on Kitobo island

Data collection tools

- The questionnaires were written by Altai
- Enumerators used tablets (CAPI) for the quantitative interviews
- The questionnaires were administrated face-to-face

Fieldwork

- The data collection was conducted between July 26th and July 30th by enumerators of Sagaci Research, Altai's long-term field partner in Africa
- Before the data collection, enumerators received a training on the questionnaire

1. Context and objectives
- 2. Sample overview**
3. Using the Absolute Energy mini grid
4. Impact

The average interviewee is a 31-year-old woman

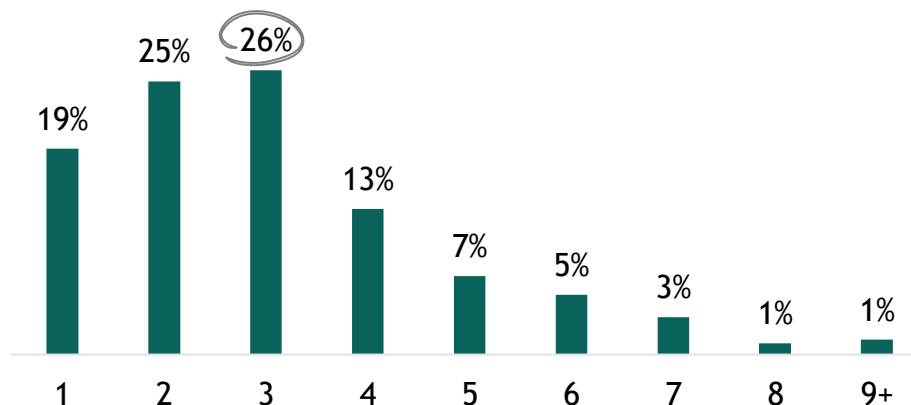
Gender of customer

N=297



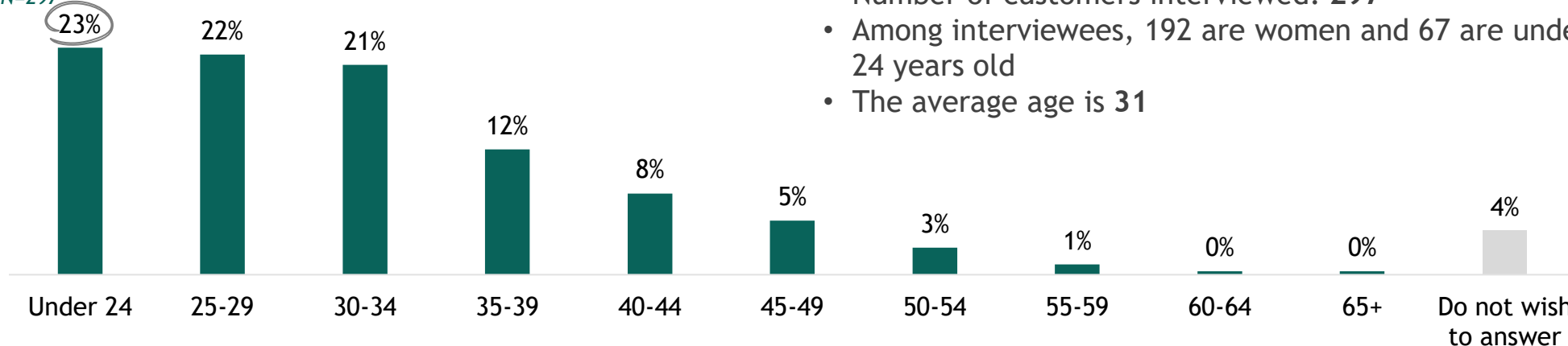
Number of household members

N=297



Age of customer

N=297



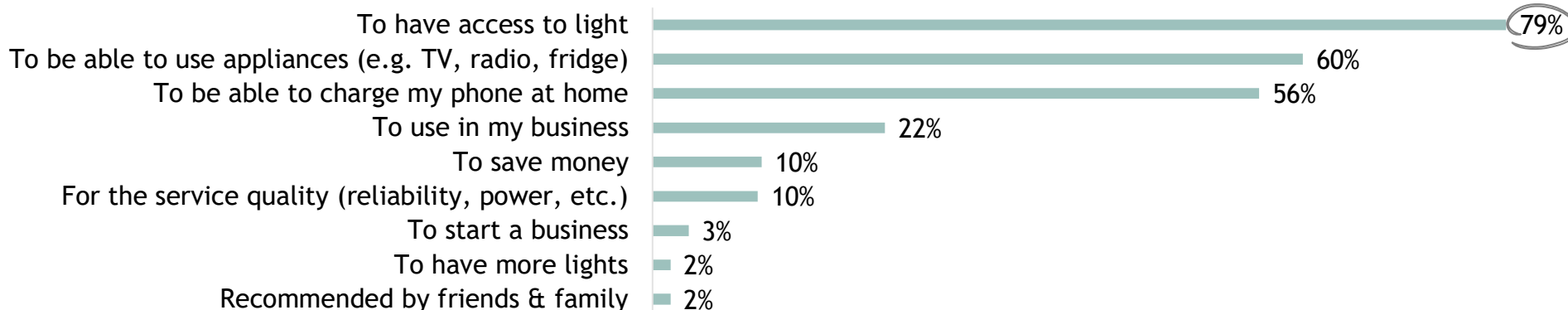
- Number of customers interviewed: **297**
- Among interviewees, 192 are women and 67 are under 24 years old
- The average age is **31**

Sources: Questions used: "4. How old are you?", "5. Gender", "6. How many people are there in your household?"

Access to light, phone charging and appliances are the main reasons to connect to the mini-grid

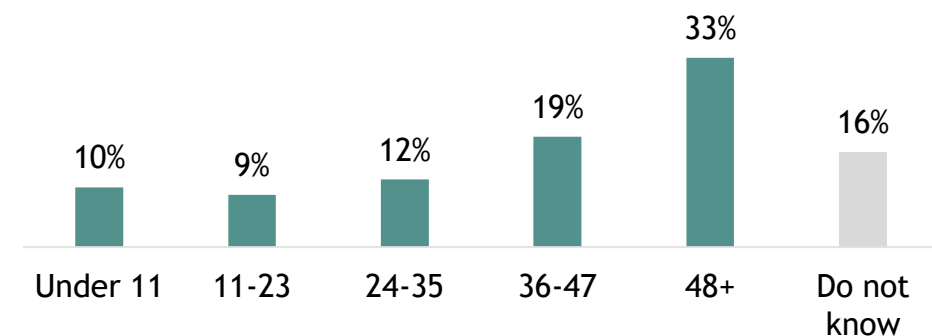
Reasons to be connected to the mini grid (share of households who mention the reason)

N=297



Months since start of connection

N=297



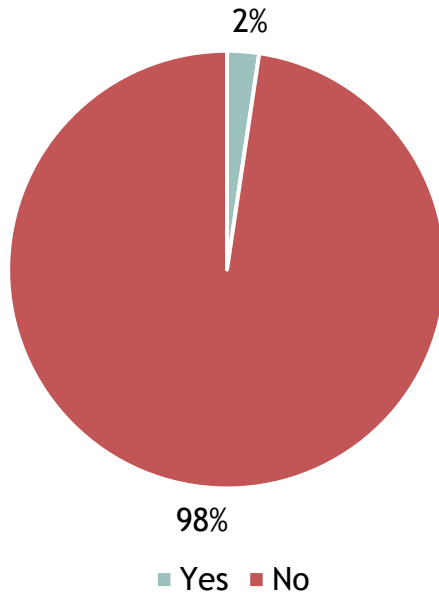
- The most frequently mentioned incentive is access to light (79%)
- 60% of the households interviewed also wanted to be able to use appliances in their home
- The third most frequently mentioned argument is to be able to charge the phone at home (56%)
- Most of the households interviewed have been connected to the mini grid for more than 3 years (52%)

Sources: Questions used: “7. Why did you decide to connect your household to the mini grid?”, “12. How long has your household been connected to the mini grid (in months)?”

8 of the individuals interviewed work in Absolute businesses

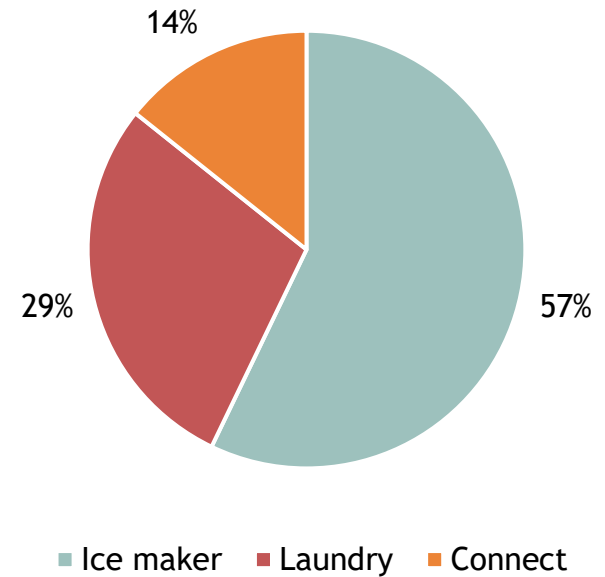
Households where an individual is working in an Absolute business

N=297



Absolute businesses

N(households where an individual is working in an Absolute business)=7



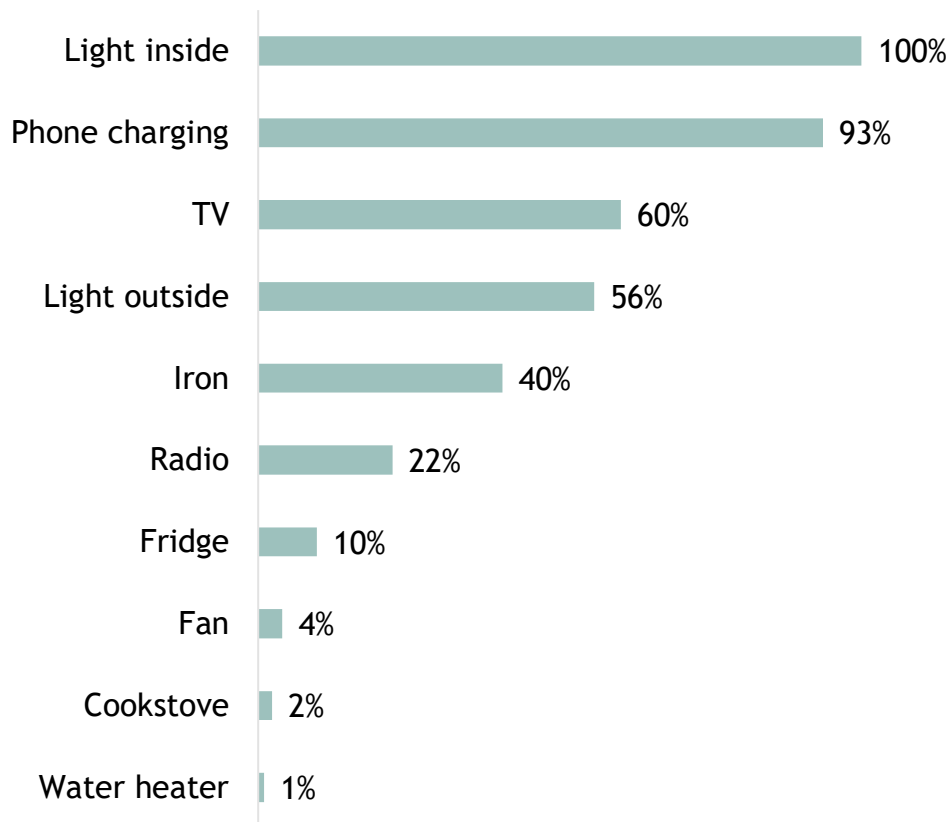
Sources: Questions used: “8. Is anyone in your household employed by one of the Absolute businesses?”, “9. How many household members are employed by one of the Absolute businesses?”, “10. Which ones?”

1. Context and objectives
2. Sample overview
- 3. Using the Absolute Energy mini grid**
4. Impact

The households interviewed all use the grid for lighting. Many of them also use it for phone charging or TV

Use of electricity

N=297



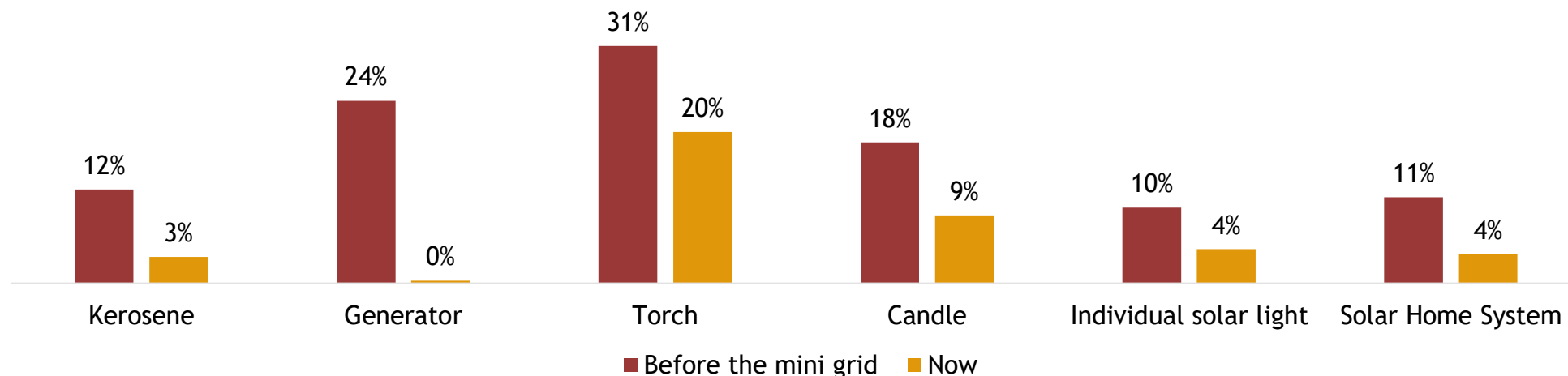
- All of the households interviewed use the electricity for **lighting inside**
- The **second most frequent usage** of grid electricity is for **phone charging (93%)**
- The third is for TV (**60%**)

Sources: Questions used: "13. What do you use electricity for?"

Use of rudimentary and/or health-endangering sources of light has declined with the transition to the mini grid

Evolution of sources of light (share of households mentioning the source)

N(households using the mini grid for lighting)=297

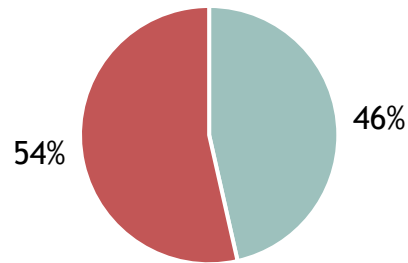


- Before the mini grid, the **three main sources of light** were **torches (31%)**, **generators (24%)** and **candles (18%)**
- The generator mentioned by the interviewees was a **community generator**. It had been installed by a local entrepreneur who used to sell the electricity generated to some inhabitants. It has been **removed** when the mini grid started
- **6%** of the households interviewed had **no source of light** before the mini grid
- **All sources of light** have declined with the transition to the mini grid
- Except from the generator, the source of light which has experienced **the greatest decline in usage** with the transition to the mini grid is **kerosene (-75% of overall use)**

Sources: Questions used: “15. What did you use to light your home/facilities before the mini grid?”, “16. Which of these light sources do you still use now that you are connected to the mini grid?”

The households interviewed are now mainly using the mini grid for lighting

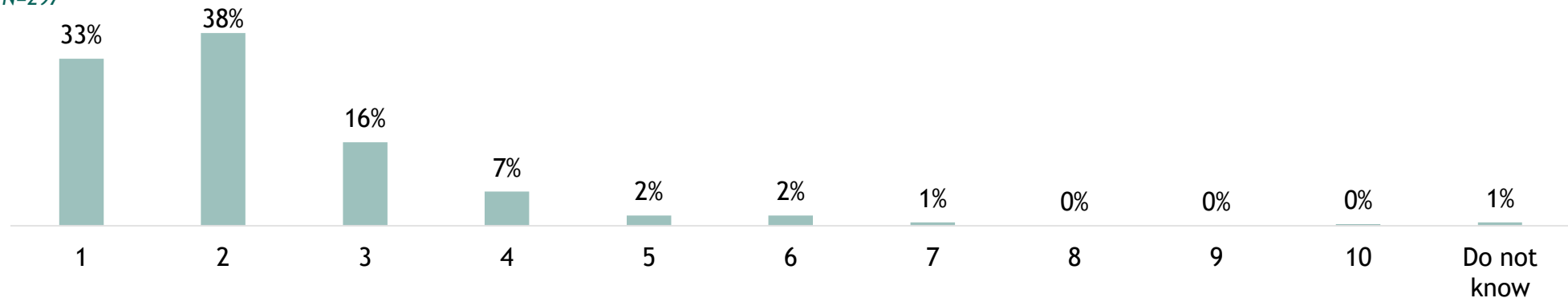
Households using other sources of light in addition to the mini grid
N=297



- 54% of the households interviewed are now **only using the mini grid for lighting**
- The households interviewed have an **average of 2 lights connected**

■ Using other sources of light ■ Only using the mini grid

Number of lights connected to the mini grid
N=297

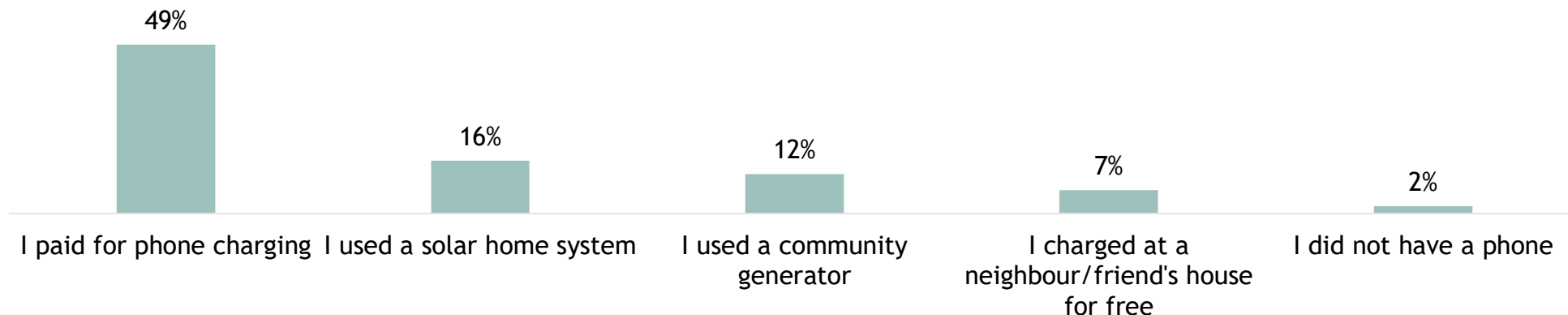


Sources: Questions used: “14. How many lights connected to the mini grid do you have?”, “16. Which of these light sources do you still use now that you are connected to the mini grid?”

Most of the interviewees used to pay for phone charging before the mini grid. The mini grid enables them to use their phone more

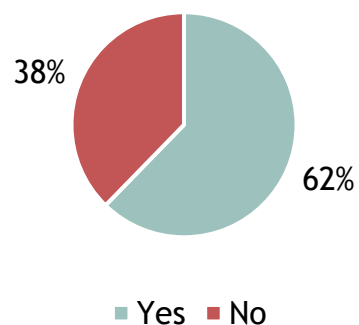
Past sources of energy used for phone charging

N(households using the mini grid for phone charging)=277



Households using their phone more now that they are connected to the mini grid

N=297



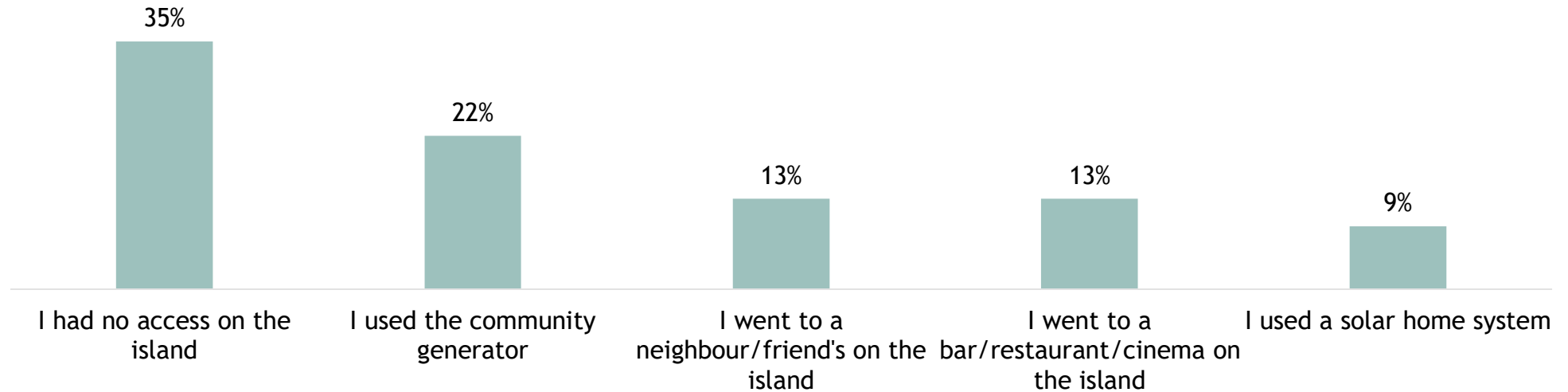
- **49%** of the interviewees used to **pay for phone charging before the mini grid**
- **62%** of the interviewees **use their phone more now that they are connected to the mini grid**

Sources: Questions used: “17. What did you do to charge your phone before the mini grid?”, “22. Since you are connected to the mini grid, do you use your phone more?”

The mini grid has facilitated access to television

Past sources of energy used for TV

N(households using the mini grid for TV)=178



- **35%** of the interviewees now using the mini grid for plugging TV **did not watch TV before the mini grid**
- **22%** of the interviewees used the **community generator**

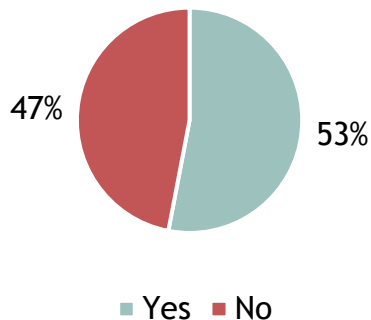
Sources: Questions used: "19. What did you do to watch TV and/or listen to the radio before the mini grid?"

1. Context and objectives
2. Sample overview
3. Using the Absolute Energy mini grid
4. **Impact**

The Absolute Energy Ice Machine seems to have a positive impact on the livelihood of the fishermen

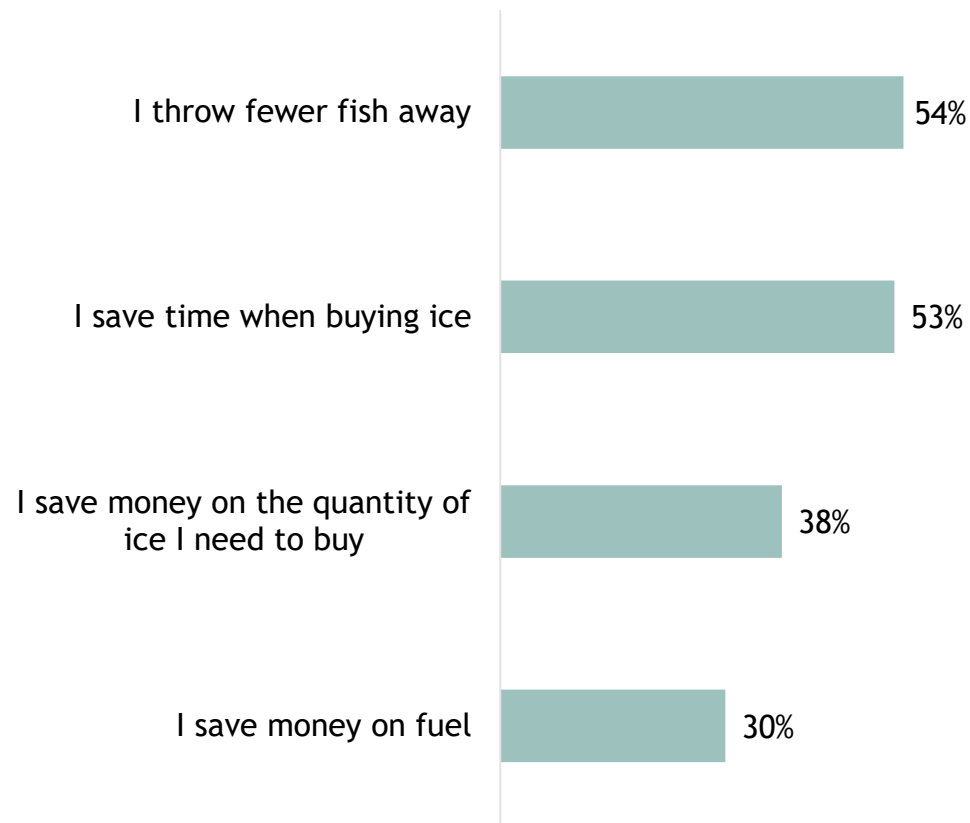
Perceived increase in income from access to ice

N(fishermen)=149



Reasons for income increase

N(fishermen perceiving an increase in income)=79



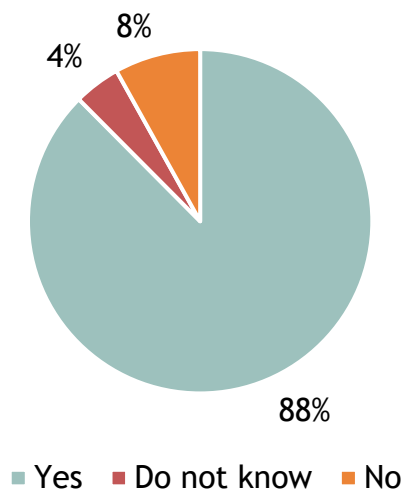
- **53%** of the fishermen perceived an **increase in income** from their business now that they have **access to ice** on the island thanks to the **Absolute Energy Ice Machine**
- The **two main reasons** mentioned are that they **throw fewer fish away (54%)** and that they **save time when buying ice (53%)**

Sources: Questions used: “23. Has access to ice on the island improved your income from fishing?”, “24. How has your business improved?”

Interviewees are overwhelmingly positive about the impact that the mini grid has had on their quality of life

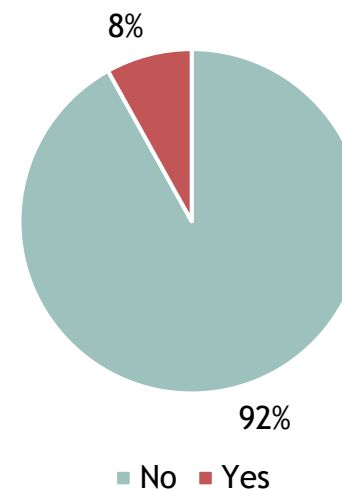
Perceived improvement in quality of life

N=297



Households reporting negative effects

N=297



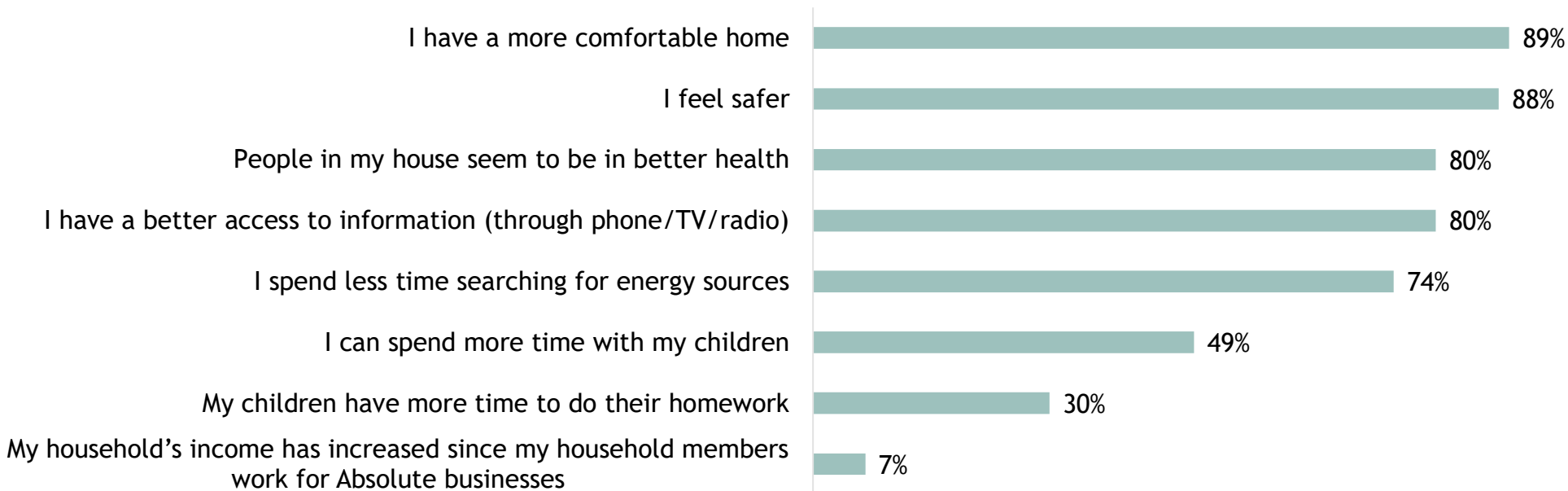
- **88%** of the households interviewed perceive an overall improvement in their quality of life thanks to the mini grid
- Only **8%** of the households interviewed disagree with the fact that the mini grid has improved their quality of life

Sources: Questions used: "30. For each of the following statements, please tell me if you "Strongly agree", "Somewhat agree", "Neither agree nor disagree", "Somewhat disagree", "Strongly disagree", "Do not know""

The mini grid has had various positive impacts on the quality of life of people on the island

Improvements in quality of life

N=297



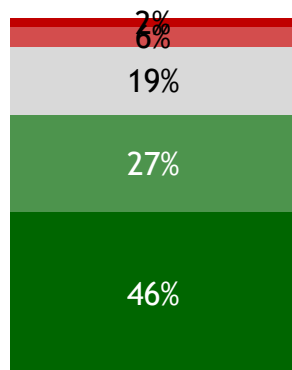
- The **main improvement** perceived by the households interviewed is that they have a **more comfortable home** thanks to the mini grid (**89%**)
- **88%** of the households interviewed **feel safer now** (light provides a sense of security)
- **80%** of the households interviewed notice that their family seems in **better health** thanks to the mini grid and **80%** have **better access to information**

Sources: Questions used: “30. For each of the following statements, please tell me if you “Strongly agree”, “Somewhat agree”, “Neither agree nor disagree”, “Somewhat disagree”, “Strongly disagree”, “Do not know””

The households interviewed are mostly very satisfied with the mini grid and are likely to recommend it to friends or relatives

Perceived value for money

N=297

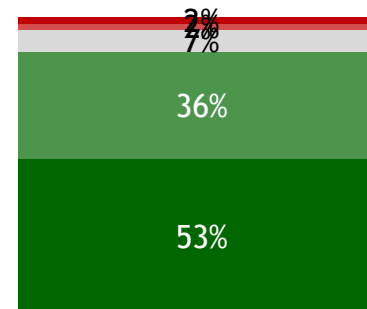


Total

Very good Good Fair Poor Very poor

Likelihood that the user will recommend the product

N=297



Total

Very likely Likely
Neither likely nor unlikely Unlikely
Very unlikely

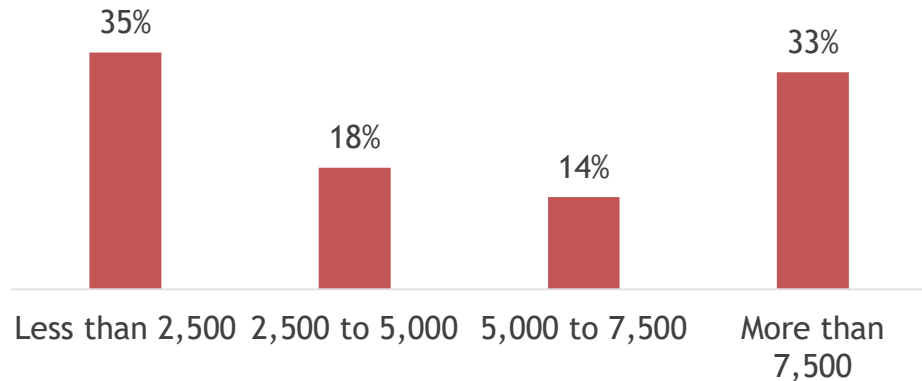
- 73% of the households interviewed are satisfied with the value for money of the mini grid
- 89% of the households interviewed would recommend the mini grid to a friend or a relative
- Results are likely to be negatively affected by current issues with the mini-grid which have not been fixed due to the Covid-19 situation

Sources: Questions used: “31. How do you rate the value for money of the mini grid?”, “32. How likely are you to recommend the mini grid to a friend or a relative?”

The mini grid has enabled many of the households interviewed to save money on energy expenditures

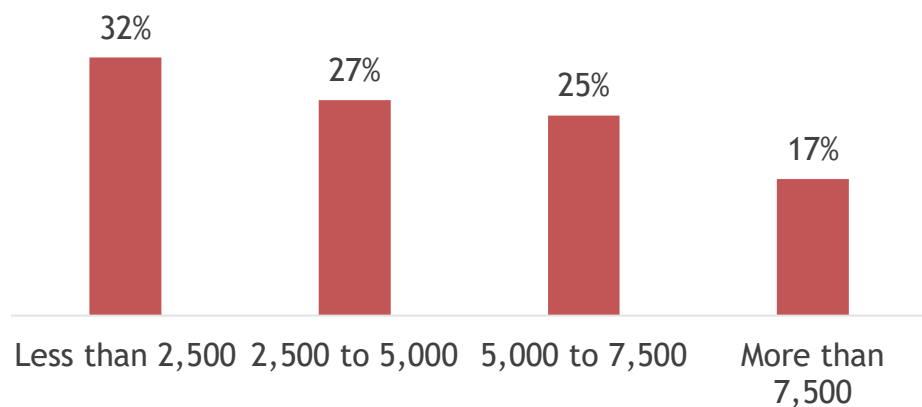
Expenses on all sources of energy per week before the mini grid (in UGX)

N=203 - excl. Do not know & Do not wish to answer



Expenses on all sources of energy per week now (in UGX)

N=267 - excl. Do not know & Do not wish to answer



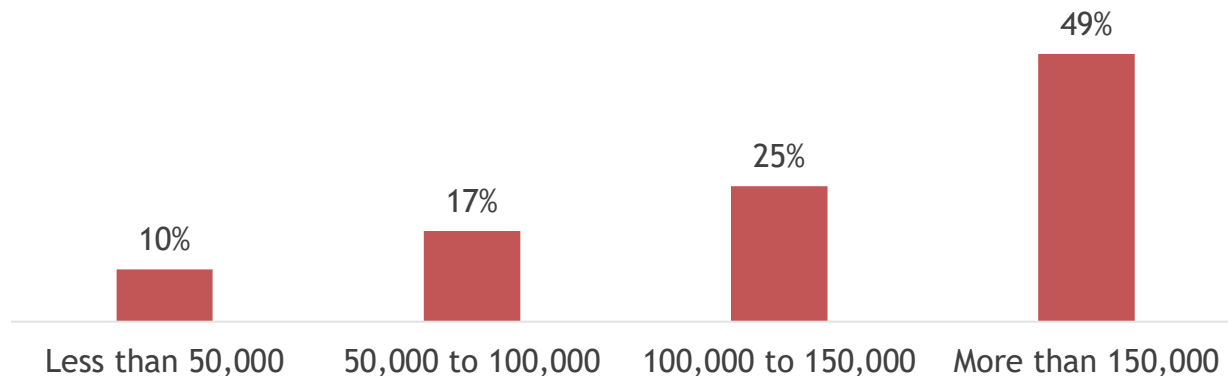
- Of the 187 households interviewed who know their expenses before the mini grid and now, **53%** spent less than UGX 5,000 (~USD\$1.4) before the mini grid compared to **59%** now
- Of the 187 households interviewed who know their expenses before the mini grid and now, **57%** have **saved money** thanks to the transition to the mini grid. The average savings are of **UGX 11,700 per household per week** (~USD\$3.2)

Sources: Questions used: “26. How much, on average, did you spend on all energy sources per week before being connected to the mini grid?”, “27. How much, on average, do you currently spend on all energy sources per week?”

None of the households interviewed report spending more than what they earn

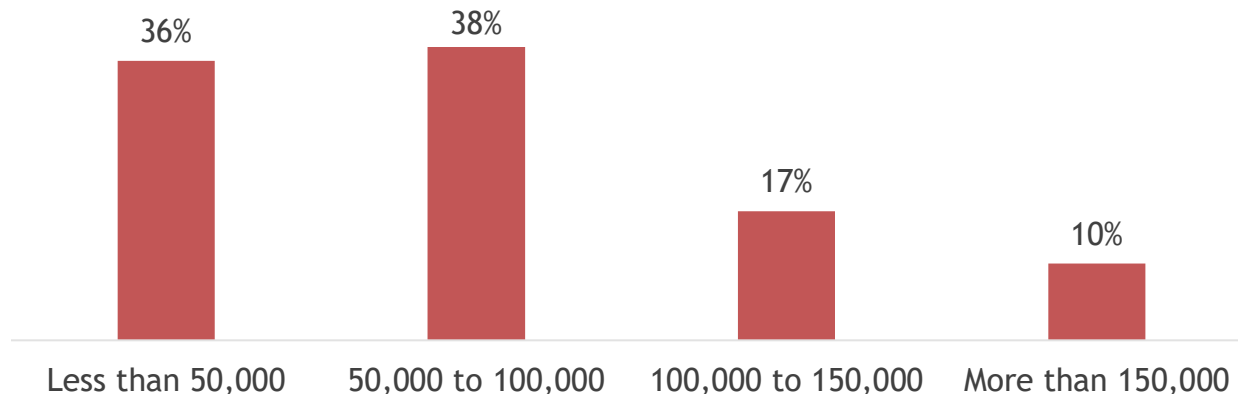
Income per week (in UGX)

N=157 - excl. Do not know & Do not wish to answer



Expenditures per week (in UGX)

N=223 - excl. Do not know & Do not wish to answer



Average weekly GDP per household in Uganda (average HH size 4.5):

~179\$

Average weekly income per interviewed household:

UGX 255,815 (~USD\$69)

Average weekly expenditures per interviewed household:

UGX 78,127 (~USD\$21)

Sources: Questions used: “28. How much income does your household bring in in a typical week (in UGX)?”, “29. How much income does your household spend in a typical week (in UGX)?”; GDP per capita: World Bank 2017 (constant 2017 international US\$); average size of household: Uganda 2016 Demographic and Health Survey