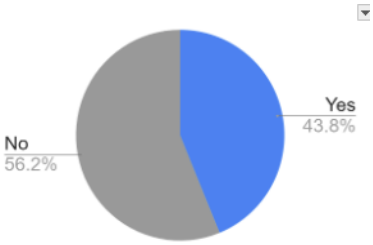
MTF Clean Cooking Stove Analysis

Descriptive Statistics

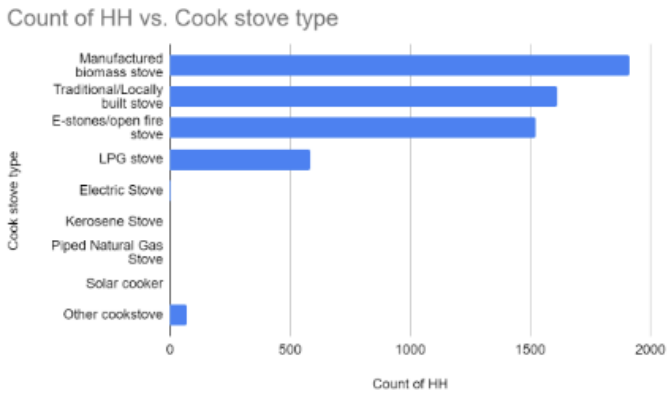
- Households with Clean cooking Stove

Have clean cooking stove	Count of HH
Yes	2500
No	3206
Total	5706



- Household cooking stove type

Cook stove type	Household
Manufactured biomass stove	1910
Traditional/Locally built stove	1612
E-stones/open fire stove	1523
LPG stove	585
Electric Stove	5
Kerosene Stove	1
Piped Natural Gas Stove	0
Solar cooker	0
Other cookstove	70



Regression Analysis

Clean cooking and electricity

Table 4: Clean cooking stove

	Dependent variable:
	clean_cooking
electricity1	0.227***
	(0.013)
urban_rural	-0.325***
	(0.013)
paid_work	0.031**
	(0.012)
marital_code	0.010***
	(0.002)
Constant	0.753***
	(0.031)
Observations	5,706
R^2	0.185
Adjusted R^2	0.185
Residual Std. Error	0.448 (df = 5701)
F Statistic	324.193*** (df = 4; 5701)
Note:	*p<0.1; **p<0.05; ***p<0.01

Connection to electricity is positively related to a household owning a clean cooking stove. Households are 22.7% more likely to have a clean cooking stove. This is statistically significant on a 1% level.

Clean cooking related fuel prep time-use regressions

Question in MTF: K2. In a typical day, how many total minutes did you spend doing fuel and stove preparation along with cooking meals (not including fuel acquisition and boiling water)

1. clean_cooking: 1 or 0 for if or not the household use clean cooking stoves, list considered clean cooking stove in MTF:
    a. Manufactured biomass stove……3
    b. LPG stove…….5
    c. Piped Natural Gas stove…..6
    d. Electric stove…7
    e. Solar cooker…8
2. solar: 1 or 0 for if or not the household use solar energy
3. electricity: 1 or 0 for if or not the household use electricity
4. Regressions are run with cluster level fixed effects.

Descriptive statistics on fuel and stove preparation:

Unit: Minutes	Min	1st Qu.	Median	Mean	3rd Qu.	Max
Women	0	45	60	80.85	120	180
Men	0	0	0	16.46	20	120

Controlling for electricity, solar, ubudehe categories

Table18: fuel prep and clean cooking

	women	men
ubudehe2	3.524+	−0.208
	(2.016)	(1.757)
ubudehe3	3.898+	0.120
	(2.102)	(1.820)
ubudehe4	9.913	2.380
	(24.023)	(12.622)
solar1	4.647	0.064
	(3.033)	(2.159)
electricity1	1.123	−2.035
	(2.144)	(1.610)
clean_cooking1	−1.112	−0.295
	(2.311)	(1.406)
Num.Obs.	5077	4508
R2	0.145	0.115
R2 Adj.	0.088	0.049
R2 Within	0.002	0.001
R2 Within Adj.	0.001	−0.001
AIC	53963.7	44189.8
BIC	56021.4	46210.1
RMSE	46.23	30.34
Std.Errors	by: cluster	by: cluster
FE: cluster	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Controlling for ubudehe categories, electricity, and solar connected households, households with clean cooking stoves spend approximately 1.112 minutes less per day in preparing for fuel and cooking than those without clean cooking stoves. This is not statistically significant.

Separately for each factor(clean_cooking, electricity, solar)

Table19: fuel prep and clean cooking

	women	men
ubudehe2	3.749+	−0.418
	(2.010)	(1.756)
ubudehe3	4.294*	−0.374
	(2.057)	(1.792)
ubudehe4	9.794	1.961
	(24.092)	(12.618)
clean_cooking	−0.728	−0.915
	(2.215)	(1.335)
Num.Obs.	5077	4508
R2	0.143	0.114
R2 Adj.	0.087	0.048
R2 Within	0.001	0.000
R2 Within Adj.	0.000	−0.001
AIC	53966.0	44188.9
BIC	56010.6	46196.4
RMSE	46.25	30.35
Std.Errors	by: cluster	by: cluster
FE: cluster	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Controlling for ubudehe categories, households with clean cooking stoves spend approximately 0.728 minutes less per day in preparing for fuel and cooking than those without clean cooking stoves. This is not statistically significant.

Table20: fuel prep and electricity

	women	men
ubudehe2	3.329+	−0.226
	(1.997)	(1.763)
ubudehe3	3.510+	0.096
	(2.082)	(1.814)
ubudehe4	8.765	2.267
	(23.997)	(12.607)
electricity1	2.446	−2.087
	(1.704)	(1.281)
Num.Obs.	5077	4508
R2	0.144	0.115
R2 Adj.	0.088	0.049
R2 Within	0.001	0.001
R2 Within Adj.	0.000	0.000
AIC	53963.7	44185.9
BIC	56008.4	46193.3
RMSE	46.24	30.34
Std.Errors	by: cluster	by: cluster
FE: cluster	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Controlling for ubudehe categories, households with grid electricity spend approximately 2.446 minutes more per day in preparing for fuel and cooking than those without clean cooking stoves. This is not statistically significant.

Table21: fuel prep and solar energy

	women	men
ubudehe2	3.607+	−0.487
	(1.997)	(1.762)
ubudehe3	4.067*	−0.475
	(2.056)	(1.799)
ubudehe4	9.839	1.496
	(24.073)	(12.532)
solar1	5.411*	−1.339
	(2.484)	(1.771)
Num.Obs.	5077	4508
R2	0.144	0.114
R2 Adj.	0.088	0.048
R2 Within	0.002	0.000
R2 Within Adj.	0.001	−0.001
AIC	53960.3	44188.7
BIC	56004.9	46196.2
RMSE	46.23	30.35
Std.Errors	by: cluster	by: cluster
FE: cluster	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Controlling for ubudehe categories, households connected to solar energy spend approximately 5.411 more minutes less per day in preparing for fuel and cooking than those without clean cooking stoves. This is statistically significant on a 10% level.