Insights from the Baseline Assessment of the Light Library Programme

Solar United
Madagascar

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Highlights

⚖️ While **38%** of participants are current Light Library customers, **78% have expressed interest.** There is potential **for growth if barriers are addressed.**

🚧 We have identified the following barriers to uptake:

- **Lack of Awareness** of the programme
- **Affordability**
- **Ability** to use electronic devices
- **Reticence** to try new sources of energy
- **Levels of education**

📣 Targeted awareness campaigns and education on the benefits of solar lamps may improve uptake.

🔄 **Over 50% of current customers still use other sources of energy**, although frequency of use and levels of spending vary from region to region

✅ Current users report **more positive perceived impact** on health, security, risk of accident, and livelihood than non-users.

Context

- Study was conducted with a representative sample (~10-20%) of students, parents and teachers from all Phase 2 schools.
- **Aim:**
  - Collect demographic, energy access and usage, socio-economic, and educational impact data
  - Verify our theory of change
  - Understand differences between customers and non-customers and possible barriers to uptake
  - Impact evaluation (in comparison with an end-line)
- **Timeline:**
  - Mid-March to end of June, 2023-2024 school year.
  - LL already installed in all of the schools.
- Although the sample from SEED is too small for significant conclusions, this will change with upcoming data from three new schools.
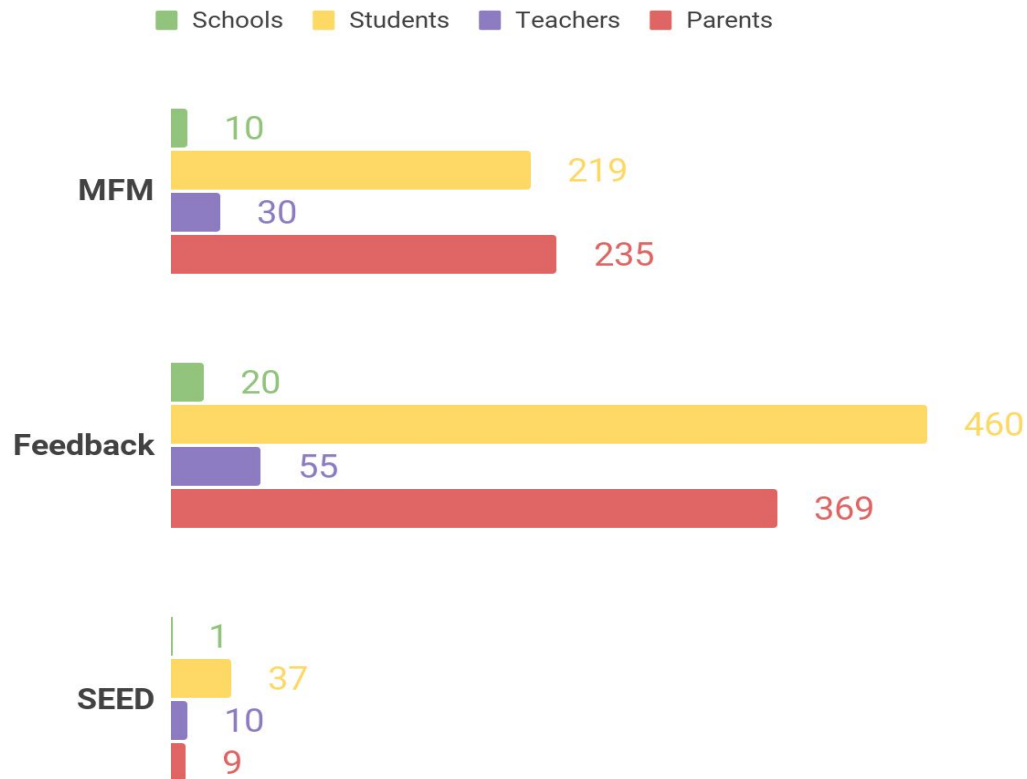
Baseline Survey Sample

31 schools

716 students

95 teachers

installations
September 2023 - February 2024

613 parents

Legend: Schools · Students · Teachers · Parents

MFM
- Schools: 10
- Students: 219
- Teachers: 30
- Parents: 235

Feedback
- Schools: 20
- Students: 460
- Teachers: 55
- Parents: 369
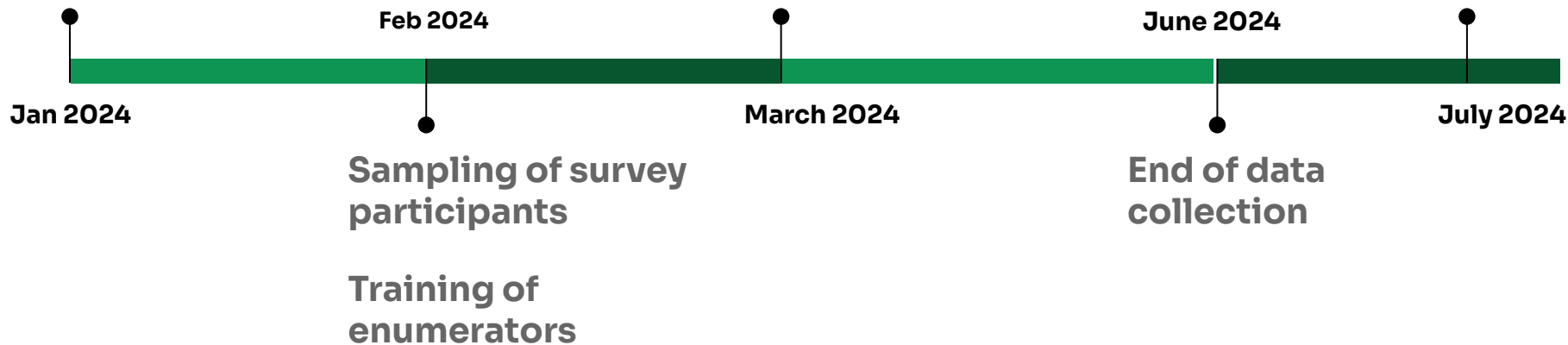
SEED
- Schools: 1
- Students: 37
- Teachers: 10
- Parents: 9

Baseline Survey Timeline

Survey development and translation

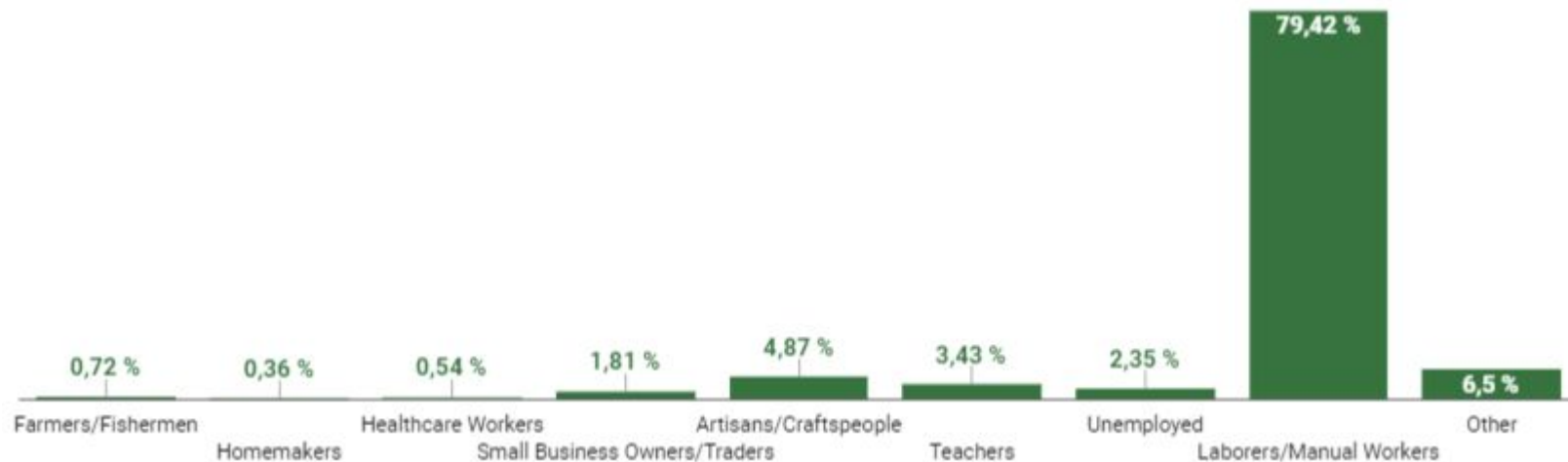**Beginning of data collection**

Data analysis and reporting

Feb 2024

Jan 2024

Sampling of survey participants

Training of enumerators

March 2024

June 2024

End of data collection

July 2024

Descriptive Analysis

Demographic

Main activities

Category	Percentage
Farmers/Fishermen	0,72 %
Homemakers	0,36 %
Healthcare Workers	0,54 %
Small Business Owners/Traders	1,81 %
Artisans/Craftspeople	4,87 %
Teachers	3,43 %
Unemployed	2,35 %
Laborers/Manual Workers	79,42 %
Other	6,5 %

Energy Use

Share of Current Energy Sources

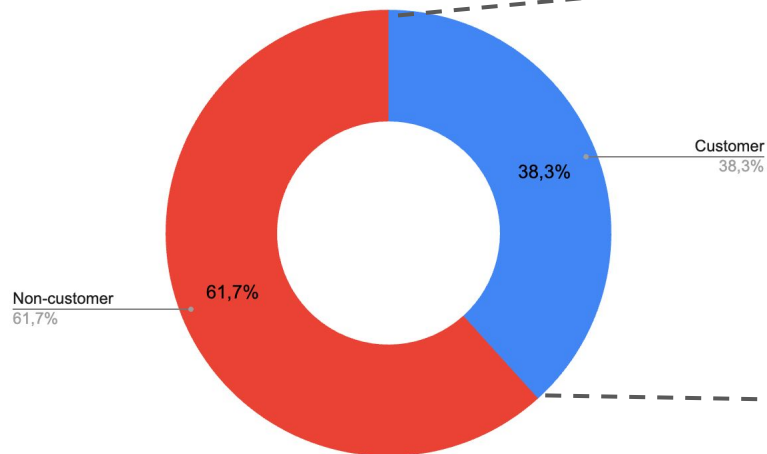Legend: Kerosene Lamps | Jiro Ve | Flashlights | Other solar lamps | Electricity (Jirama) | Batteries | Candles | Other | Firewood

Values: 295 | 215 | 109 | 93 | 44 | 23 | 11 | 3 | 3
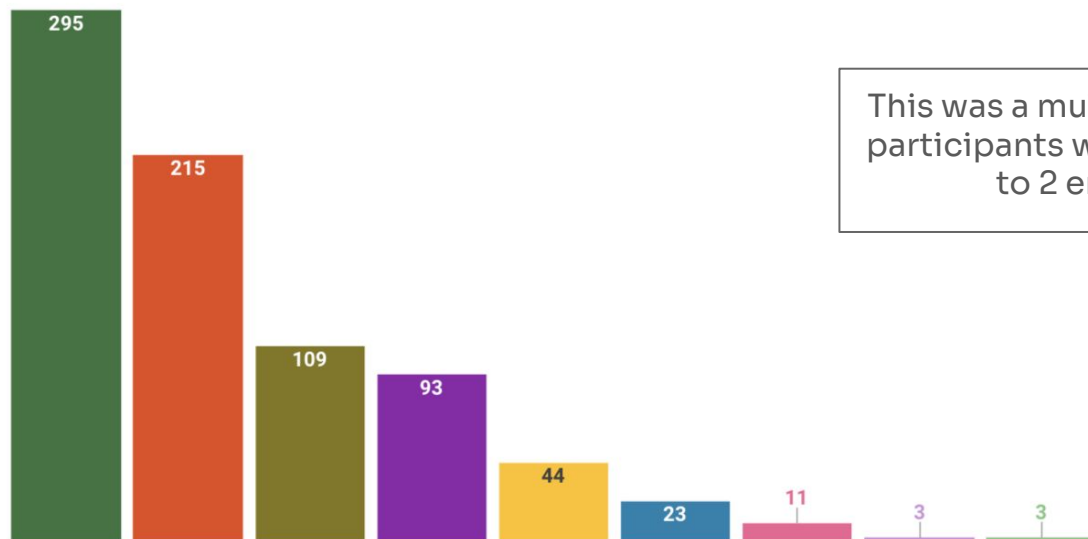
> This was a multiple choice question, participants were asked to select up to 2 energy sources.

Descriptive Analysis

Energy Use

Customer share

LL customers use of additional energy sources

Customer
38,3%

Non-customer
61,7%

38,3%

61,7%

Kerosene lamps
33,0%

Nothing
50,0%

50,0%

33,0%
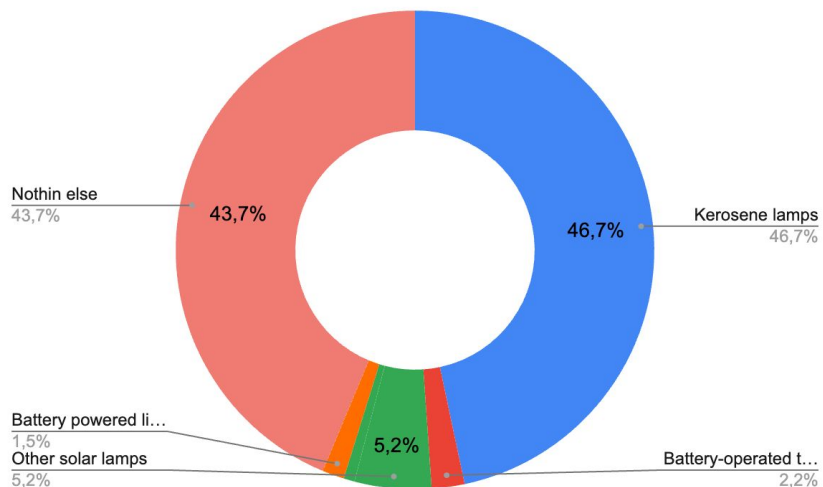
8,3%

Torches/flashlights
4,4%

Other solar lamps
8,3%

Electricity
1,5%
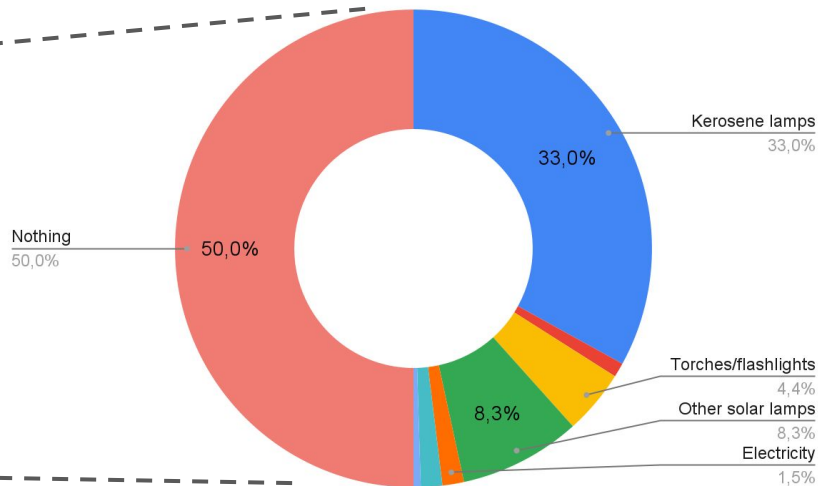
50% of current LL customers still use other sources of energy

Share of Additional Energy Sources per NGO

FBM LL Customers

Nothin else
43,7%

43,7%

46,7%

Kerosene lamps
46,7%

5,2%

Battery powered li...
1,5%
Other solar lamps
5,2%

Battery-operated t...
2,2%

Over **45%** of customers are still using
kerosene alongside JiroVe lamps

MfM LL Customers

6,2%

Kerosene lamps
6,2%

Candles
3,1%

Torches/flashlights
7,7%

7,7%

13,8%

Other solar lamps
13,8%

Electricity
3,1%

Batteries
1,5%

Other
1,5%

Nothing else
63,1%

63,1%
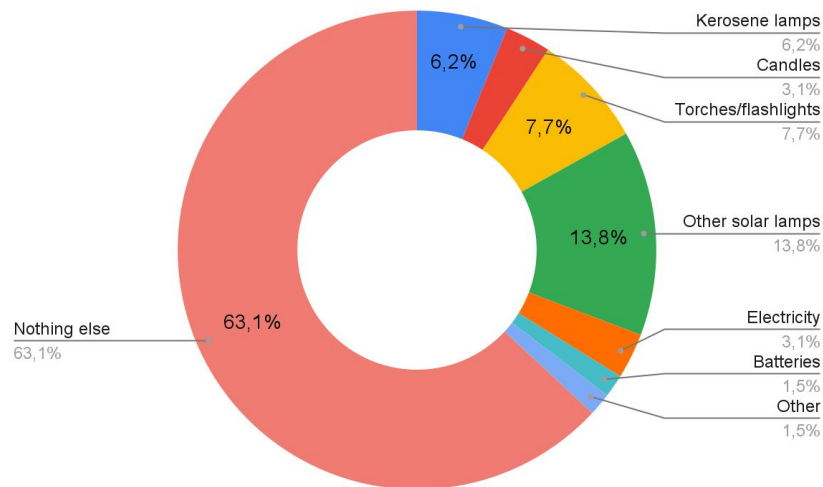
6% and 3% of customers are using
kerosene and candles respectively
alongside JiroVe lamps

Descriptive Analysis

Energy Use

Usage frequency of traditional lighting

FBM

- Almost every day. — 82% / 89%
- Several times a week. — 13% / 10%
- Once or twice a week. — 4% / 2%
- Once or twice a month. — 1% / 0%

MfM

- Almost every day. — 81% / 17%
- Several times a week. — 13% / 67%
- Once or twice a week. — 3% / 0%
- Once or twice a month. — 3% / 0%
- Rarely or Never — 0% / 17%
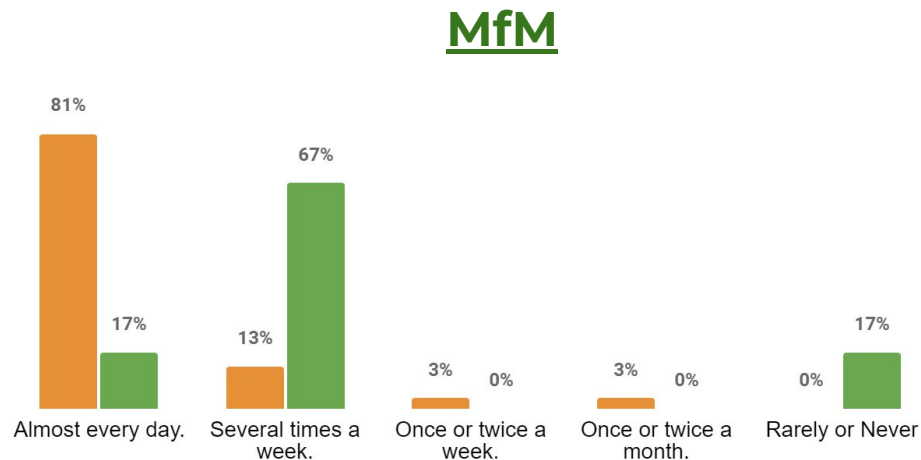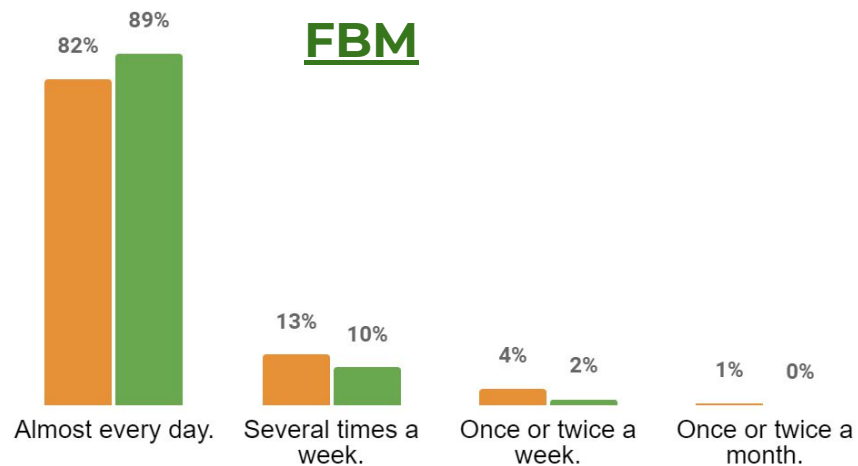
For Feedback sites, there is no significant difference in usage frequency between customers and non-customers whereas for MfM there is a significant difference.
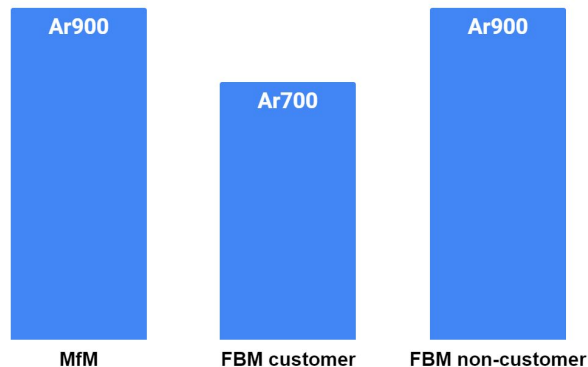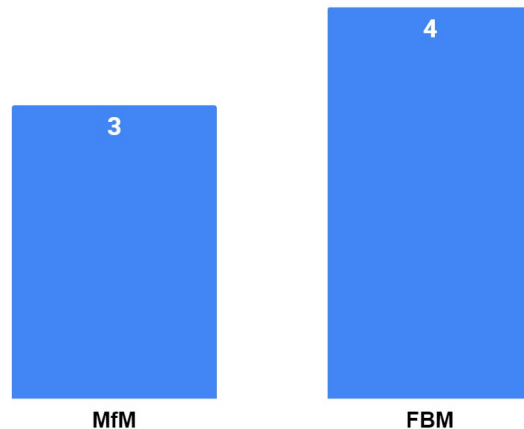
Customers   Non-customers

Weekly Cost of Traditional Lighting

Average Number of Rooms

For Feedback sites, there is no significant difference in usage frequency of traditional lighting between customers and non-customers **BUT customers are spending less than non–customers.**This difference in spending is not observed for MfM sites.
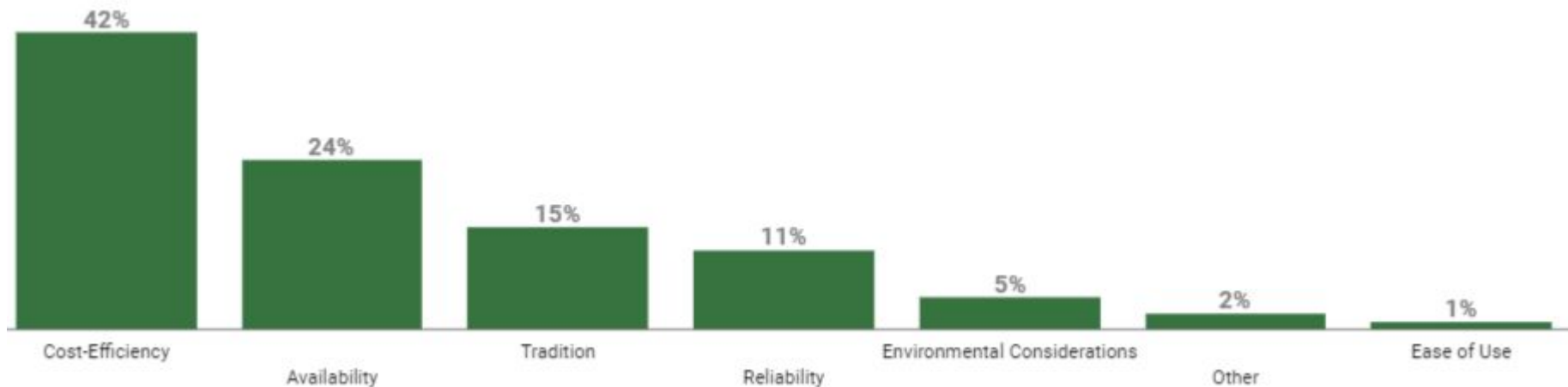
The difference in average number of rooms is small but statistically significant between MfM and FBM sites, which could partially explain why more FBM customers still use kerosene in addition to solar lamps.

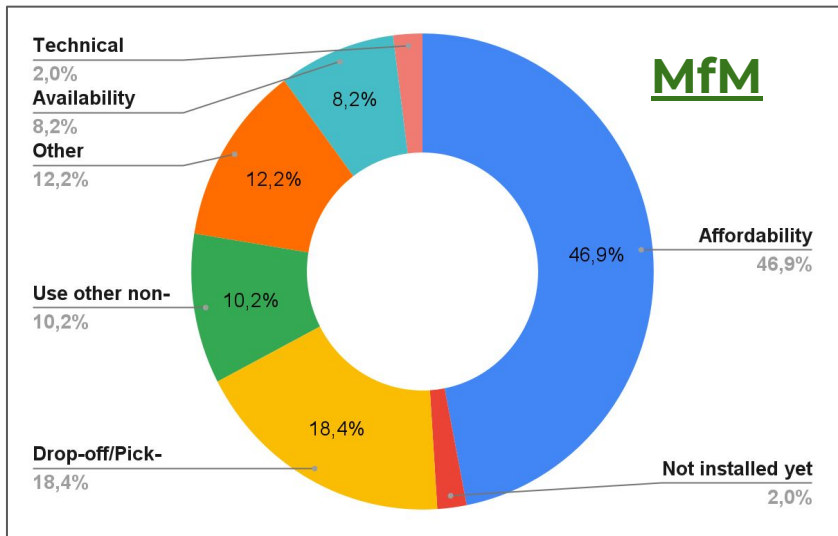# Energy Use

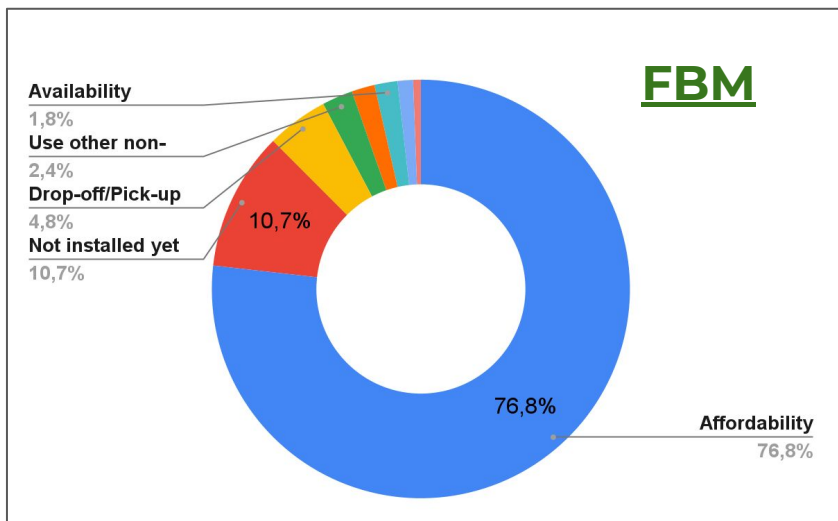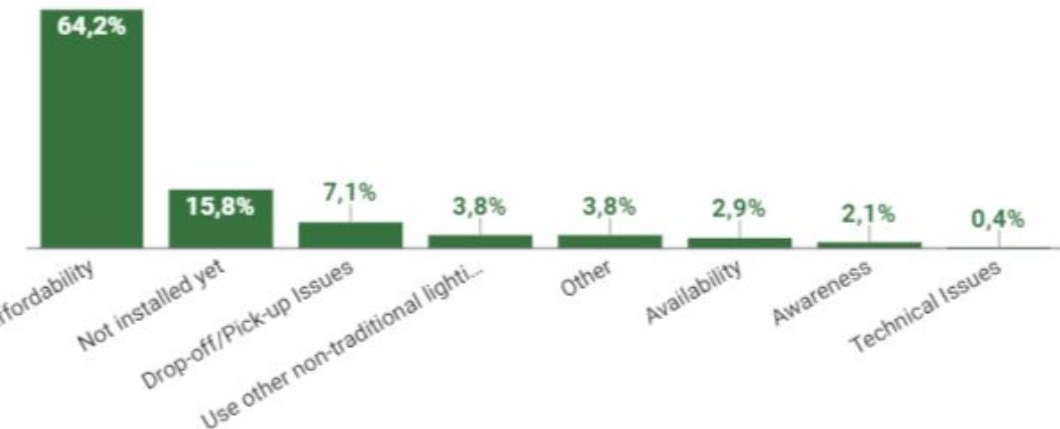## Most important factors for choice of energy

Cost-Efficiency	Availability	Tradition	Reliability	Environmental Considerations	Other	Ease of Use
42%	24%	15%	11%	5%	2%	1%

Descriptive Analysis

Energy Use
Reasons for not renting

FBM

- Availability 1,8%
- Use other non- 2,4%
- Drop-off/Pick-up 4,8%
- Not installed yet 10,7%
- 10,7%
- 76,8%
- Affordability 76,8%

- 64,2% Affordability
- 15,8% Not installed yet
- 7,1% Drop-off/Pick-up Issues
- 3,8% Use other non-traditional lighti...
- 3,8% Other
- 2,9% Availability
- 2,1% Awareness
- 0,4% Technical Issues

MfM

- Technical 2,0%
- Availability 8,2%
- Other 12,2%
- Use other non- 10,2%
- Drop-off/Pick- 18,4%
- 8,2%
- 12,2%
- 10,2%
- 18,4%
- 46,9%
- Affordability 46,9%
- Not installed yet 2,0%

Technology

Own a phone

Parents

Teachers

37,2%

62,8%

- ● Yes
- ● No

98%

- ● Yes
- ● No

Ability to use electronic devices

42,97 %

25,99 %

19,63 %

8,22 %

3,18 %

| Very uncomfortable | Not comfortable | Neutral | Comfortable | Very comfortable |

7%

8%

19%

24%

| Very uncomfortable | Not comfortable | Neutral | Comfortable | Very comfortable |
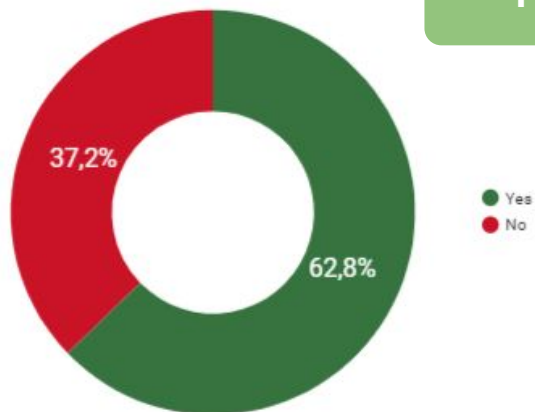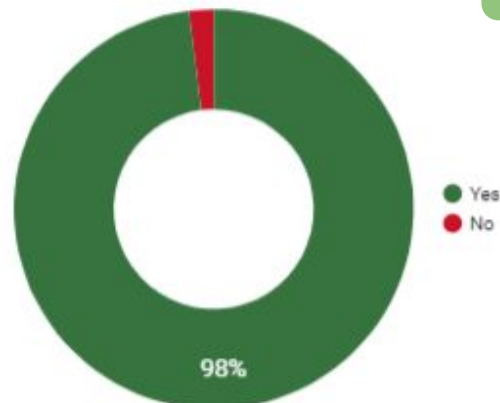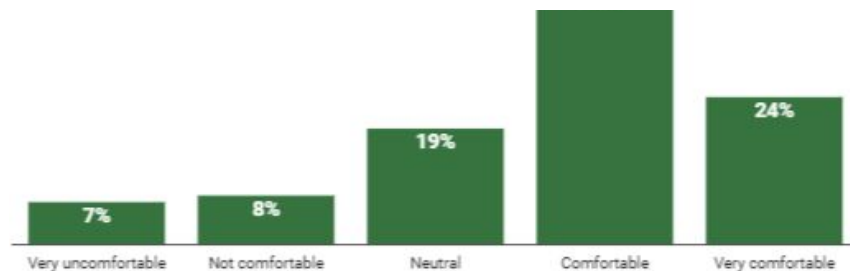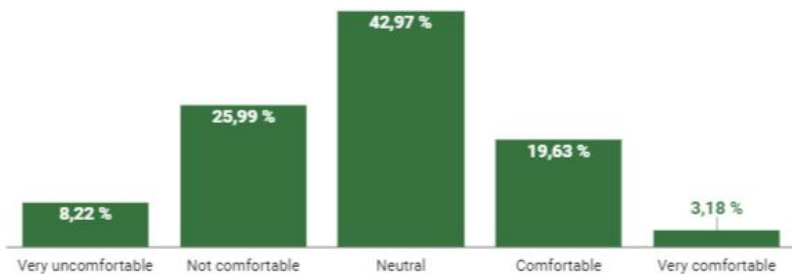
Customers VS Non-Customers

The Simple Poverty Scorecard Poverty-Assessment Tool

- The scorecard is a poverty assessment tool to estimate the **likelihood that a household has consumption below a given poverty line** using 10 indicators drawn from Madagascar's 2010 Periodic Household Survey.
- The scorecard can be used to measure the share of a program's participants who are **below the national poverty line.**
- The average national line is **MGA 1,086 per person per day**, giving poverty rates of 68.5% for households and 76.5% for people.

Simple Poverty Scorecard® Poverty-Assessment Tool

Interview ID: _____
Interview date: _____
Country: MDG
Scorecard: 001
Sampling wgt.: _____

Name _____ Identifier _____
Participant: _____
Field agent: _____
Service point: _____

Number of household members: _____

| Indicator	Response	Points	Score
1. How many members does the household have?	A. Nine or more	0	
	B. Eight	5	
	C. Seven	6	
	D. Six	9	
	E. Five	13	
	F. Four	19	
	G. Three	25	
	H. Two	33	
	I. One	38	
2. Can the (oldest) female head/spouse read a simple message?	A. No	0	
	B. Yes	2	
	C. No female head/spouse	3	
3. What is the main material of the floor of the residence?	A. Other	0	
	B. Dirt (with or without mats)	5	
	C. Wood, stone, or brick	8	
	D. Cement, concrete, or fiberglass	11	
4. What is the main permanent ceiling material?	A. Bark, leaves, stems, dirt, or mud	0	
	B. No ceiling, or other	3	
	C. Matting, wood planks, plywood, particle board, cinder blocks, cement, concrete, or fiberglass	7	
5. How many tables does the household have?	A. None	0	
	B. One	2	
	C. Two or more	6	
6. How many beds does the household have?	A. None	0	
	B. One	2	
	C. Two	4	
	D. Three or more	9	
7. Does the household have a radio, radio/cassette player, or hi-fi stereo system?	A. No	0	
	B. Yes	5	
8. Does the household have a television?	A. No	0	
	B. Yes	14	
9. Does the household have a bicycle, motorcycle/scooter, tractor, or car of its own (not counting business vehicles)?	A. No	0	
	B. Yes	4	
10. Does the household have an agricultural storage shed?	A. No	0	
	B. Yes	3	

SimplePovertyScorecard.com

Score: _____

Poverty likelihood = Living Below NPL

On average, households have

78%

likelihood of living below the national poverty line
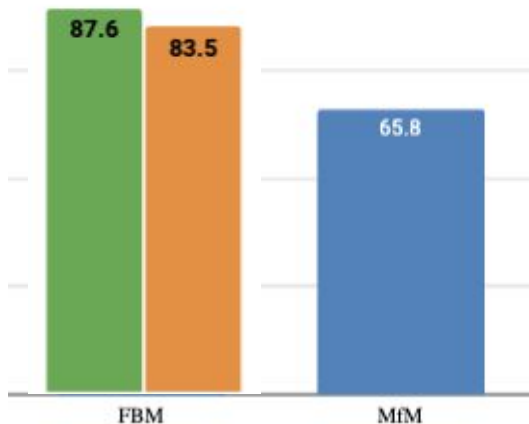
We see significant differences in scores for FBM customers compared to non-customers.

This could be because FBM parents have a significantly higher poverty probability, suggesting they are poorer.

Customers VS Non-Customers

Poverty likelihood = living below NPL

Parents Survey	Teachers Survey
77.6%	40%
79.1%	45%
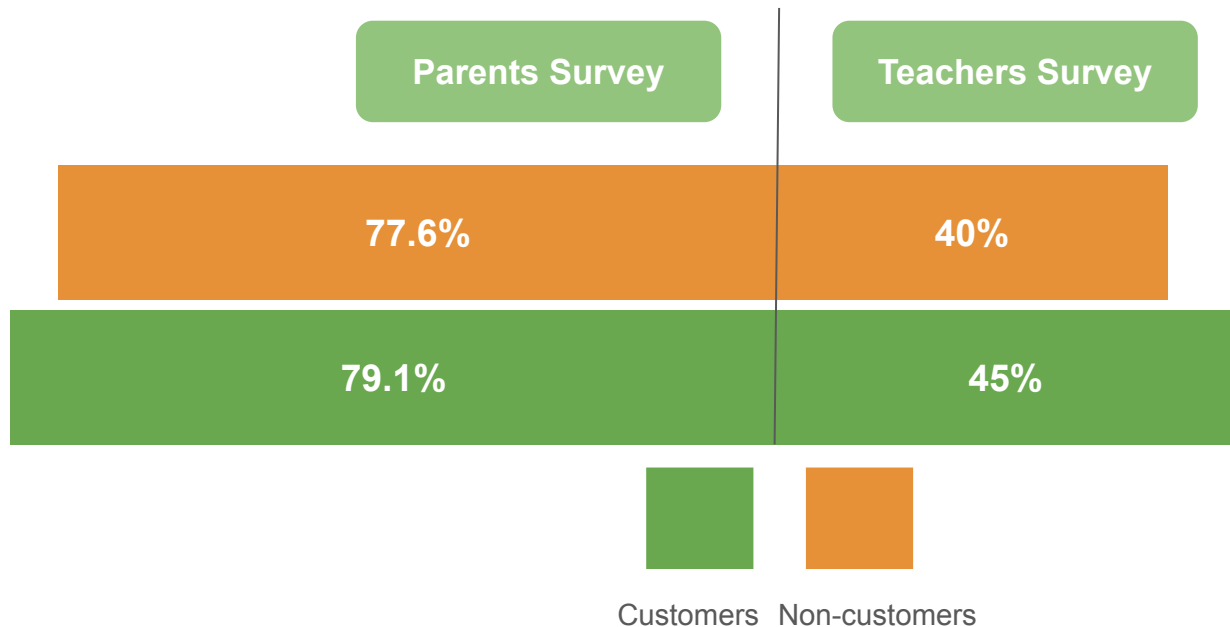
On average, teachers make
183,014
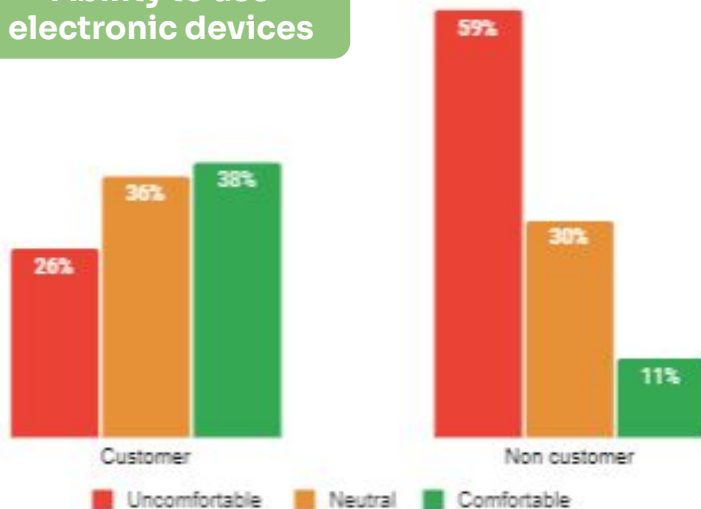Ariary per month

Customers   Non-customers

Teacher households have significantly lower poverty likelihood than other households and LL customers tend to be slightly poorer than non-customers.
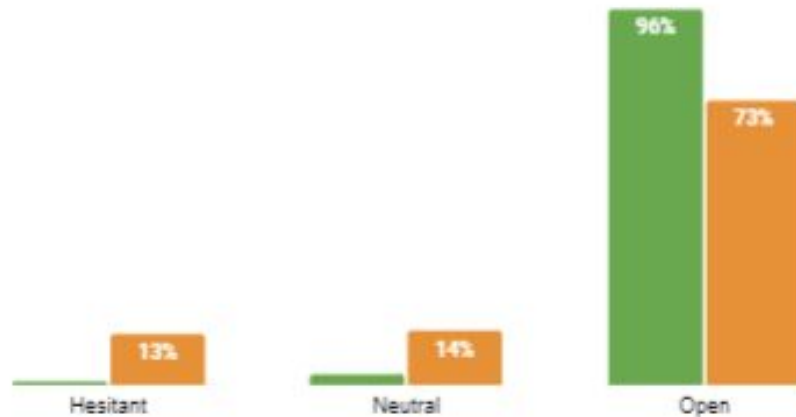
Customers VS Non-Customers

Ability and willingness

Ability to use electronic devices
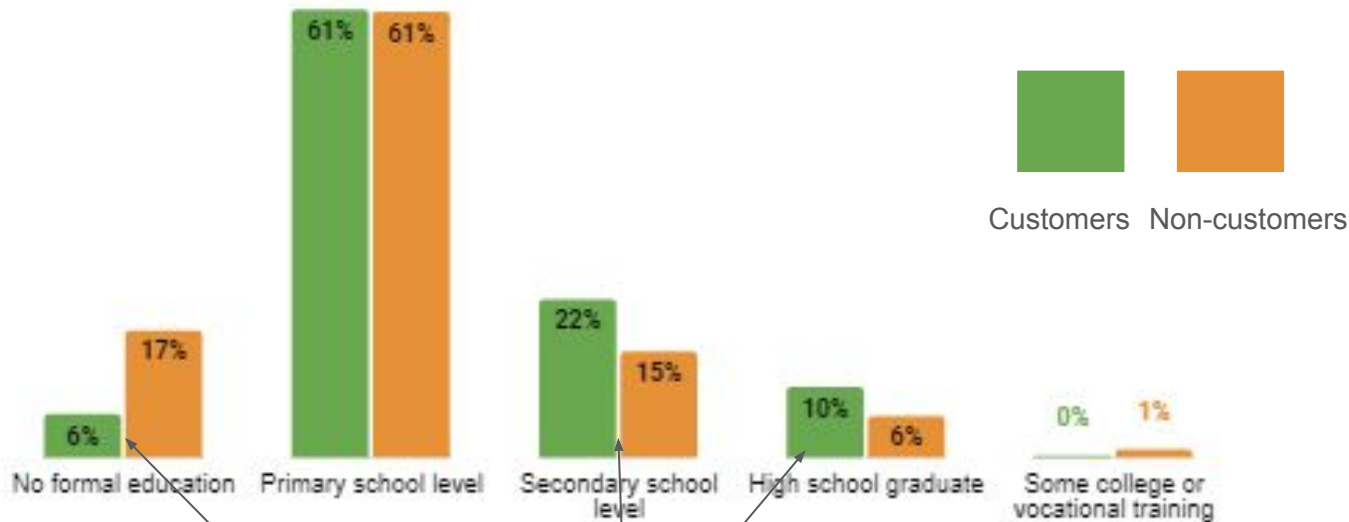
Willingness to try new sources

Compared to non-customers, fewer LL customers reported being uncomfortable with electronic devices and the vast majority reported being open and willing to try new lighting sources.
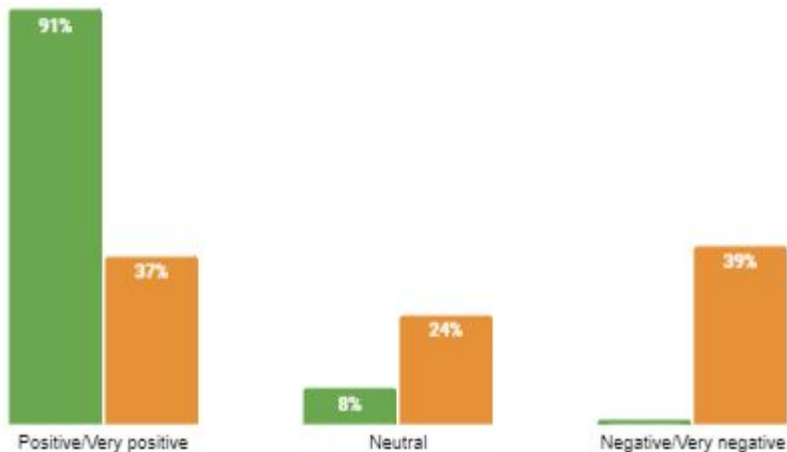
Perceived impact of current energy source

Health

Livelihood

91% of customers think the solar lamps have a very positive or positive impact on their health.

85% of solar lamp users reported that their energy source has had a positive impact on their livelihoods compared to only **50%** for non-users

Customers   Non-customers

Perceived Impact

Perceived impact of current energy source

Security

User Safety

82% of users think using solar lamps has contributed to improved sense of security, no one thought it had a negative impact

84% of customers think the solar lamps are safe while **7%** think they are not