



# **SRUC PROJECT**

## **RED PILOT**

**Final Report**

June 2016



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# Introduction

# Introduction

- The USAID SRUC Project aims to promote utility commercialization and equitable, effective reforms that will enhance the financial viability and long term sustainability of developing countries' electricity systems.
- As part of the SRUC Project, USAID, in cooperation with JPS and JSIF, launched the RED pilot in June 2015 to develop, test, and evaluate a new readyboard technology in the Majesty Garden community in Kingston, Jamaica, from July 2015 through January 2017. The RED Pilot aims to reduce non-technical losses and electrify low-income urban households in sub-standard housing conditions who would otherwise not be eligible to be wired for electricity, per the Jamaican Electrical Code.
- In cooperation with Jamaica Public Service Company, Ltd. (JPS) and the Jamaica Social Investment Fund (JSIF), USAID contracted Hope Caribbean Co. to conduct a baseline survey in Majestic Gardens to understand the attitude towards electricity consumption and usage habits. This research will contribute to the implantation goals for the USAID RED Pilot.
- Specifically, a survey of households and consumer opinion within the Pilot area was conducted to determine how the RED Pilot may eventually affect recipient attitudes, habits, beliefs, income, and socio-economic standing. The survey also included a detailed inventory of the electricity appliances within the households being surveyed.



## Introduction

Hope Caribbean Company Limited is registered in Jamaica as a limited liability partnership. The registered offices are located at:

25 Burlington Avenue,  
Kingston 10,  
Jamaica.  
Tel: 876-968-7859

The firm is a full scale market research and management consultancy company that conducts commercial and social research in the Caribbean and the Caribbean Diaspora in North America and UK.



# Research Objectives

# Research Objectives

- The specific objectives of this Statement of Work are:
  - Determine the characteristics of electricity consumption in the current households, including: daily usage habits, the condition of distribution infrastructure and appliances, and safety of current electricity supply regime.
  - Chronicle current household attitudes and knowledge of electricity services, including: the prevalence of payment for electricity usage, the historic relationships between customer base and the utility, and the prevailing attitudes towards JPS.
  - Establish a baseline of the community's understanding of the RED electrification program and its goals: the pros and cons of regularized electricity access, understanding of current issues with electricity supply, and the expectations of the impacts of the Pilot project.
  - Provide a foundation from which to evaluate and report on the statistical relevance of the community responses in aggregate and the socio-economic results of the Pilot project.



# Methodology



# Methodology

- Sample Design

- *Sample frame*

- The sample was based on an estimated population of **400 households**

- *Sample size*

- A total of **351** surveys were completed. The results of the collected data is projectible at **95%** confidence level **+/- 5%**.

- *Sample selection*

- All households in the pilot area were approached.

- *Survey respondent*

- The unit of observation for this project were the persons who answered the door at the time of visit and that they fulfilled the required age and gender quota.

- Community Sensitization

- The research team liaised with reputable members of the community recommended by various project and community stakeholders.

- These liaisons' were used to assist with sensitizing the community of the research project in order to increase respondent participation.

# Methodology

- Instrumentation

The questionnaire was developed in conjunction with the SRUC team and was designed to achieve all stated objectives.

The instrument template that was provided in the RFQ was modified based on discussions with the client as well as agencies as JSIF and JPS. The instrument was also guided by results from in-depth interviews and discussions and focus groups that were conducted with residents of the test community.

The final instrument was developed after a few iterations resulting from field testing against questionnaire flow, timing and objectives mapping.

- Training

Supervisor and interviewers were trained on the instrument and also in conducting research in potentially volatile and depressed areas.

# Methodology

- Quality Control & Data Management

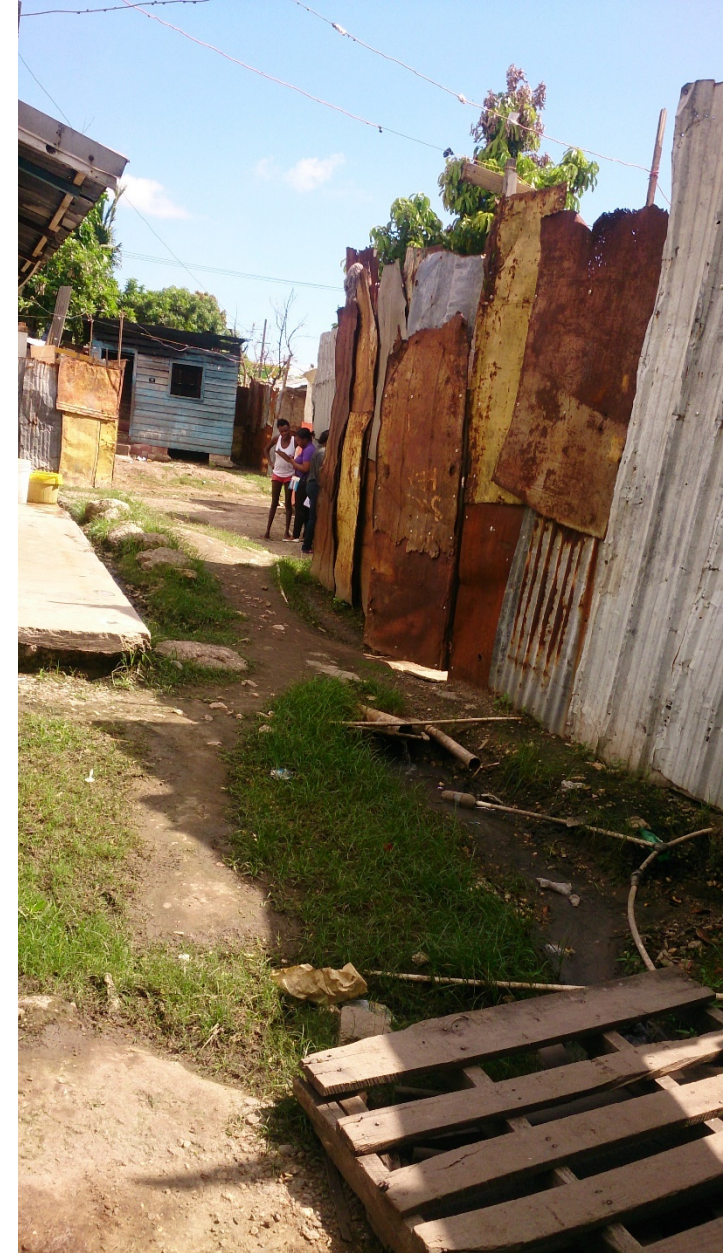
- On-the-spot supervision of the first 5 interviews of each interviewer were done.
- Random check backs were completed on interviews for each interviewer.
- 10% of questionnaires double-entered and the level of error estimated to ensure that the level of error and match falls within 10% was completed.
- 100% checks were done for incompleteness, omission, and otherwise erroneous data.
- Statistical methods were used to check consistency, accuracy, and quality of work of each interviewer.



# Key Findings

# Socio-economic results

*"Back To" in Majestic Gardens*





## Socio-economic results

### Community Profile



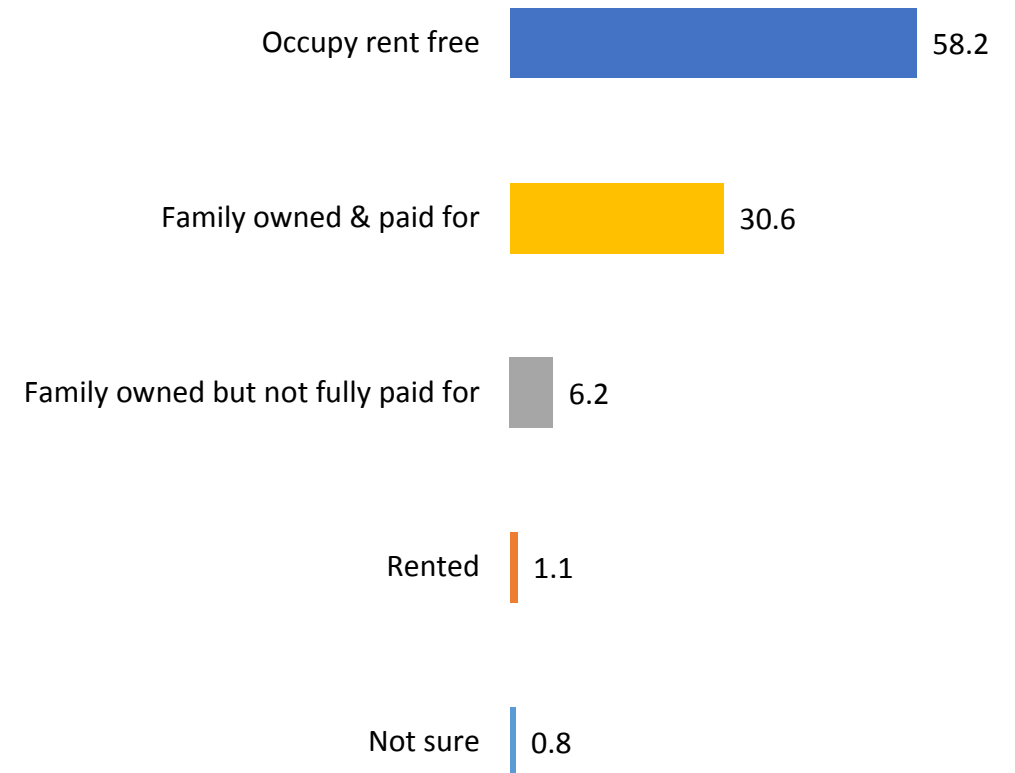
- The area of study was typically comprised of houses constructed of a mix of board (88.9%) and concrete (49.9%) walls and zinc (98.9%) (Figure 1). House ownership was generally squatting (occupied rent free 58.2%) with some amount of family ownership (30.6%) (Figure 2).
- Four in ten houses were single room homes (40.5%). A third (34.8%) comprised of two rooms and a quarter had three or more rooms (Figure 3). Homes comprised primarily of bedrooms (99%) and kitchens (41.7%). Very few homes included indoor bathroom facilities (3.1%) (Figure 4).
- Overall 1 in 3 residents reported having no formal bathroom structure while another third (33%) reported using outdoor toilets. Others used toilet facilities outside their home (15.7%) and a similar portion reported the use of the nearby gully (15.7%) and scandal bags (15.4%) as the primary means of bathroom facilities and, in particular, disposal. (Figure 5)
- The community is not a transient one nor are its residents in transition. Instead, most have lived in the community for more than 20 years (58.7%) (Figure 6). Similarly, half of residents identified their homes (the physical structure) as having been there for more than 10yrs. (50.7%) (Figure7).

**Figure 1: Construction Material**

Material	Walls (%) (n=351)	Roof (%) (n=351)
Concrete/Slab	49.9	0.9
Board	88.9	3.7
Zinc	-	98.9
Tar	-	0.3

\*Percentages exceed 100 due to multiple responses

**Figure 2  
Ownership of House  
% of respondents  
(n=351)**



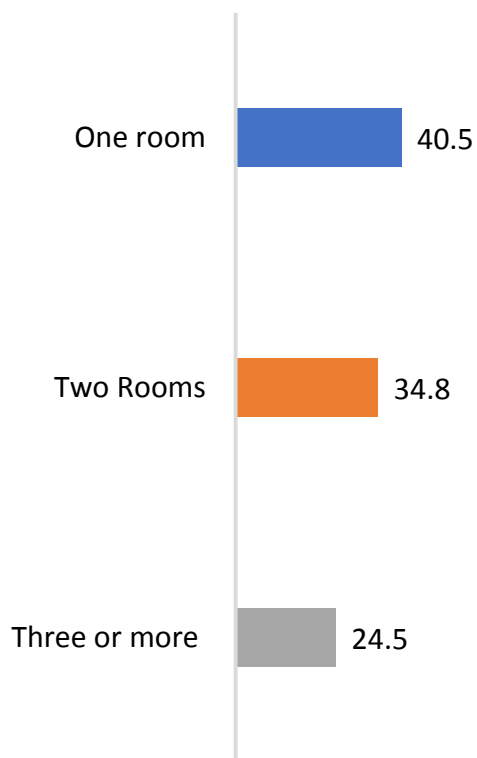


## Structure of houses: zinc fences, board walls and some concrete

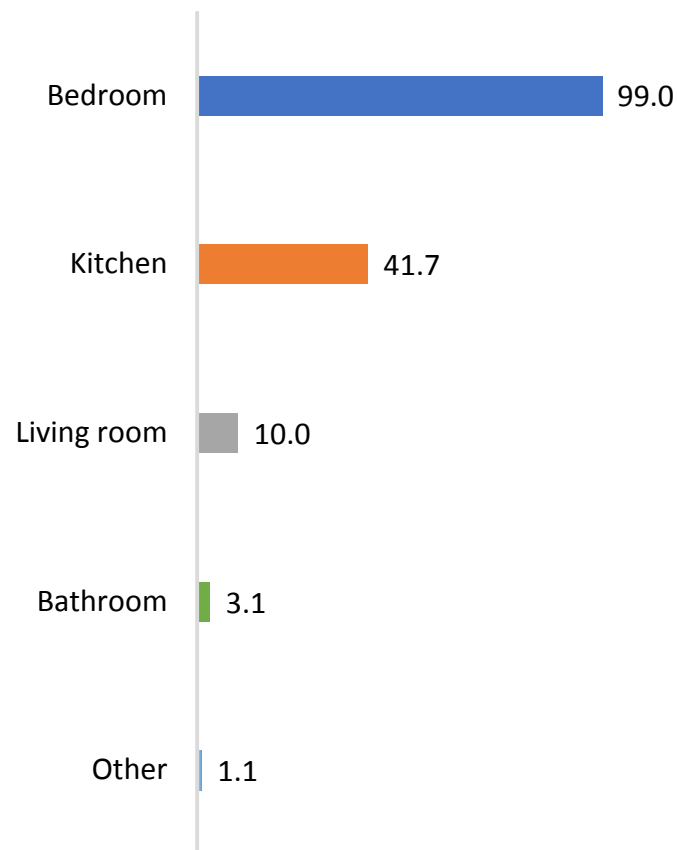


# Rooms

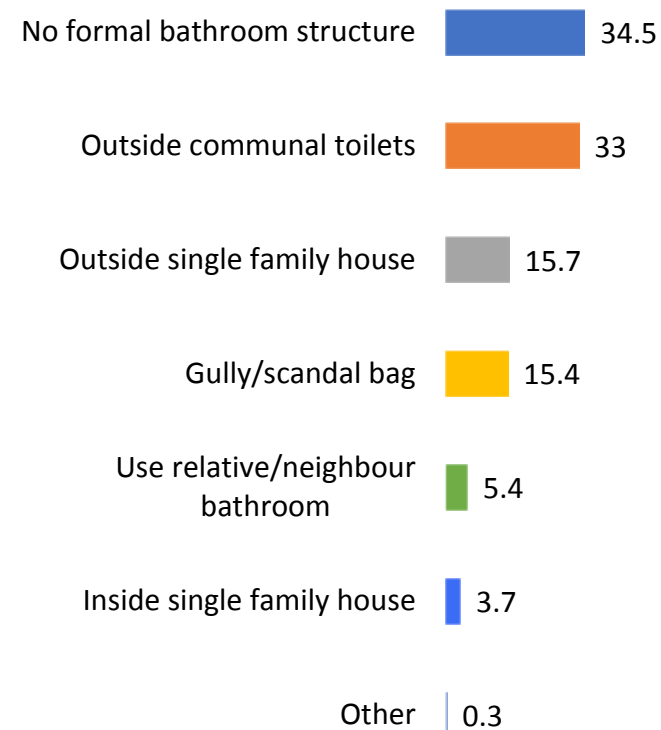
**FIGURE 3  
NUMBER OF ROOMS IN HOUSE  
% OF RESPONDENTS  
(N=351)**



**FIGURE 4  
TYPES OF ROOMS IN HOUSE  
% OF RESPONDENTS  
(N=351)**

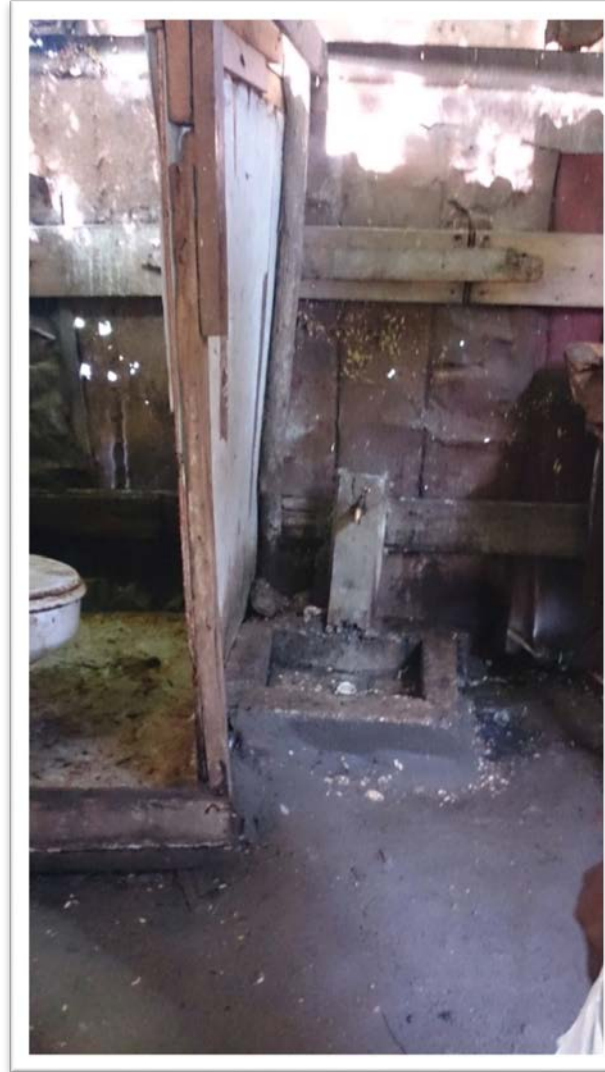
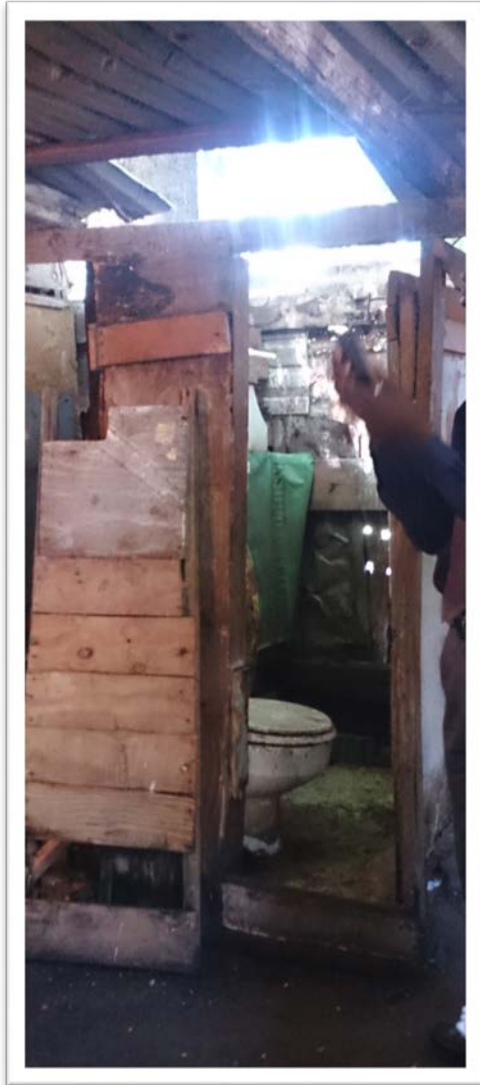


**FIGURE 5  
LOCATION OF BATHROOM  
% OF RESPONDENTS  
(N=351)**



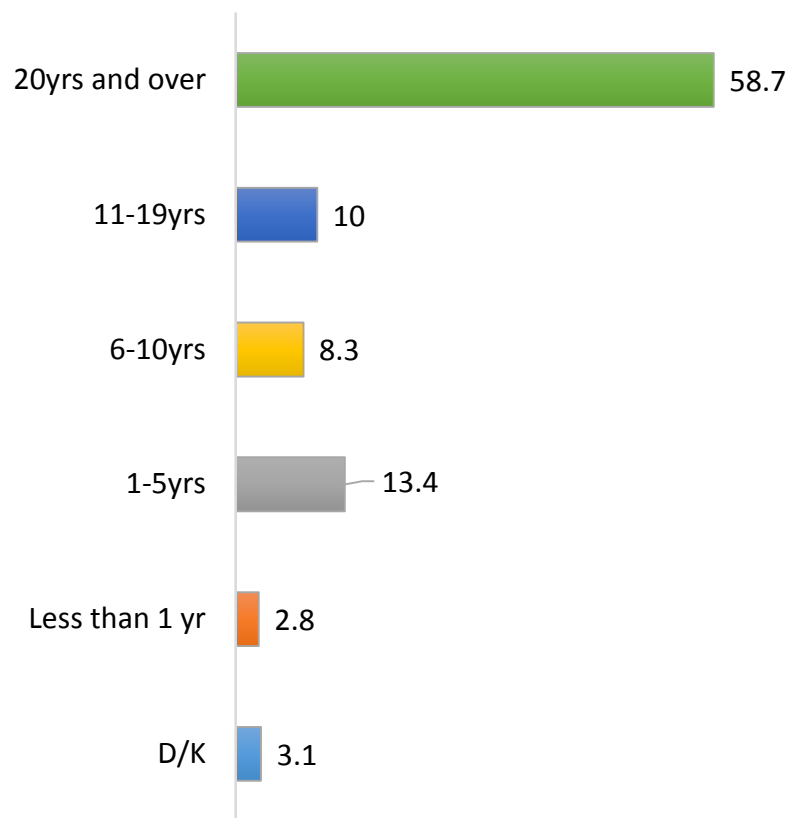


**Non-functioning  
indoor bathroom**

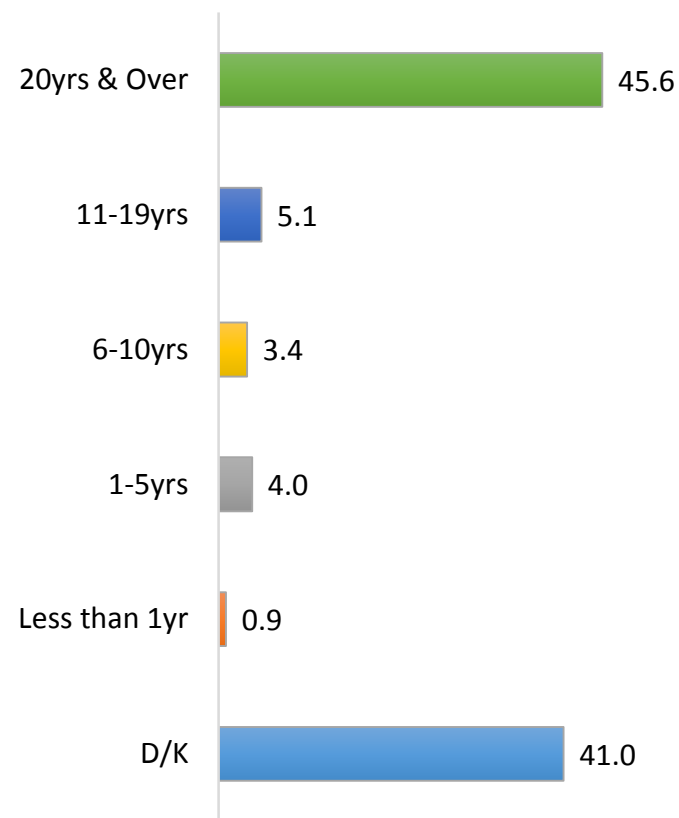


**The gully  
which borders  
the community**

**Figure 6**  
**Length of time family has lived in Community**  
**% of respondents**  
**(n=351)**



**Figure 7**  
**Length of time building has been in the Community**  
**% of respondents**  
**(n=351)**





# Respondent Profile

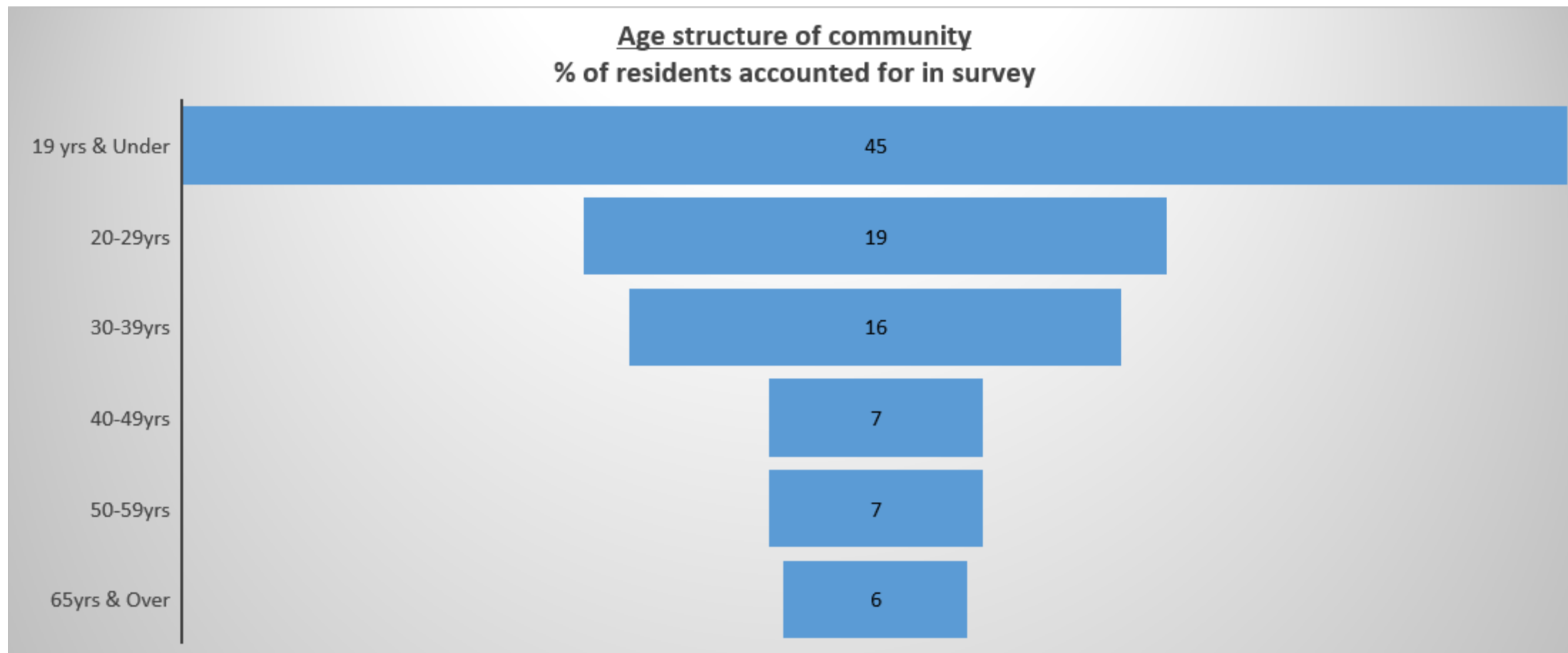
- The survey noted some home-based commercial activity. Specifically, 1 in 5 (20%) respondents operate a business from home (Figure 9). Coal and snacks (55.6%) and small shops (20%) were the main home-based business cited by respondents (Figure 10).
- Overall, households earned an average (median) of \$4,500-\$5,000 JMD per week (Figure 11). Main monthly recurring expenses included food (97.2%), transportation (75.5%), communication via mobile phone (64.4%) and personal care (53%) (Figure 12).
- While households reported earning an average of \$4,500 to \$5,000 JMD per week, they reported spending \$200-\$350 JMD per week on lighting and were willing to spend a maximum of \$750-\$1,000 JMD weekly.
- Other expenses noted by respondents (although not occurring monthly) were clothing (87.5%), cooking gas (79.8%), health (59%) and education (57%) (Figure 13). Food (70.4%) was readily identified as the most important bill to pay (Figure 14).
- Half of residents (51.3%) reported having a bank account but most (90.8%) had not taken a loan in the last 3 years (Figure 18). Just less than half (45.7%) reportedly saved money in a commercial bank, an additional quarter (23.4%) saved through the partner system. A fifth (22%) did not report saving money. (Figure 19)

**Figure 8a**  
**Gender and Occupation Profile**

	% (n=351)
<b>Gender</b>	
Male	58.7
Female	41.3
<b>Type of Occupation held in past 12 months</b>	
Unskilled (e.g vendor, pig farmer, windshield wiper, janitor, etc.)	63.8
Some skill (e.g. construction worker, sales rep, teacher, etc.)	15.7
Unemployed/ retired/student	20.5

- Residents were generally engaged in low level (unskilled) income generating activities in particular vending (63.8%).
- Less than a fifth (15.7%) were engaged in some skilled employment such as construction work.
- Almost two-thirds of the respondents are under 30 (64%).

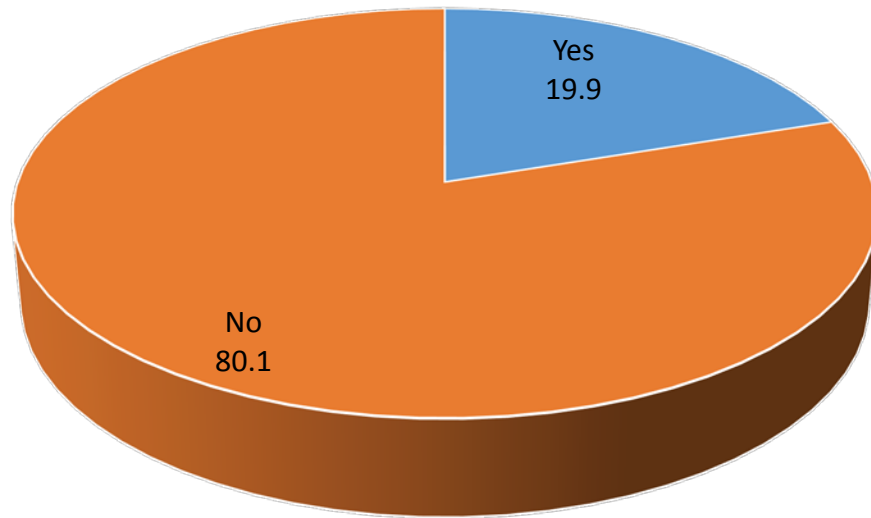
# Age Distribution





# In-Home Commercial Activity

**Figure 9**  
**Operate a business at home**  
**% of respondents**  
**(n=351)**

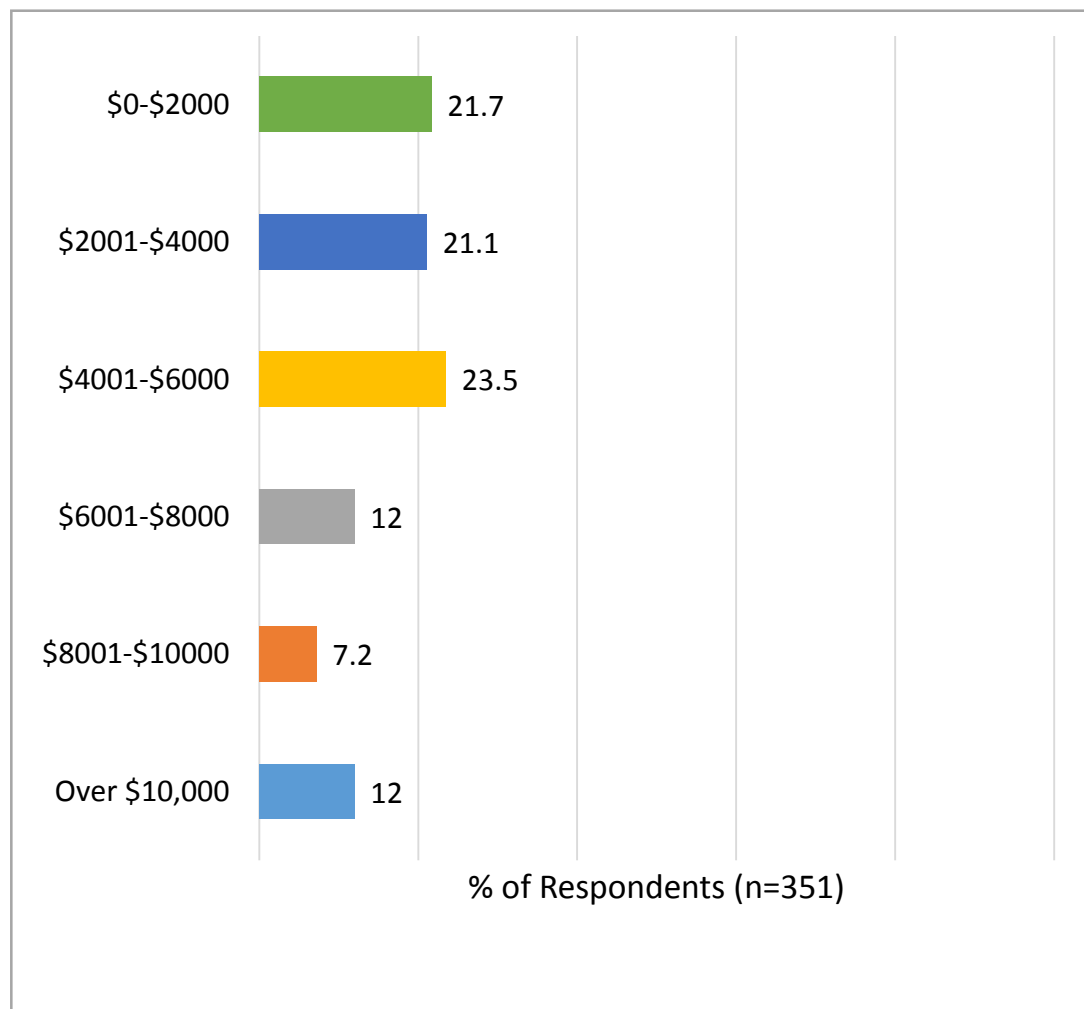


**Figure 10**  
**Type of Home Business**

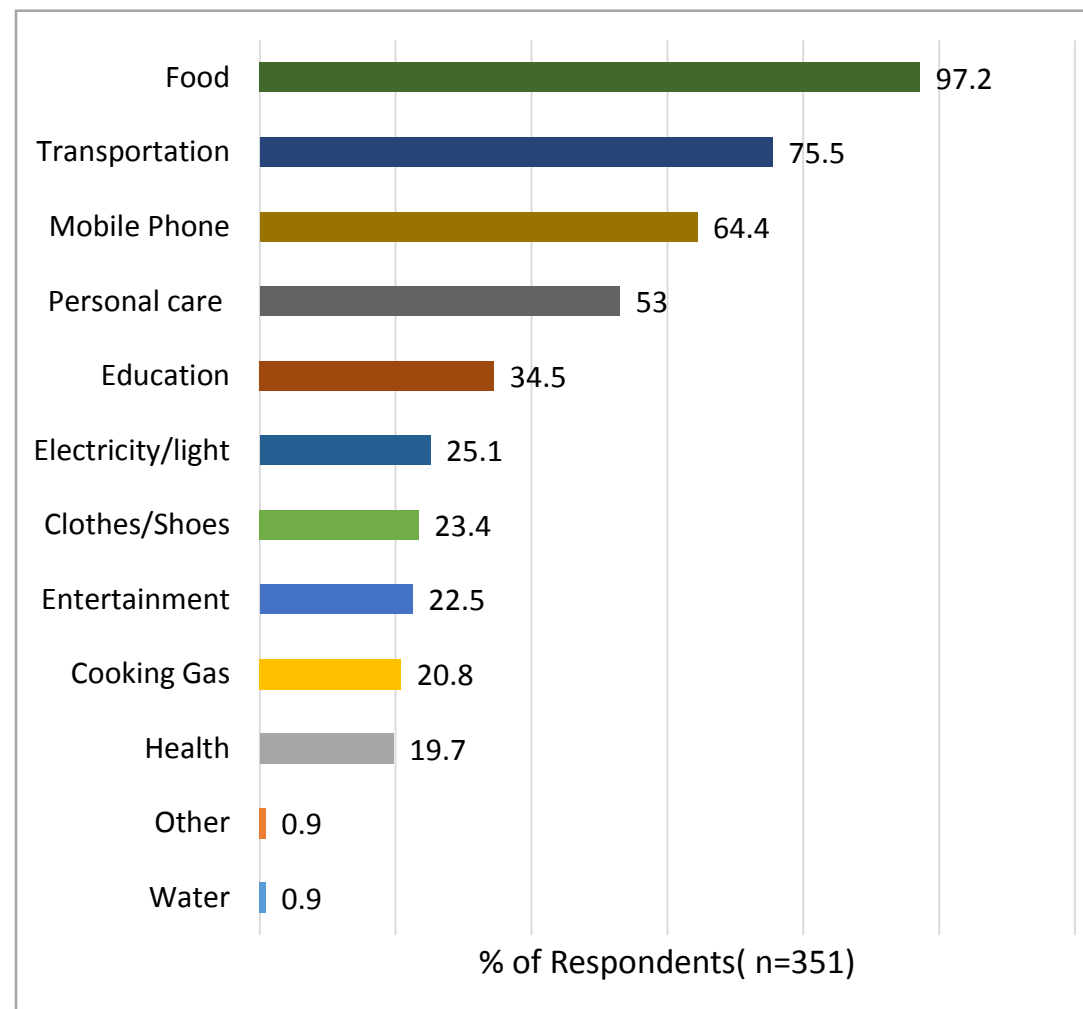
Type of Business	% of respondents (n=70)
Vendor (coal, snacks, fish, scrap metal) etc.	55.6
Small Shop	20.0
Dressmaking	7.1
Hairdresser/Barber shop	7.1
Small farming	2.9
Raise chickens	2.9
Selling cooked lunches	2.9
Electrical shop	1.4
Fix fans	1.4
Carpenter	1.4

\*Percentages exceed 100 due to multiple responses

**Figure 11**  
**Weekly Household Income**

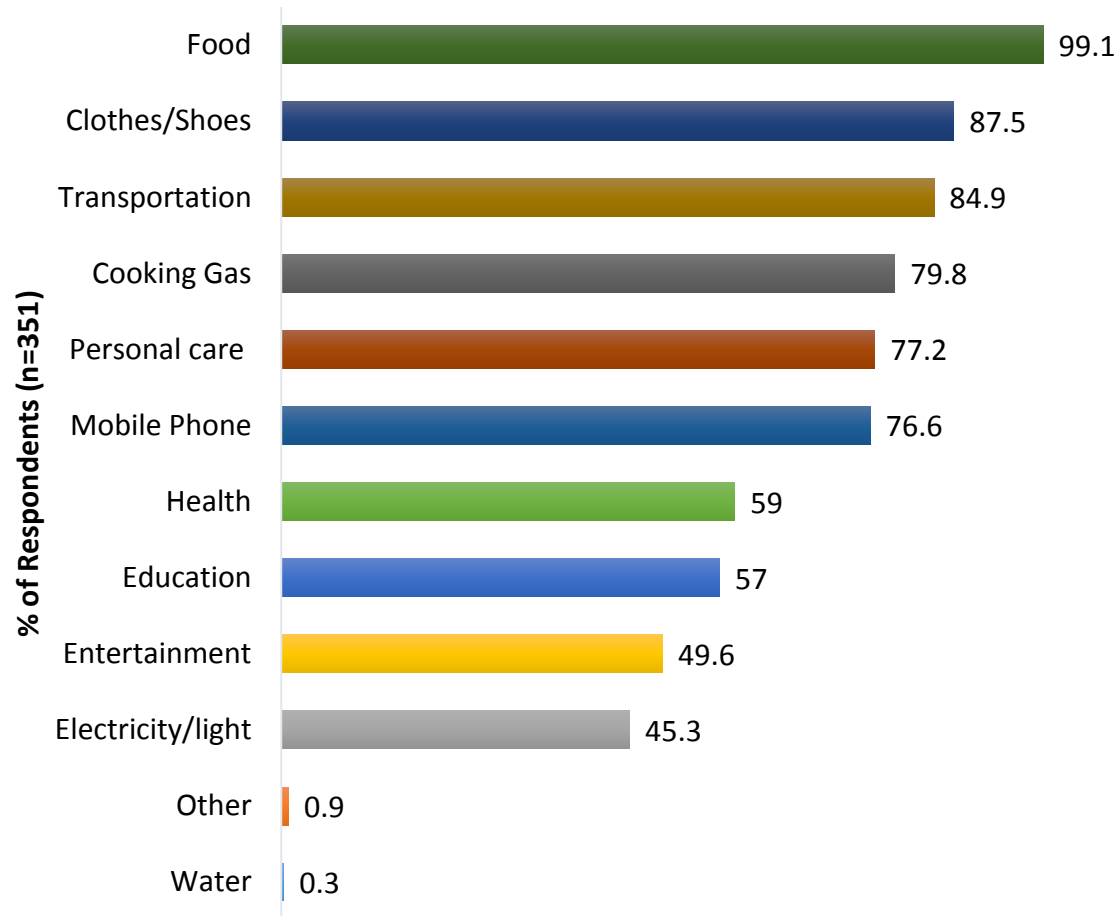


**Figure 12**  
**Monthly Household Expenses**

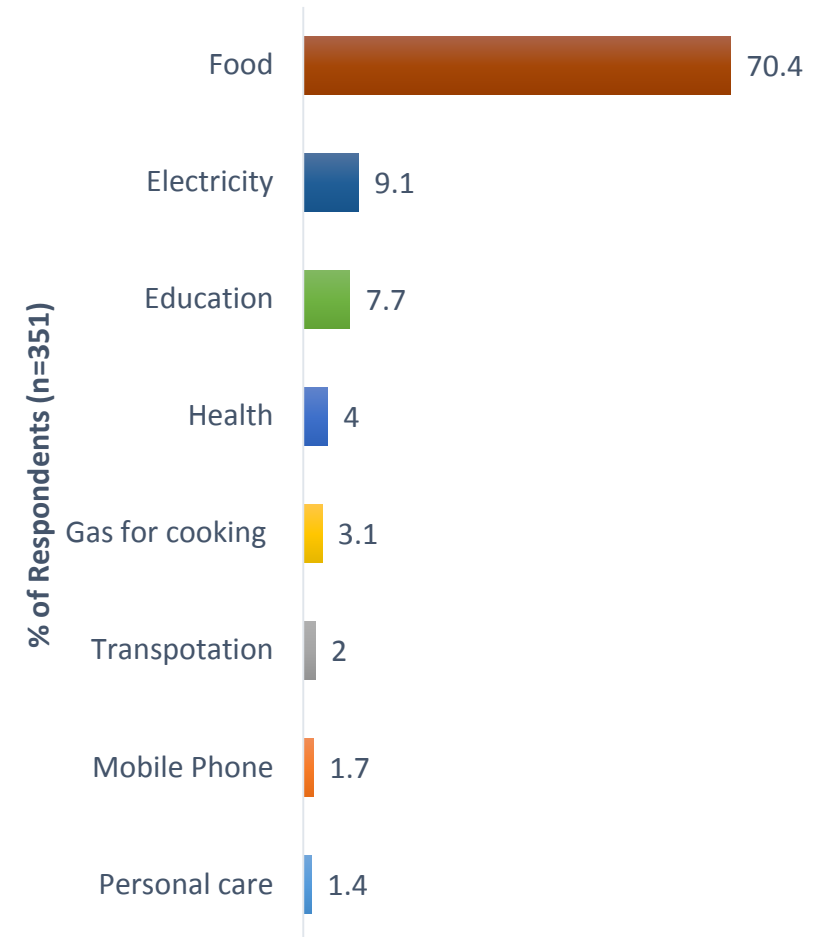


\*Percentages exceed 100 due to multiple responses

**Figure 13**  
**All Household Expenses**

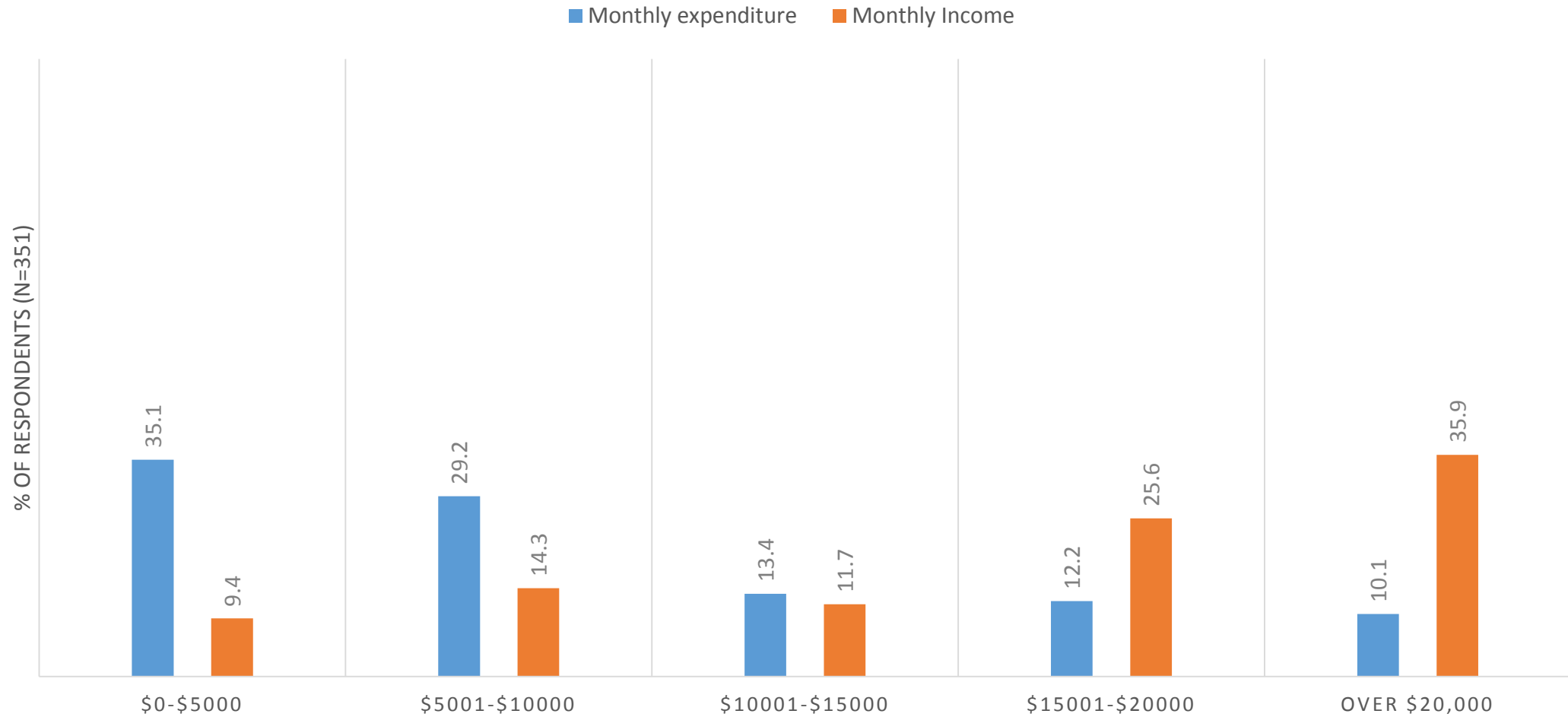


**Figure 14**  
**Most Important Bill to Pay**



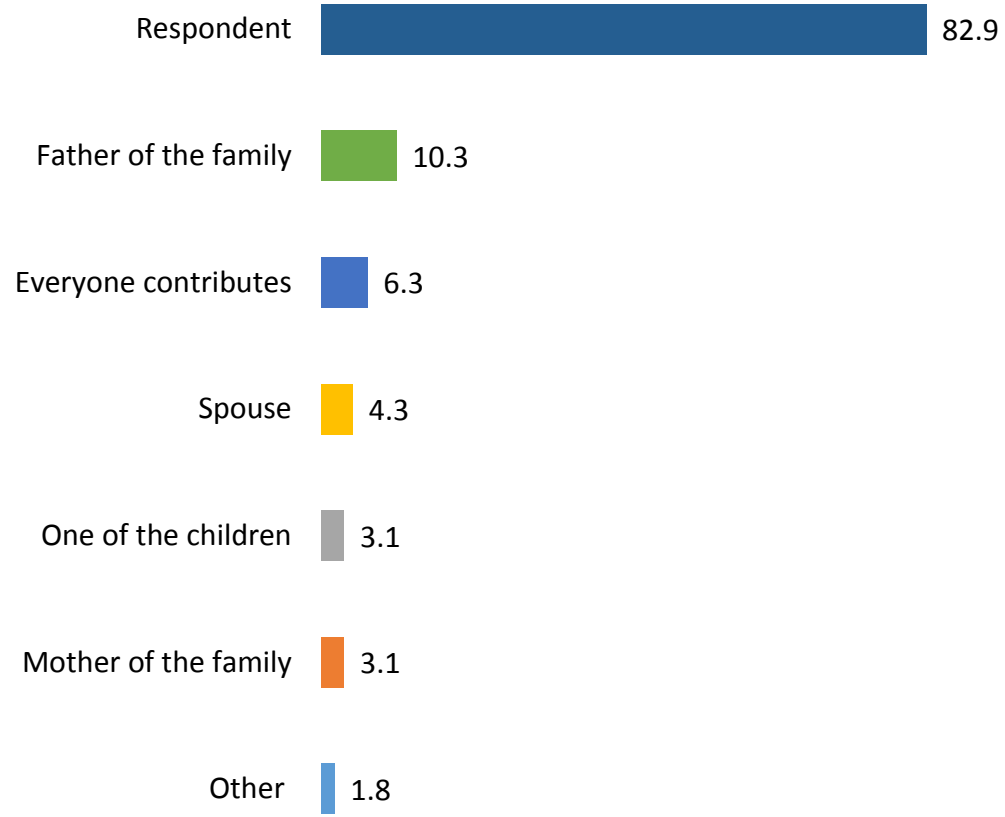
\*Percentages exceed 100 due to multiple responses

**Figure 15**  
**Total Monthly Household Expenditure vs Estimated Income**



**Figure 16**

**Person Responsible to pay Household Expenses**

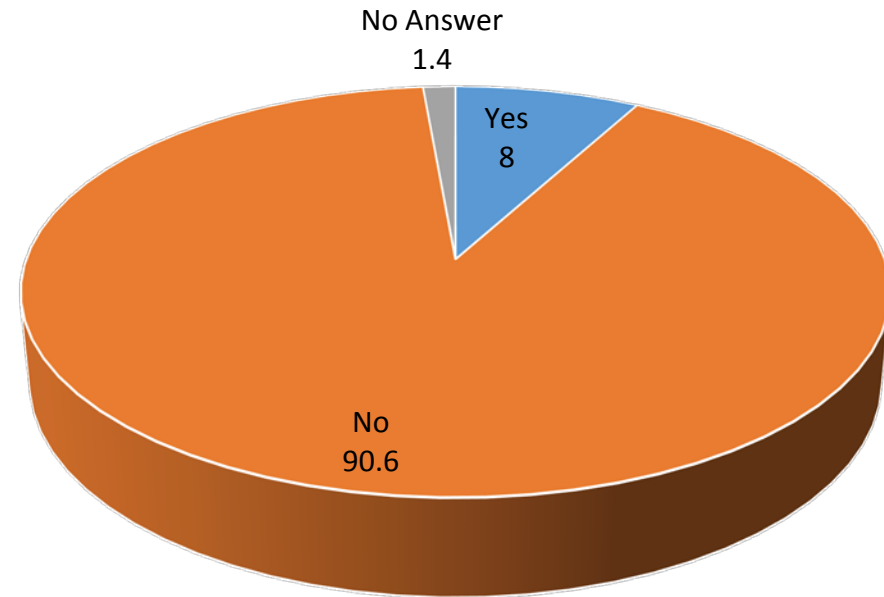


% of Respondents (n=351)

\*Percentages exceed 100 due to multiple responses

**Figure 17**

**Has anyone taken loan in the last 3 years**



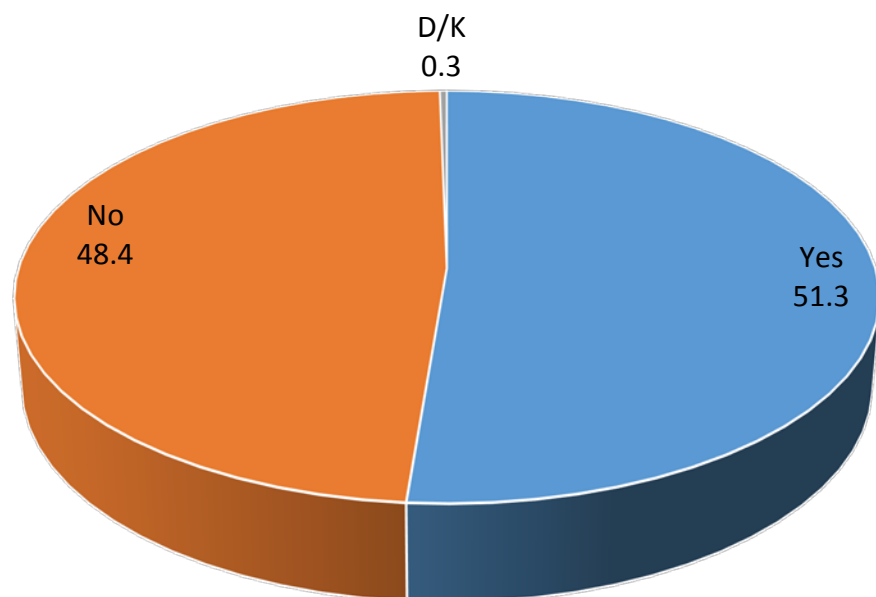
% of Respondents (n=351)

**Figure 18**

**Does anyone in your household have a bank account**

**% of respondents**

**(n=351)**

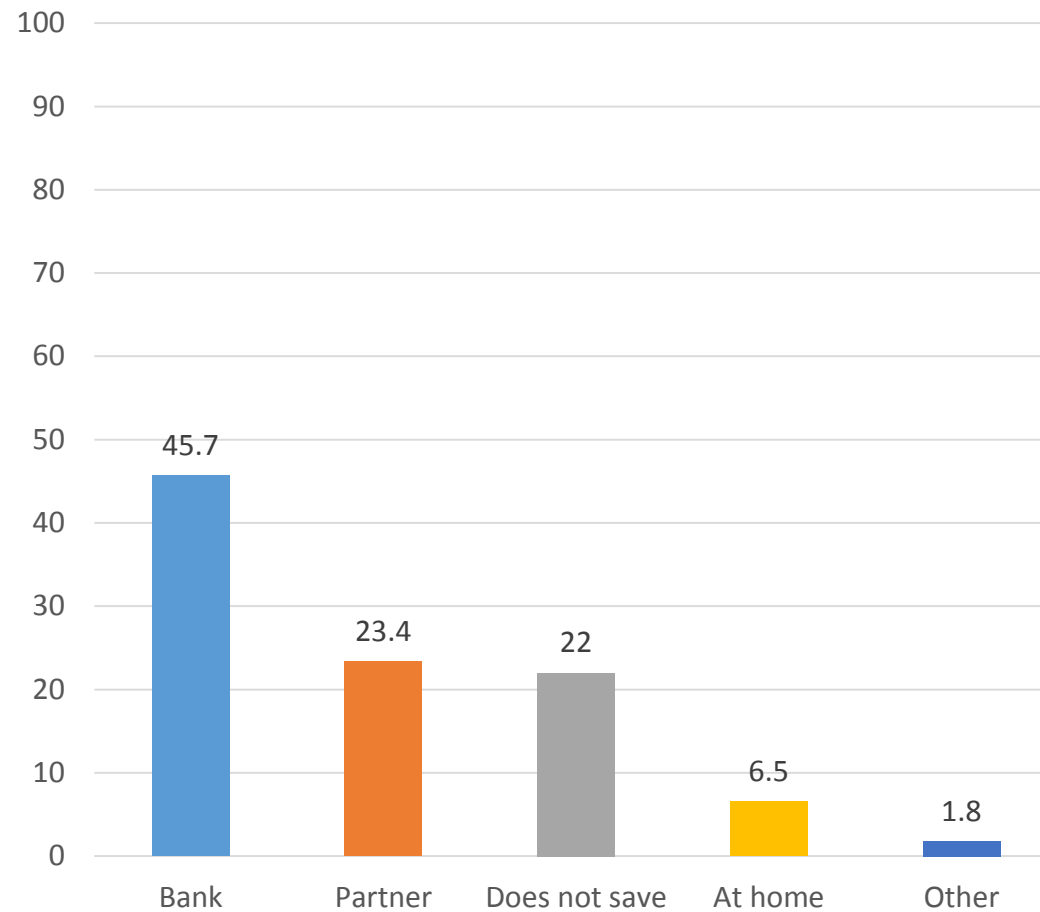


**Figure 19**

**Where do household members save?**

**% of respondents**

**(n=351)**



\*Percentages exceed 100 due to multiple responses



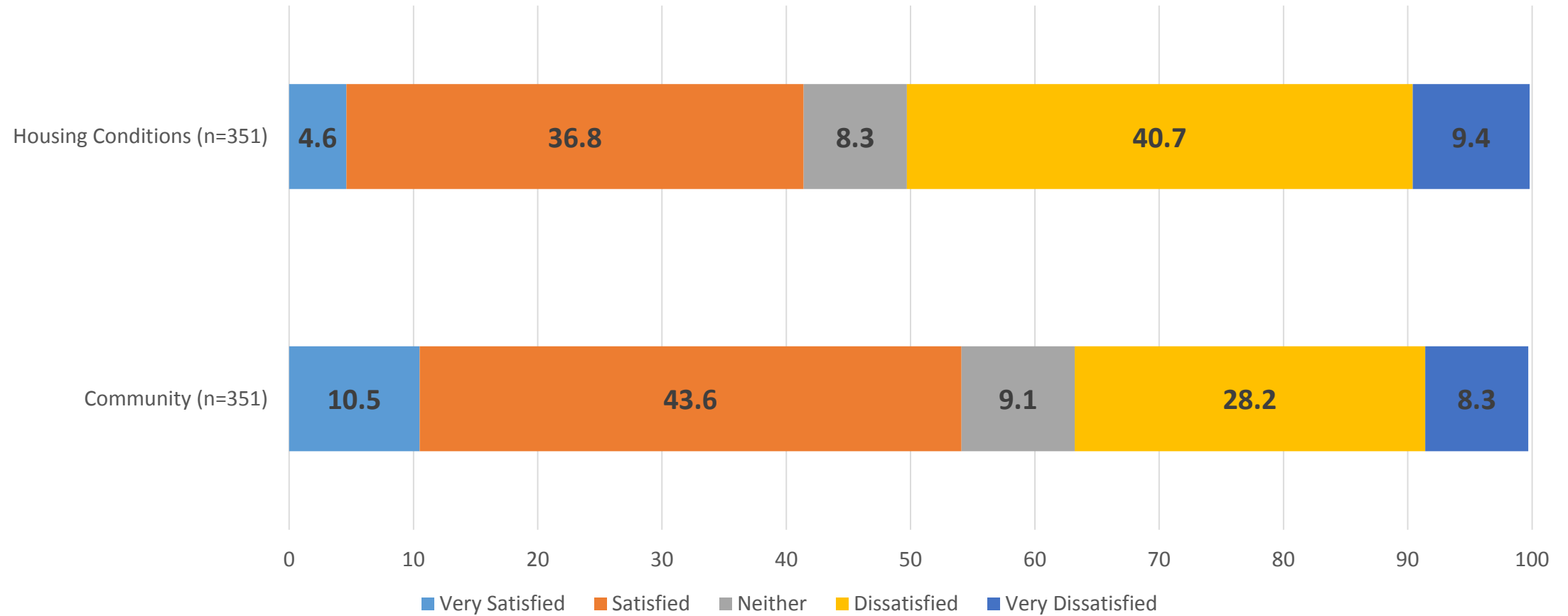
# Quality of Life

Key Findings

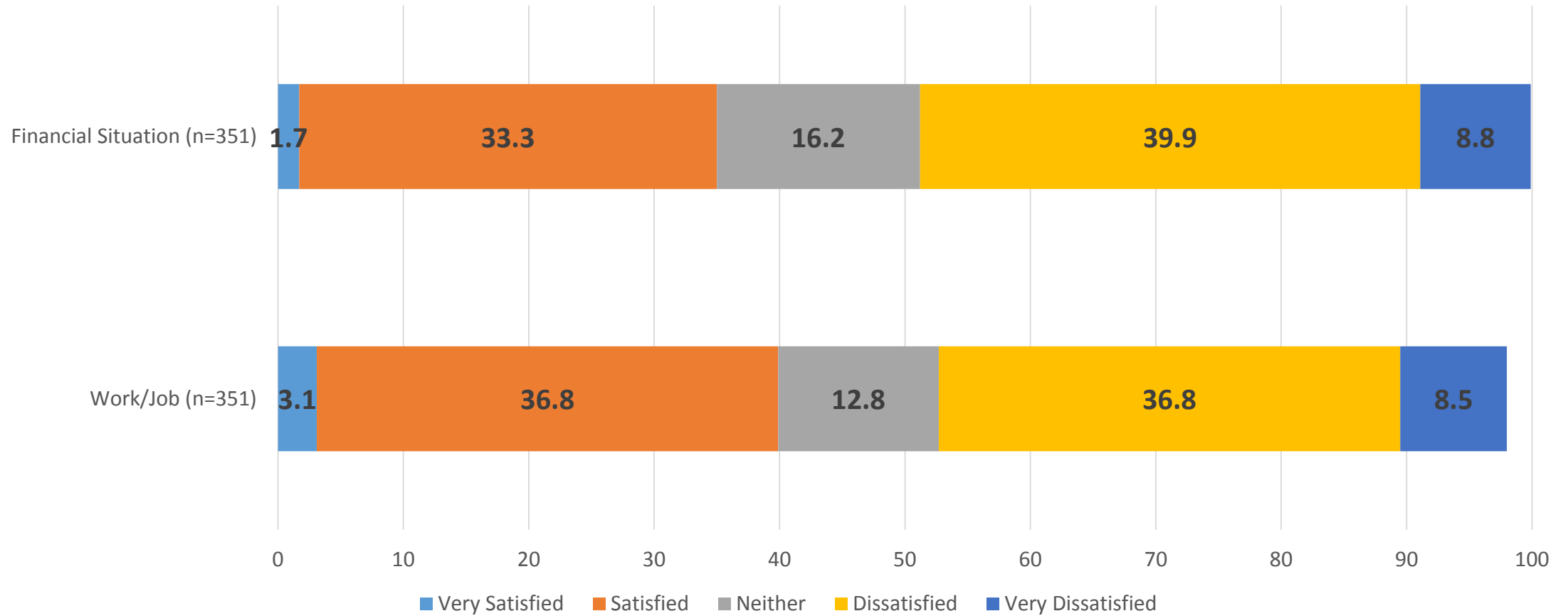
- Overall, there were similar levels of satisfaction and dissatisfaction displayed by respondents with regards to their community and life situation.
- While dissatisfaction was expressed, it should be noted that it was not extreme dissatisfaction.
- While residents were satisfied with their community (54.1%), many were dissatisfied with their housing conditions (50.1%). (Figure 20)
- Many were also dissatisfied with jobs (45.3%) and their financial situation (48.7%). (Figure 21)
- Despite financial challenges, residents were satisfied with their family's health (74.6%), their personal health (76.4%), and their leisure activities (67.2%). (Figure 22 & Figure 23)



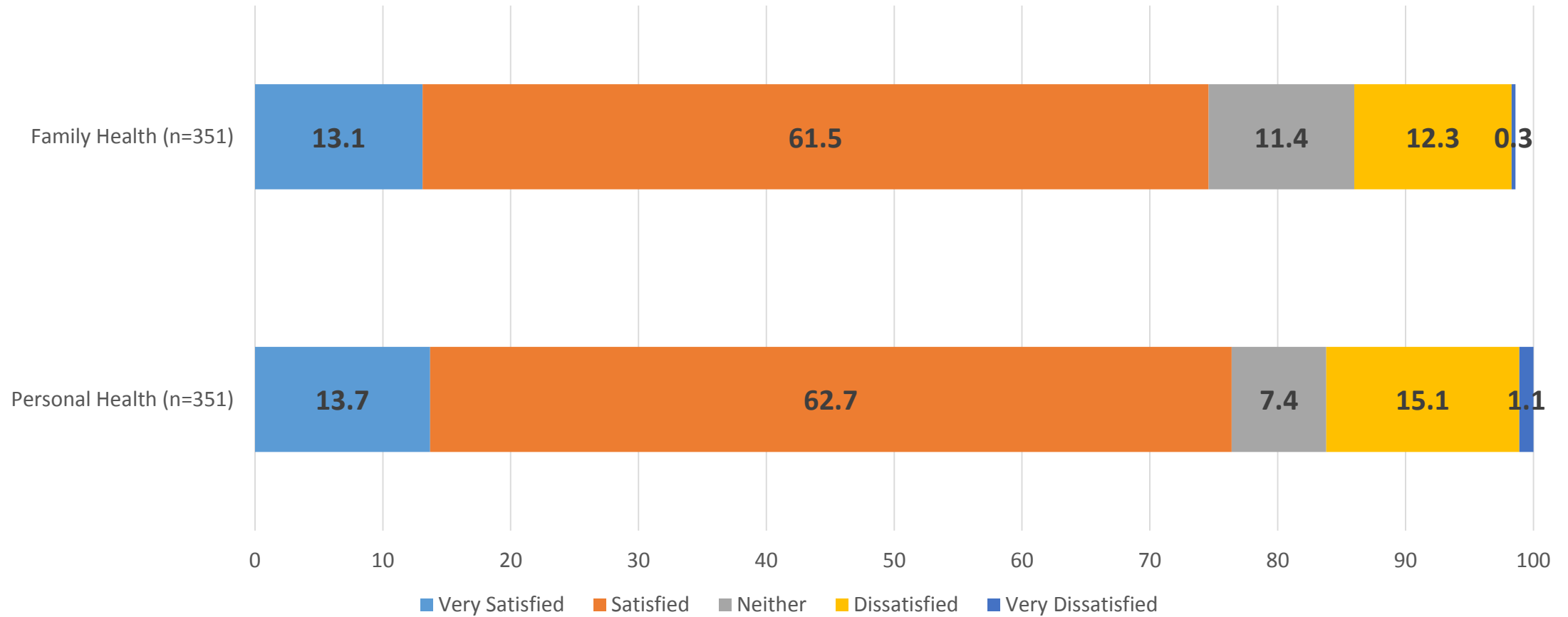
**Figure 20**  
**Level of Satisfaction:**  
**Housing Conditions and Community**



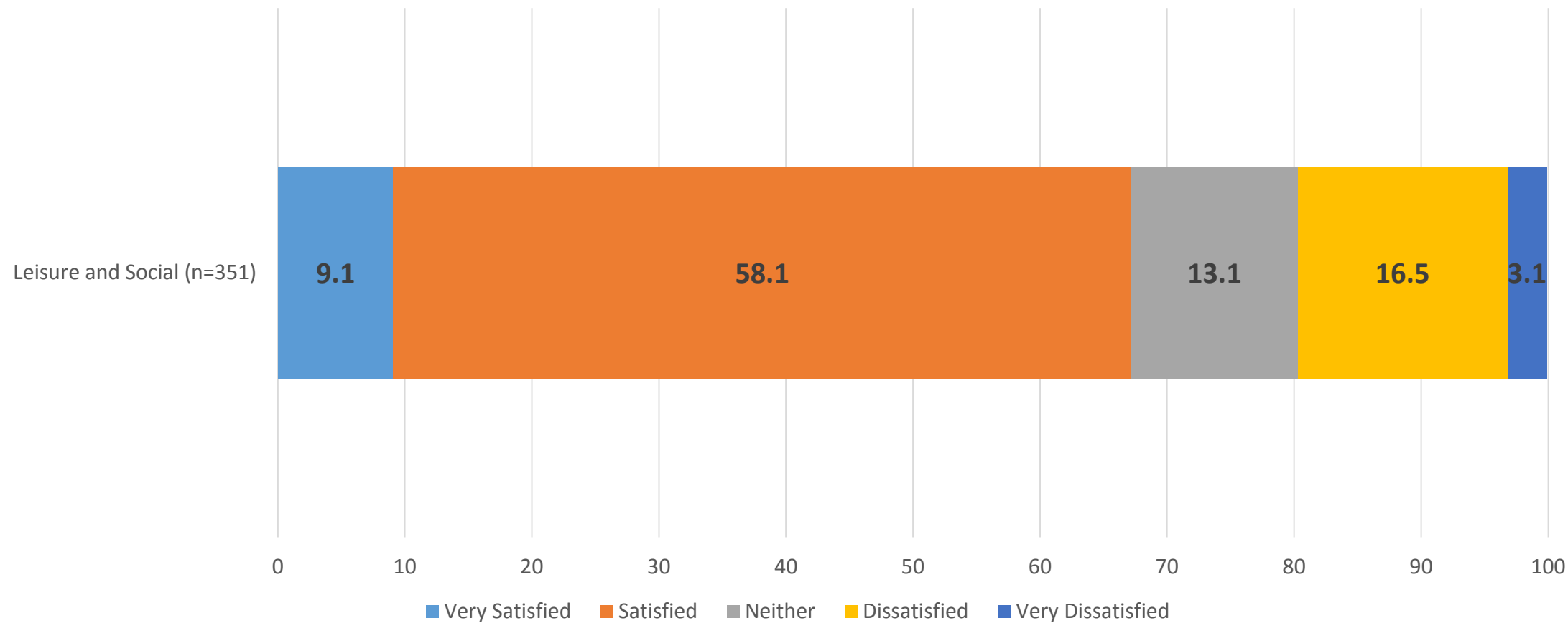
**Figure 21**  
**Level of Satisfaction:**  
**Work and Financial Situation**



**Figure 22**  
**Level of Satisfaction:**  
**Family and Personal Health**



**Figure 23**  
**Level of Satisfaction:**  
**Leisure and Social Life**



# Characteristics of electricity consumption

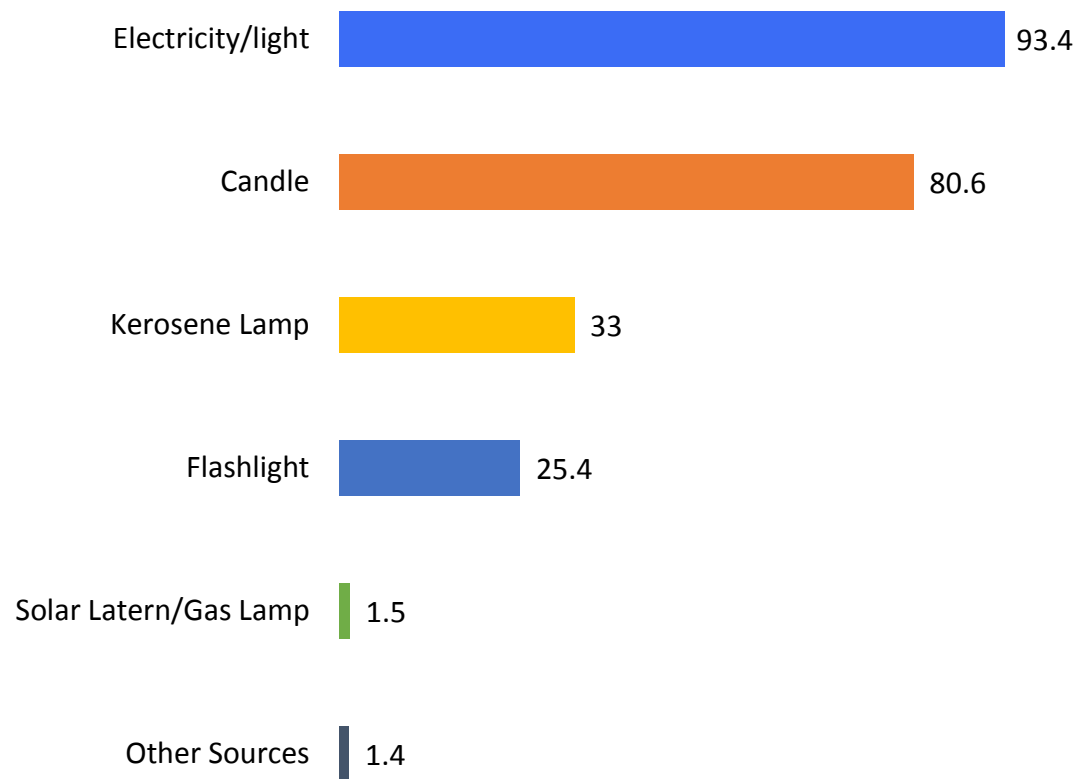
Key Findings



# Electricity/Light

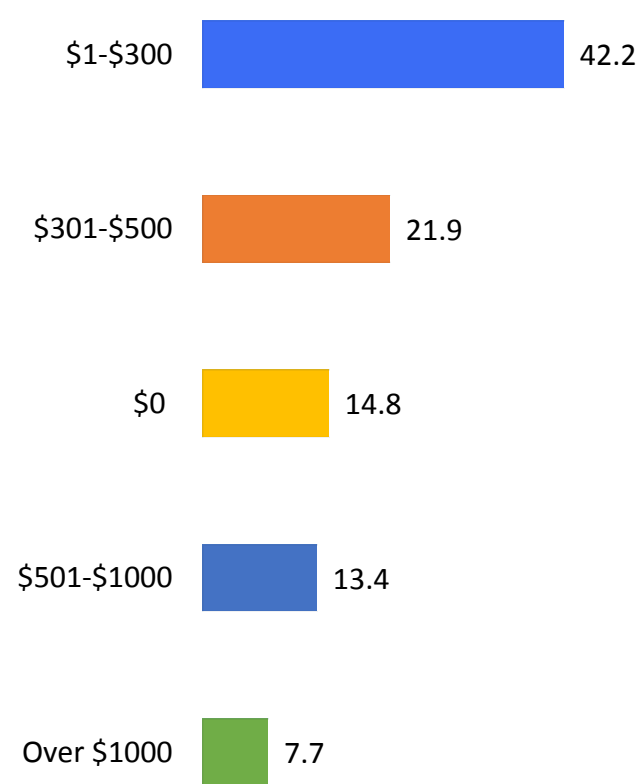
- Main source of light was electricity (94.3%) provided through an illegal connection (94.9%). Candles (80.6%) were the next most common source of lighting (Figure 24). Currently, households reported spending an average of \$250-\$300 JMD per week on lighting. Given that illegal connections dominated, this spend on lighting is most likely related to alternative sources, such as candles. While currently most respondents spent an average of \$250-\$300 JMD in total on lighting, they were willing to spend a maximum of \$750 - \$1,000 JMD per week for a meter and a safe electricity connection (Figure 25 & Figure 29).
- Despite these concerns, residents report relatively high consumption of electricity with an estimated over 21 hrs. a day usage (51.3%) (Figure 30).
- Currently residents perceive the quality of electricity to be bad/very bad (48.4%) with more than 2 in 3 residents reporting being very concerned about the safety of electricity received (Figure 31).
- The main problems experienced by the residents with their electricity was the frequent loss of power (77.2%), fluctuations in power (76.6%), light bulbs burning out (68.4%), and appliances burning out (57.3%) (Figure 32).
- Respondents reported loss of power an average of 4 times in the past month and fluctuations in power 3 times in the past month. Light bulbs burnt out an average of twice in the past month and appliances had burnt out an average of once in the past month (Figure 33).

**Figure 24**  
Sources of Light  
% of respondents  
(N=351)



\*Percentages exceed 100 due to multiple responses

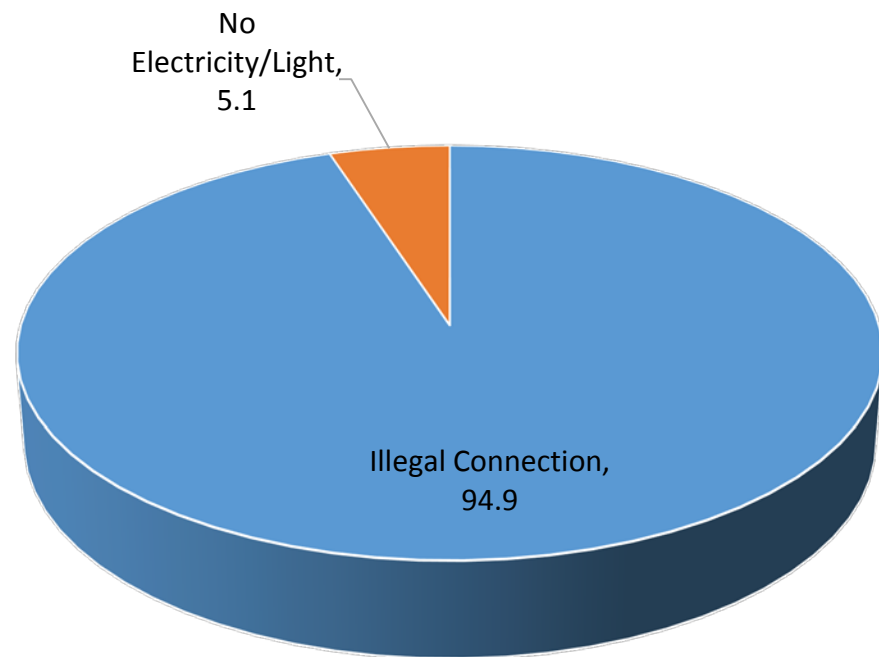
**Figure 25**  
Weekly Light Expenses  
% of respondents  
(n=351)



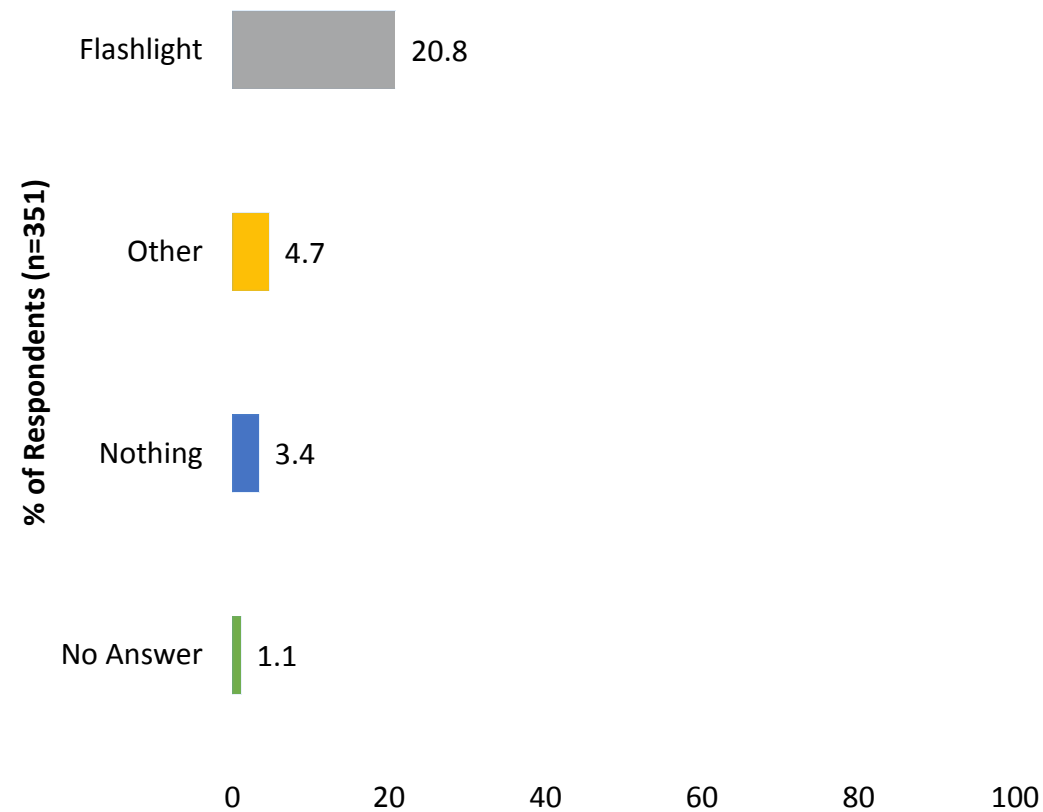
\*Percentages exceed 100 due to multiple responses



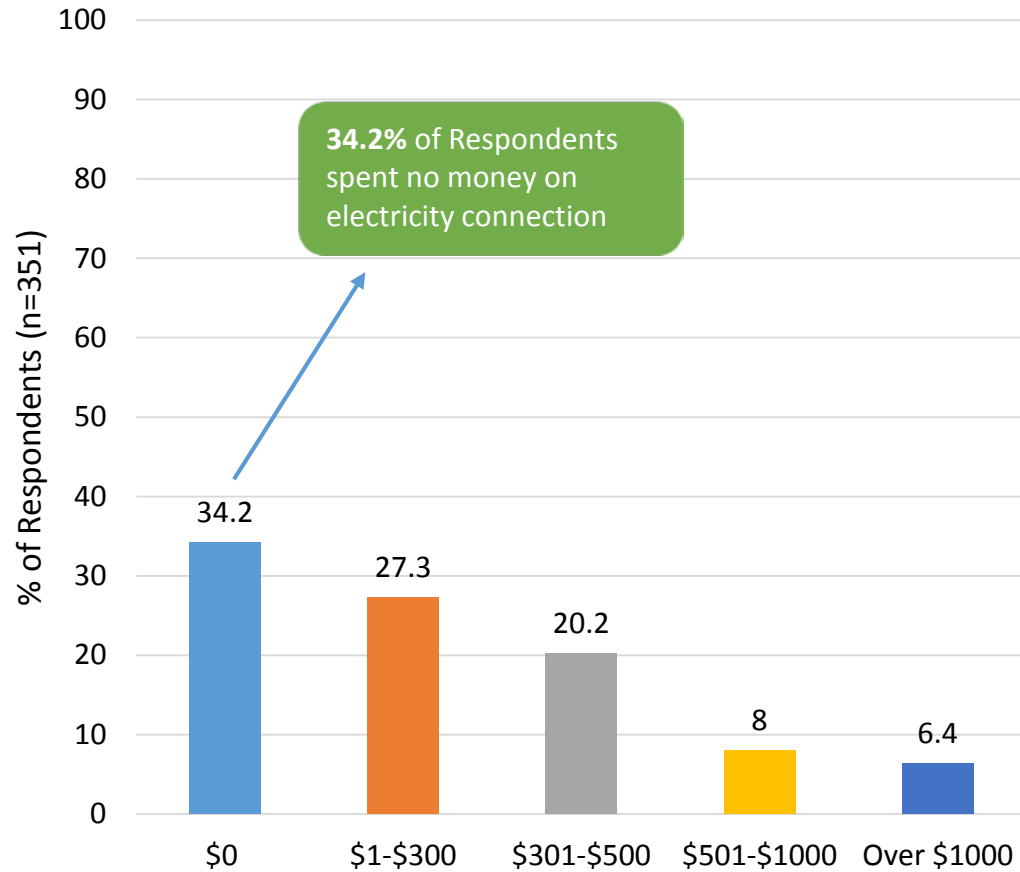
**Figure 26**  
**Household Electricity Connection**



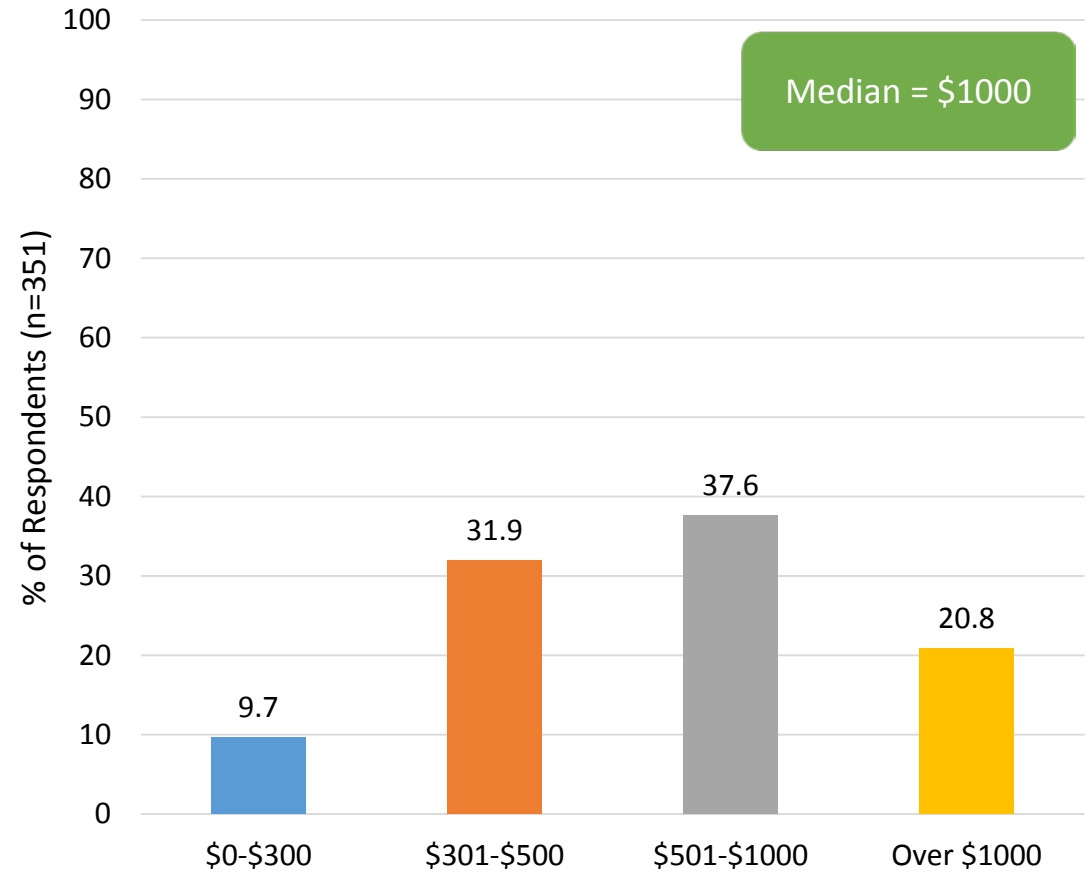
**Figure 27**  
**Electricity Substitutes**



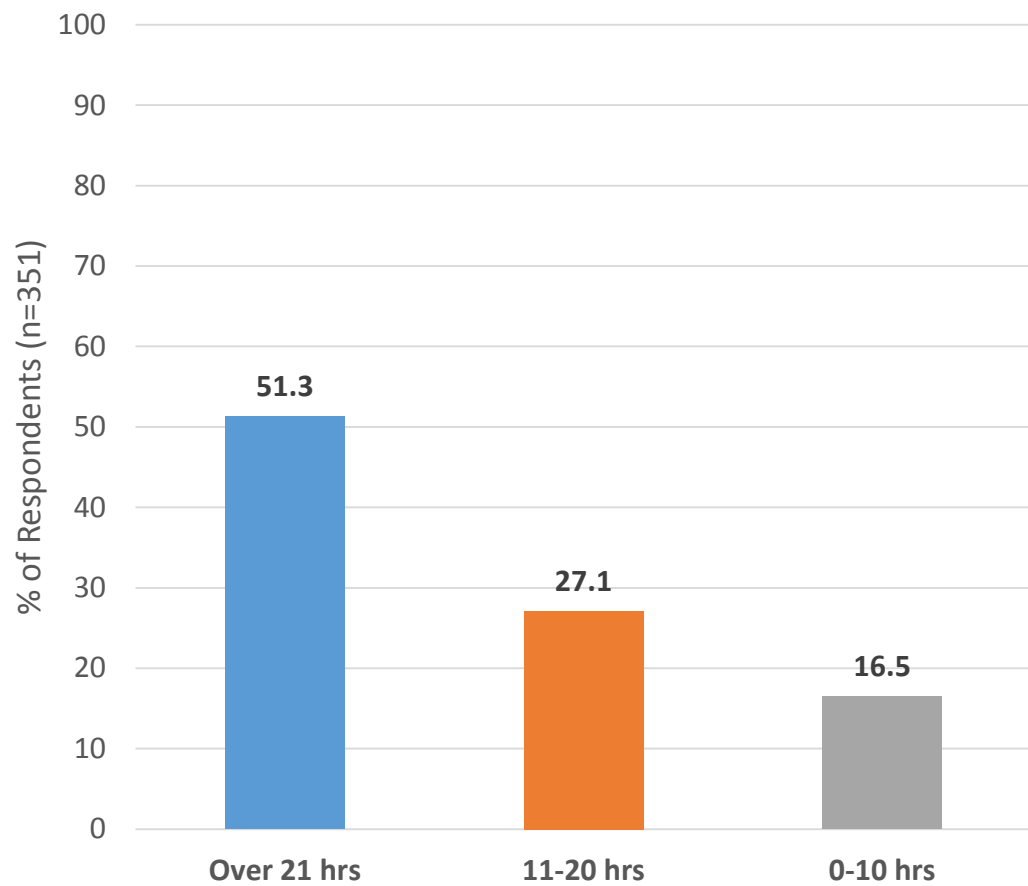
**Figure 28**  
**Weekly Electricity Connection Fee**  
% of respondents  
(n=351)



**Figure 29**  
**Maximum Willing to pay for Regularized Electricity per week**  
% of respondents  
(n=351)



**Figure 30**  
**Electricity Usage: Hours per Day**

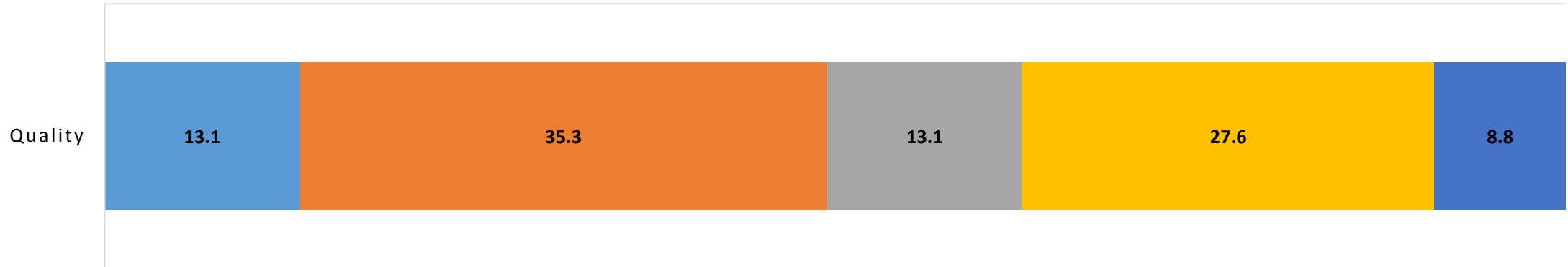


Example of an illegally connected outside light



**Figure 31**  
**Electricity: Quality and Safety**  
**% of respondents**  
**(n=351)**

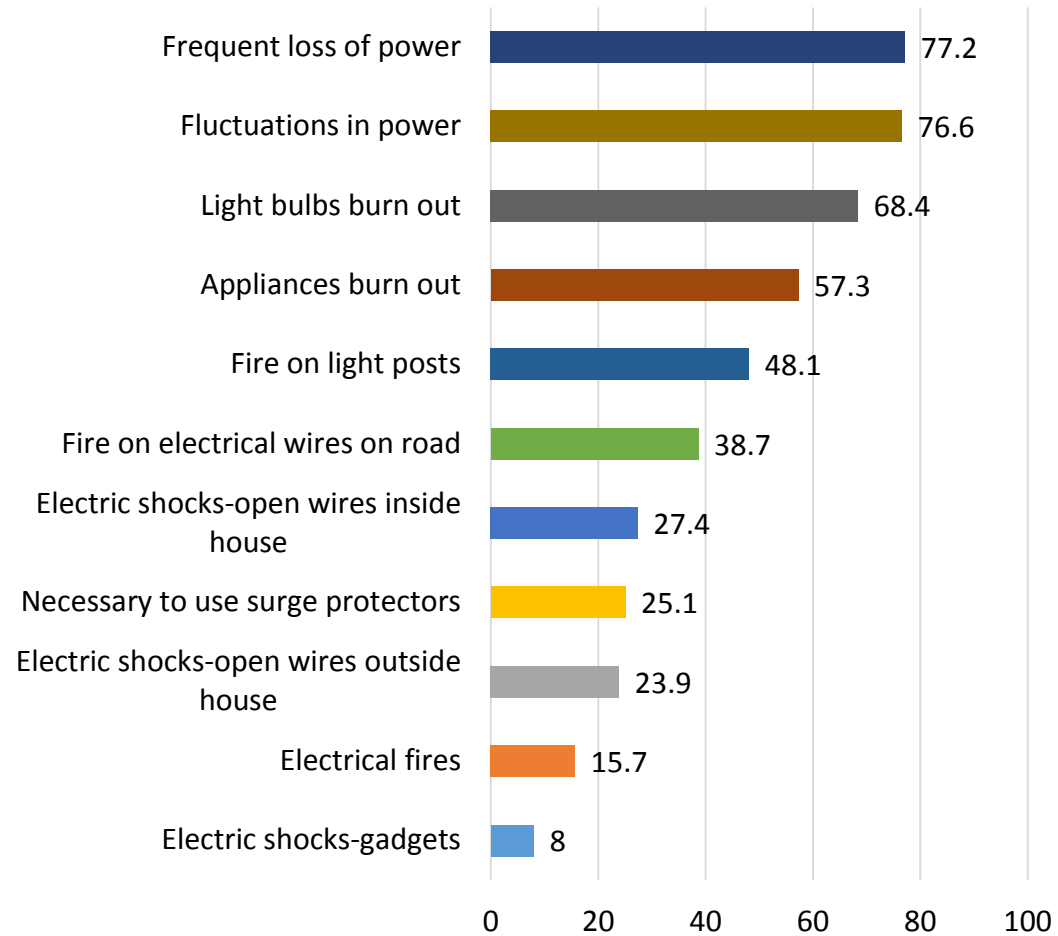
■ Very Bad ■ Bad ■ Neither ■ Good ■ Very Good



■ Not Concerned ■ Little Concerned ■ Somewhat Concerned ■ Very Concerned



**Figure 32**  
**Problems with current Electricity**  
 % of respondents  
 (N=351)



\*Percentages exceed 100 due to multiple responses

**Figure 33**  
**Frequency of problems in past month**

Problem	N	No. of times (Median)
Frequent loss of power	265	4
Fluctuations in power	262	3
Light bulbs burn out	238	2
Appliances burn out	195	1
Fire on light posts	162	1
Fire on electrical wires on road	132	2
Electric shocks-open wires inside house	95	1
Necessary to use surge protectors	86	1
Electric shocks-open wires outside house	82	1
Electrical fires	54	0.5
Electric shocks-gadgets	28	1

# Electrical Connections





# Appliances

## Table 34: Summary of Consumption Patterns

<b>Appliances</b>	<b>Penetration % of respondents (N=351)</b>	<b>Perceived importance (Base = persons with appliance)</b>	<b>Perceived # hours usage weekly (Base = persons with appliance)</b>	<b>Perceived energy consumption (Base = persons with appliance)</b>
Light Bulbs/Lamps/ Overhead light	90%	Very (71.4%)	16+ hrs. (47%)	Low (37%)
Television	82%	Very (72.6%)	4-16 hrs. (43%)	Mid (38%)
Cell Phone Charger	78%	Very (76.8%)	4-16 hrs. (43%)	Low (50%)
Video/DVD	56%	Very (44.9%)	0-4hrs. (40%)	Low (40%)
Fans	53%	Very (73.5%)	16+hrs. (44%)	Mid (50%)
Iron	51%	Very (61%)	0-4hrs. (65%)	High (41%)
Music System/ Radio	35%	Very (48.2%)	0-4hrs. (40%)	Mid (36%)
Fridge	25%	Very (80.9%)	16+ hrs. (49%)	High (48%)



## Table 35: Summary of Consumption Patterns

Appliances	Penetration % of respondents (N=351)	Perceived importance (Base = persons with appliance)	Perceived # hours usage weekly (Base = persons with appliance)	Perceived energy consumption (Base = persons with appliance)
Blender	17%	Mild (45%)	0-4hrs. (90%)	Low (47%)
Washing Machine	11%	Very (35.8%)	0-4hrs (42%)	Mid (42%)
Cordless Phone	11%	Very (73%)	0-4hrs. (38%)	Mid (57%)
Freezer	5.4%	Very (57.9%)	16+ hrs. (53%)	High (58%)
Microwave	5%	Not (39%)	0-4hrs. (89%)	High (33%) Low (33%)
Hair Dryer	3%	Very (50%)	0-4hrs. (75%)	High (41%)
Laptop/Computer/ Tablet	3%	Very (88.9%)	4-16+hrs. (89%)	Mid (67%)
Electric Oven	1%	Not(50%)	0-4hrs. (100%)	High (50%)

## Table 36: Summary of Consumption Patterns

Appliances	Penetration % of respondents (N=351)	Perceived importance (Base = persons with appliance)	Perceived # hours usage weekly (Base = persons with appliance)	Perceived energy consumption (Base = persons with appliance)
Mixer	1%	Very (100%)	0-4hrs. (50%)	Mid (25%) Low (25%)
Kettle	0.9%	Very (66.7%)	4-16 hrs. (67%)	High (67%)
Curling Iron	0.6%	Not (100%)	0-4hrs. (100%)	Mid (50%) Low (50%)
Sewing Machine	0.6%	Very (100%)	0-16 hrs. (100%)	High (50%) Mid (50%)
Power Saw	0.3%	Very (100%)	0-4hrs. (100%)	Mid (100%)
Toaster	0.3%	Not (100%)	0-4hrs. (100%)	Mid (100%)
Shear Iron	0.3%	Very (100%)	4-16 hrs. (100%)	Low (100%)
Vape Mat	0.3%	Very (100%)	4-16 hrs. (100%)	Low (100%)

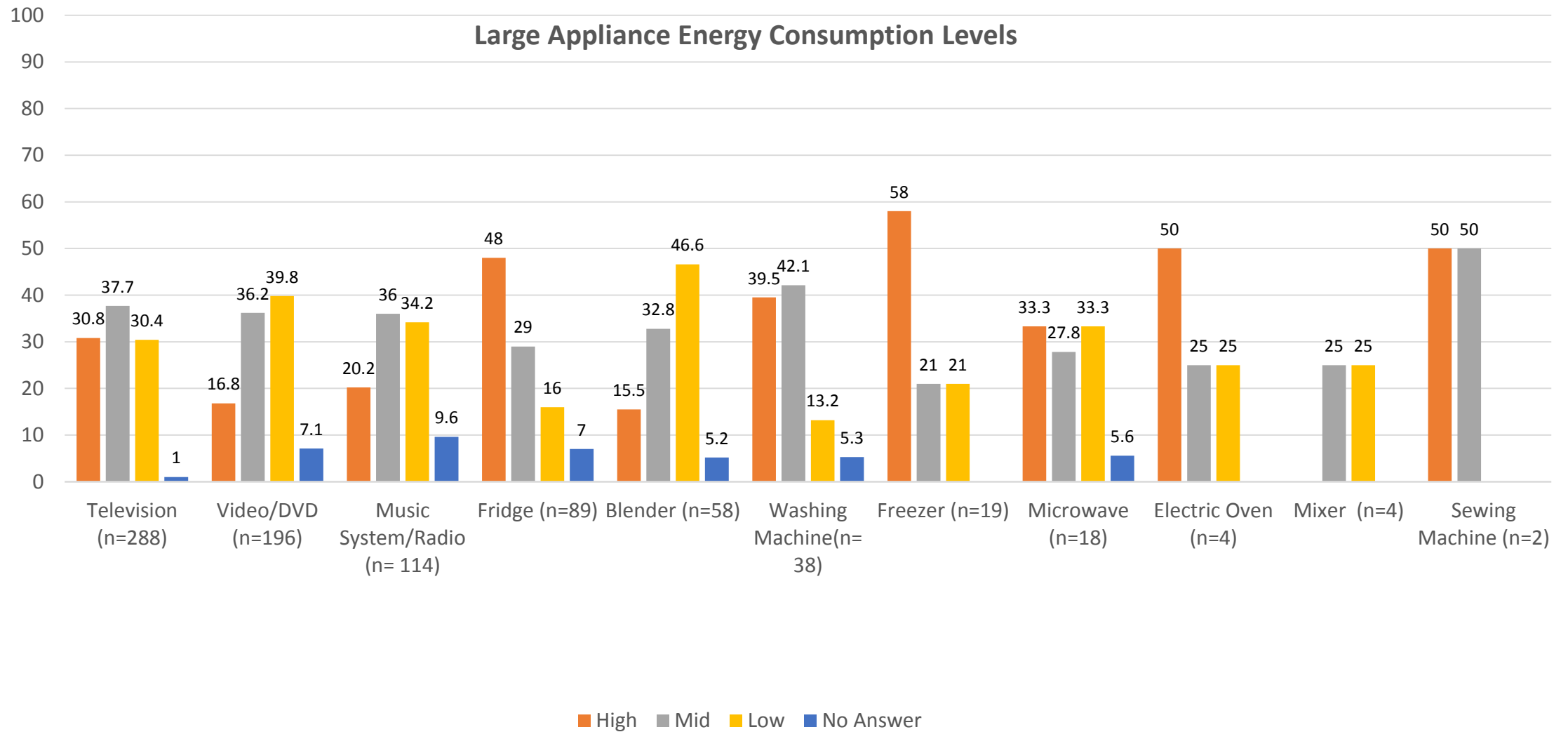
## Table 37: Consumption Patterns cont.

Frequency of Use	0-4 hrs. wkly.	4-16 hrs. wkly.	16+ hrs. wkly.	No Answer
Light bulbs /Lamps/Overhead light (n=315)	12.4	37.1	47.3	3.2
Television (n = 288)	24.3	42.7	31.2	1.7
Cell Phone Charger (n = 272)	39.7	42.6	15.4	2.2
Video/DVD (n = 196)	40.3	35.7	19.4	4.6
Fans (n = 186)	16.1	40.3	43.5	-
Iron (n = 179)	64.8	27.9	3.9	3.4
Music System/Radio (n=114)	39.5	31.6	21.1	7.9
Fridge (n = 89)	24.7	22.5	49.3	3.4
Blender (n = 58)	89.7	6.9	-	3.4
Washing Machine (n = 38)	42.1	42.1	10.5	5.3
Cordless Phone (n = 37)	37.8	27.0	29.7	5.4
Freezer (n = 19)	31.6	15.8	52.6	-
Microwave (n = 18)	88.9	5.6	5.6	-
Hair Dryer (n = 12)	75	8.3	8.3	8.3

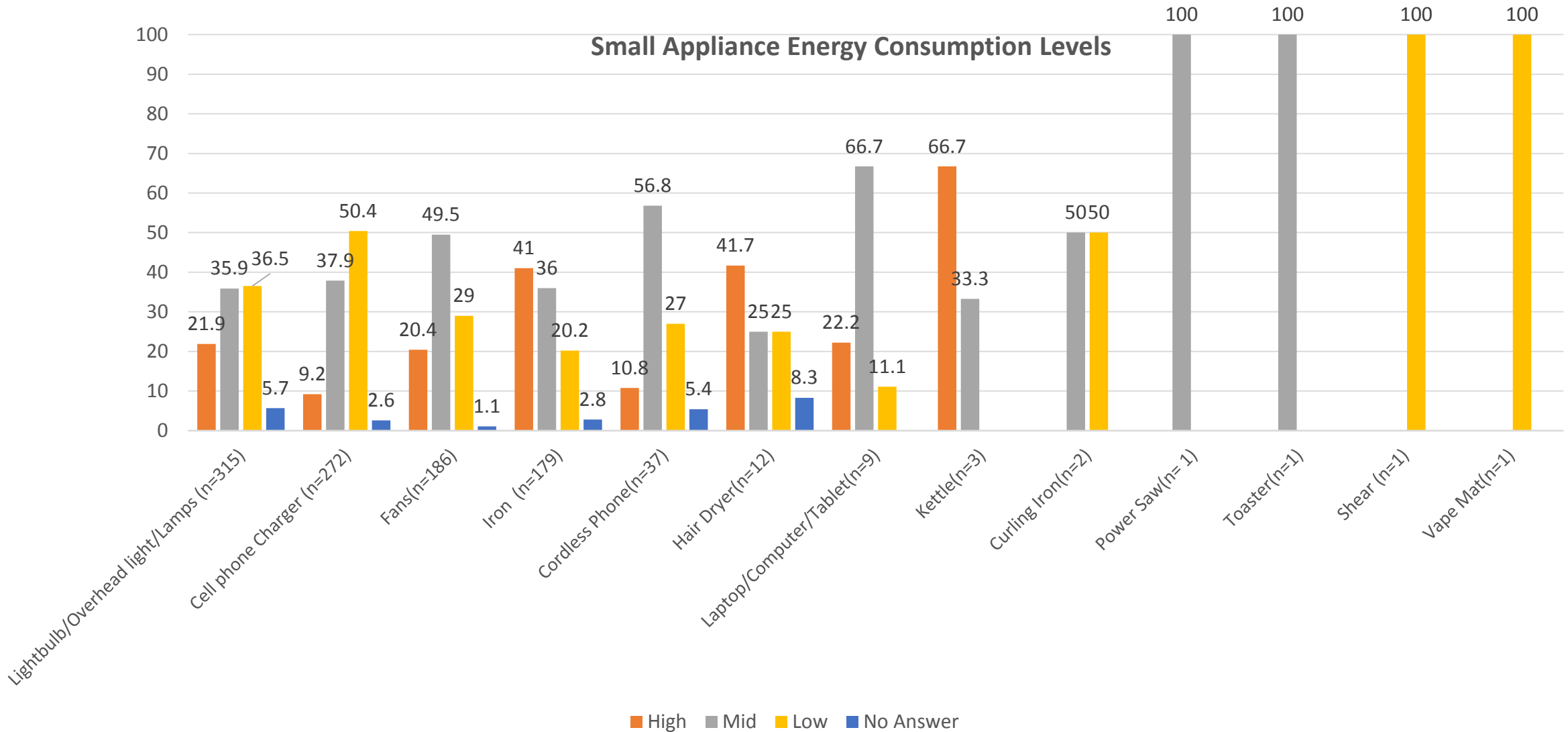
**Table 38: Consumption Patterns cont.....**

Frequency of Use		0-4 hrs. wkly.	4-16 hrs. wkly.	16+ hrs. wkly.	No Answer
Laptop/Computer/Tablet	(n=9)	11.1	44.4	44.4	-
Electric Oven	(n=4)	100	-	-	-
Mixer	(n=4)	50	25	25	-
Kettle	(n=3)	33.3	66.7	-	-
Curling Iron	(n=2)	100	-	-	-
Sewing Machine	(n=2)	50	50	-	-
Power Saw	(n=1)	100	-	-	-
Toaster	(n=1)	100	-	-	-
Shear Iron	(n=1)	-	100	-	-
Vape Mat	(n=1)	-	100	-	-

**Table 39: Consumption Patterns cont.  
(N=351)**

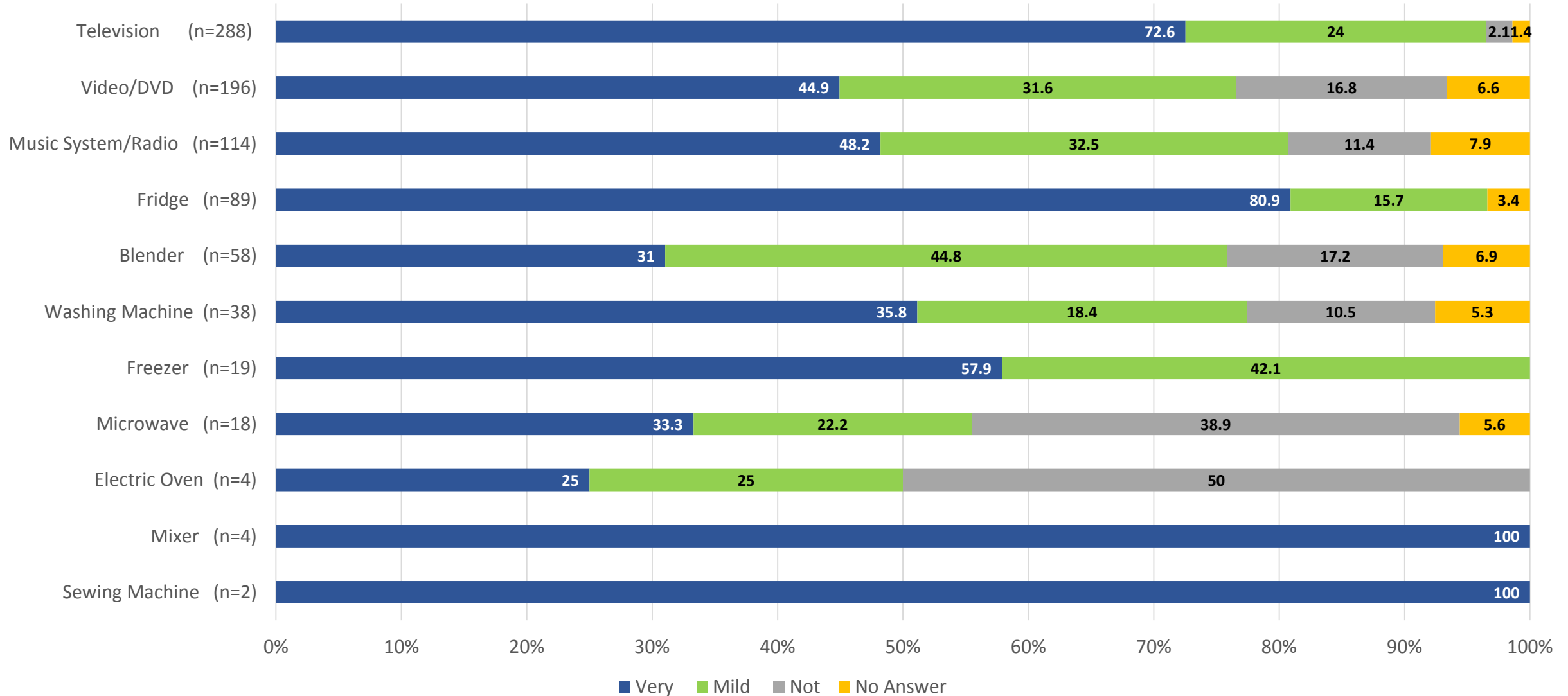


**Table 40: Consumption Patterns cont.  
(N=351)**



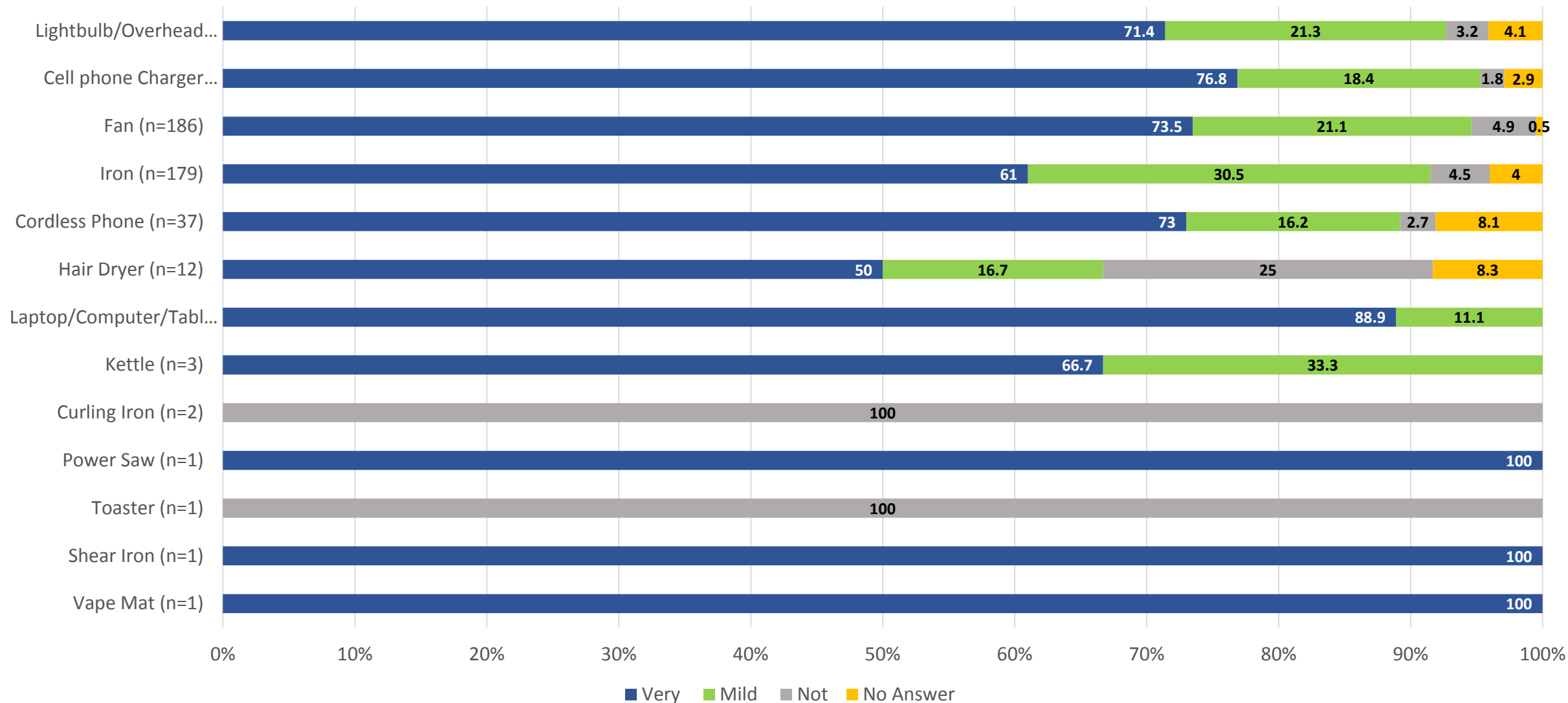
### Table 41: Consumption Patterns cont.

#### Essential to the Quality of Life (Large Appliances)



### Table 42: Consumption Patterns cont.

#### Essential to the Quality of Life (Small Appliances)

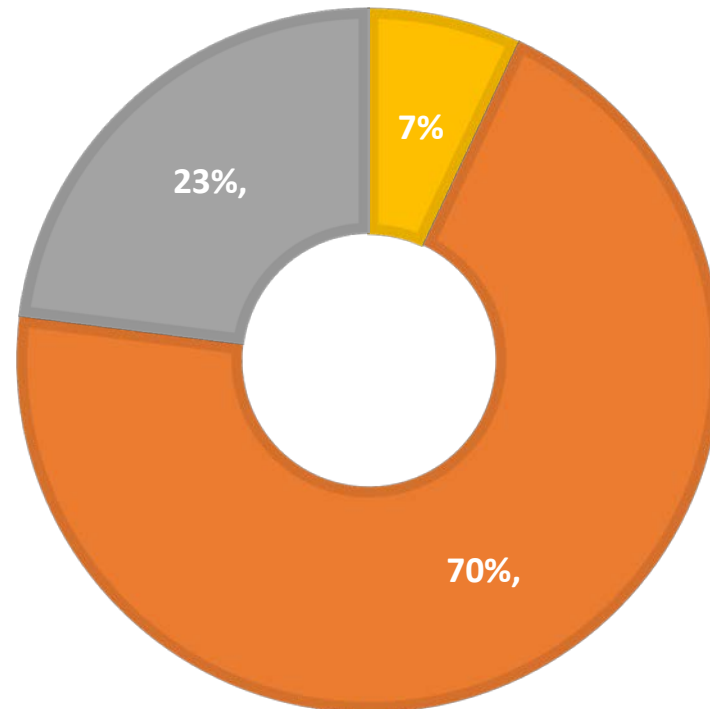




**Figure 43: Appliances Used to Generate Income  
(N=351)**

**Do you use your appliances to generate income?**

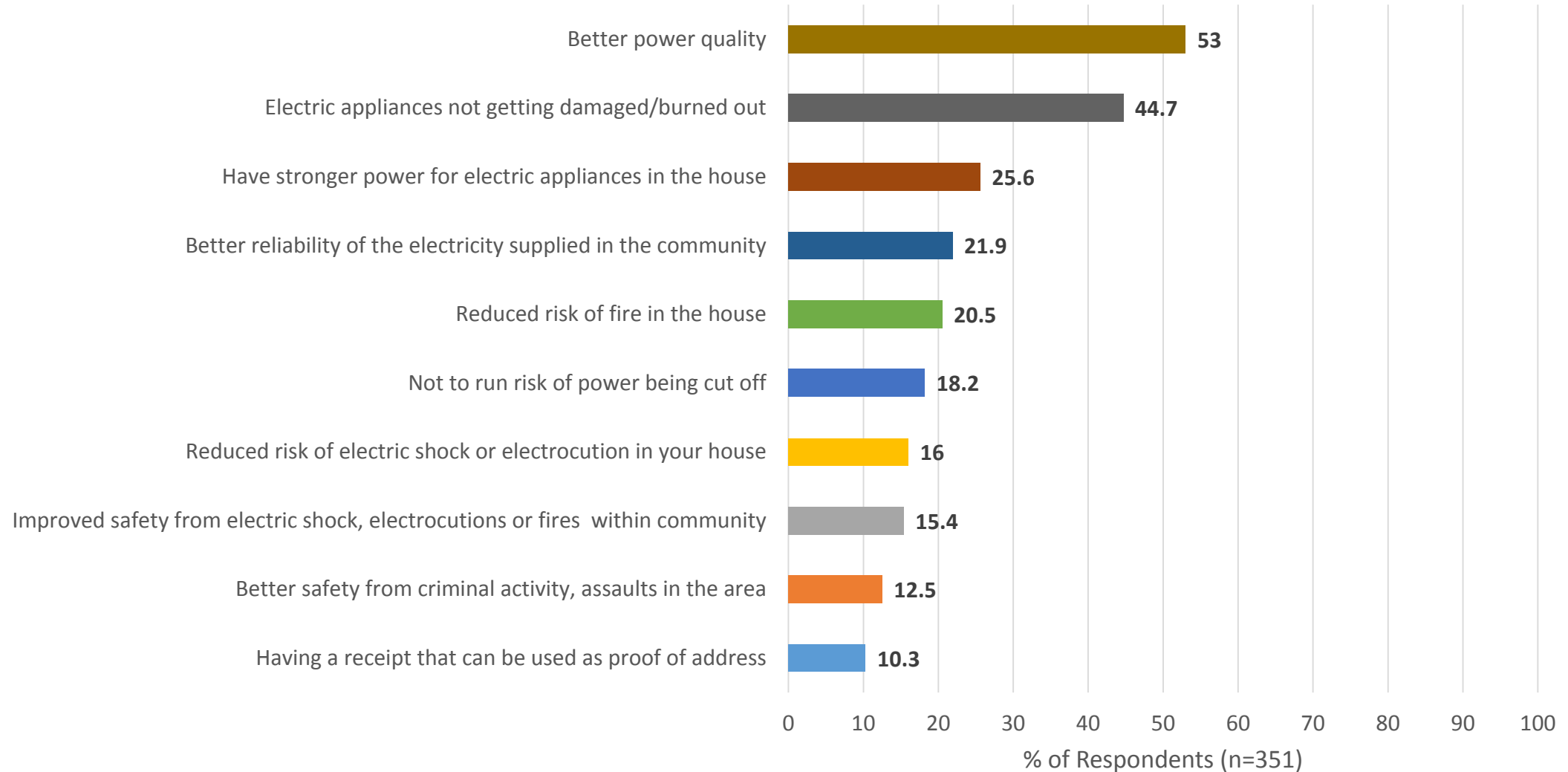
■ Yes ■ No ■ No Answer





# **Attitudes and understanding of electricity services provided**

### Figure 45 Top 10 Benefits of Regularized electricity



\*Percentages exceed 100 due to multiple responses

## Reasons for Illegal Electricity Use

Reasons for Illegal Electricity Use	% of respondents (n=351)
Have no other source/have no choice but to steal/have access to it	27.9%
Legal connection expensive/cannot afford legal light	20.2%
No legal light available/legal connection was not offered/no meter	17.9%
They don't want to pay any bill / love freeness	15.1%
Community not fully developed/always know it to be free/take too long to give community legal light	4.8%
Don't Know	3.7%
Poor/unemployed	4.0%
Keep out the darkness/cannot manage the darkness	2.0%
Unemployed	1.7%
Want the use of appliances	1.4%

## Advantages of Having Illegal Electricity

Advantages	N	% of respondents (n=351)
None/no advantage/no benefit	113	32.2%
No bill to pay/cost free/cheaper than JPS/keep money in pocket/less expense	79	22.5%
Light to see in the house/see surroundings/less darkness at night/can't live without light	35	10.0%
Don't Know	32	9.1%
Use appliances/have things on through the day	27	7.7%
Play sound regularly/keep dance/watch TV regularly	11	3.1%
Light bill money can be used for education/have more money in my pocket/buy food/can be used for something else	11	3.1%
Prevent criminal activities	5	1.4%
Benefit to those who have no source of income	3	.9%

## Disadvantages of Having Illegal Electricity

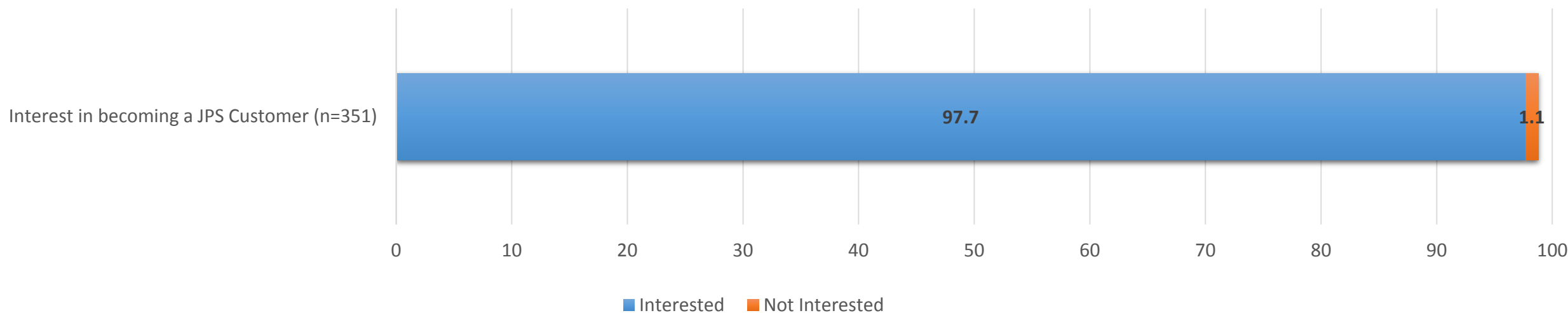
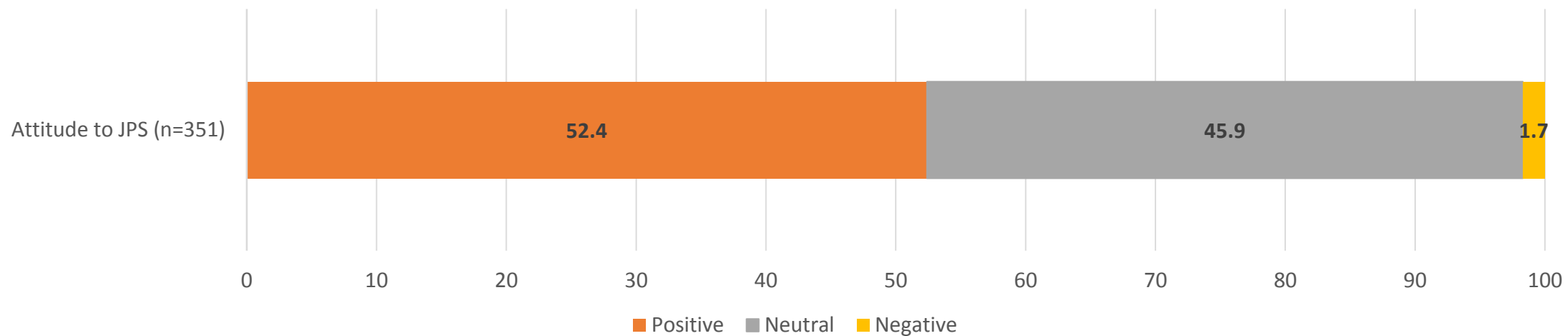
Disadvantages	N	% of respondents (n=351)
Overload can cause fire/can burn house/less fire in the area/houses burn down regularly/electrical fires	155	44.2%
Appliances burn out/damage to appliances	123	35.0%
Electrocution/shock children/risk for the children	40	8.4%
The source can disconnect it/frequent loss of light (power outages)/someone can cut your wire/the pan can burst	18	5.1%
Not safe/loss of life	11	3.1%
No disadvantage	10	2.8%
Take chance with your life/jail time/police can lock you up	10	2.8%
Stop them from entering the community/criminal activities/illegal activities	8	2.3%
Low voltage/light trips in and out/illegal light not strong enough	5	1.4%
It costs more because it damage things	5	1.4%



**JPS**



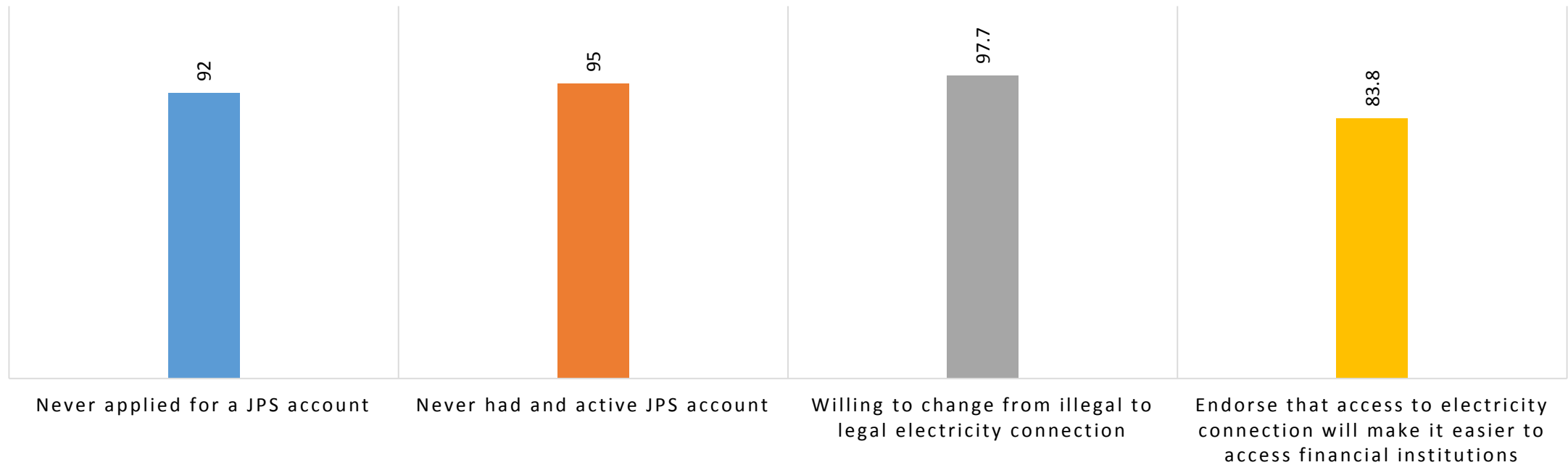
# JPS: Attitude and Interest



% Of Respondents (n=351)



## HISTORY WITH JPS % OF RESPONDENTS (N=351)





# **Understanding of the RED electrification program**

## Understanding of the RED electrification program

- Overall Pre-paid electricity was endorsed as an excellent (26%) or good idea (60%).
- There was also high interest and self report likelihood of adoption. Specifically, almost a half (49%) reported being very interested in pre-paid electricity and 43% reported being very likely to adopt this service.

# Attitude to and interest in pre-paid light service % of respondents (N=351)

## Opinion on Pre-paid Light

■ Excellent Idea  
 ■ Good Idea  
 ■ Neither Good or Bad Idea  
 ■ Bad idea  
 ■ Very Bad Idea



## Interest In Pre-paid Light

■ Very Interested  
 ■ Interested  
 ■ Neither  
 ■ Uninterested  
 ■ Very Uninterested  
 ■ No Answer

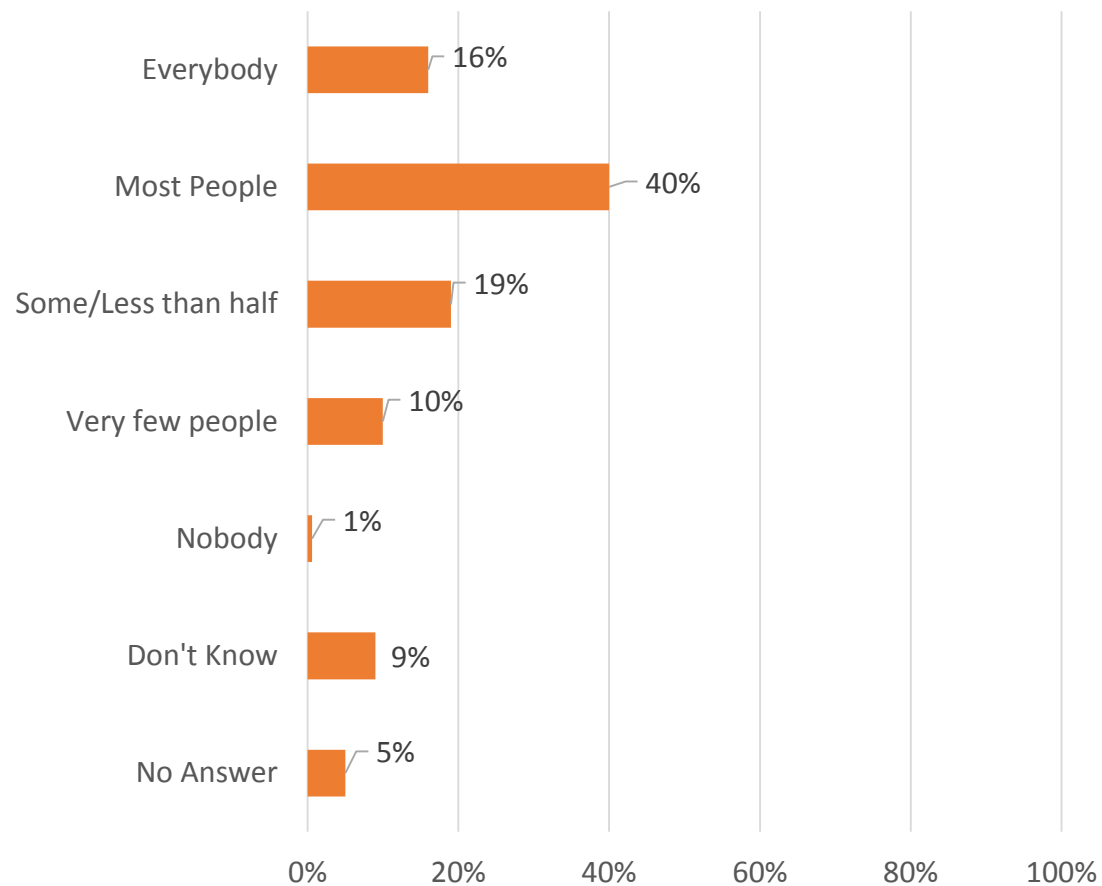


## Likelihood Of Purchasing Pre-paid Electricity

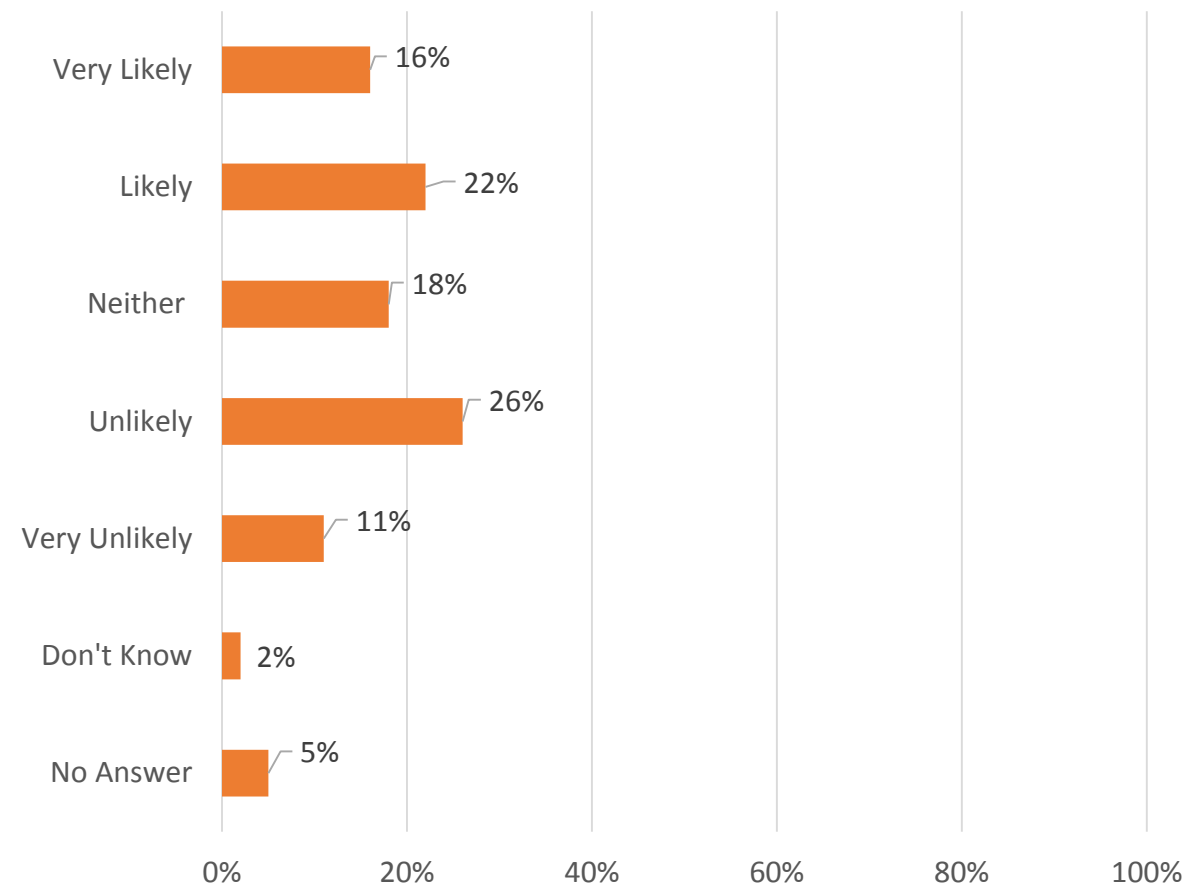
■ Very Likely  
 ■ Likely  
 ■ Neither  
 ■ Unlikely  
 ■ Very Unlikely  
 ■ No Answer



**Chart 52:**  
**Community Member's Willingness to Purchase Pre-paid Electricity**  
**(N=351)**



**Chart 53:**  
**Likelihood to Purchasing Pre-paid Electricity**  
**(N=351)**



**Table 54: Benefits of Acquiring Pre-paid Electricity**

	% of respondents N=351
Safety and comfort/quality better/good service/depends on the light/better lighting system/quality light	15.1%
Don't Know	12.5%
Appliances can operate properly/save money from stop fixing appliances	11.7%
Own connections/manage budget better/pay for what I use/less wires/less cobwebs	10.3%
No jail time	6.3%
No frequent loss of light/availability of light	6.0%
Starts business that needs light/earn money from business/try hustling/help with vending	5.7%
No benefit/none	5.4%
Less damage to cell phones, appliances/things would not mash up easy	4.0%
Prevent fires/house will not burn down/will not burn up in your house	4.0%
Help with health/blend fruit and natural juices/store medication/wellbeing	3.8%
Prepare children for school properly and iron working clothes	2.4%
Constant services/permanent/stable light	2.4%
JPS can be held responsible if there is damage to appliances	2.1%

**Table 55: Benefits of Acquiring Pre-paid Electricity cont.**

Reasons for Pre-paid Electricity N=351	Percent (%)
Cheaper/save on energy so there is extra money in my pocket/save	2.3%
Less confrontations with neighbors/You will be in no problem to put up light	2.0%
Able to get bill in my name	1.7%
More relaxed to watch TV and run fridge	1.4%
Personal comfort	1.4%
Buy more appliances/buy new appliances	1.4%
Prevent electrical shocks	1.4%
Order in the community	1.1%
Stop using illegal light and candles	1.1%
Stop risk my life on light post	.9%
Would not have to pay every minute/pay once	.6%
Less persons are able to bridge light	.6%
Encourage persons to seek employment to be able to pay	.6%
Do not want to pay bills	.3%
Prevent harm to myself when running from JPS whenever they come to cut down the wires	.3%

## Table 56: Reasons for Continued Use of Illegal Light

Reasons for Continued Use (Base= persons likely to continue use of illegal electricity)	N	Percent (%) N=131
Free mentality/they want to live comfortable/people are unruly	43	33.1%
People do not like to pay/if light available for free, people will not want to pay	30	23.1%
Cannot afford it/not everyone can afford it	18	13.8%
Bill too high	12	9.2%
Cannot afford the pre-paid bill	5	3.8%
Unemployed	4	3.1%
People want to balance the legal with the illegal/use both so the bill will not be too high	4	3.1%
Not everyone will be able to pay for it	3	2.3%
Don't Know	3	2.3%
Watch the cost of the light bill	3	2.3%
Would use illegal light when card runs out	3	2.3%
Someone will want to steal light anyway	2	1.5%
Persons have meter and still use illegal light	1	.8%
Love to depend on people	1	.7%
Lack of community development	1	.8%
Love illegal light	1	.8%
Have the use of appliances right through	1	.8%





# Summary

## Project Overview

- The USAID SRUC Project, in collaboration with JPS and JSIF, intends to implement the RED pilot project in Majestic Gardens, Kingston, Jamaica. The RED Pilot aims to reduce non-technical losses and electrify low-income urban households in sub-standard housing conditions that would otherwise not be eligible to be wired for electricity, per the Jamaican Electrical Code.
- Hope Caribbean Co. conducted market research on households in Majestic Gardens to survey consumer attitudes and behaviours towards electricity consumption and to determine the inventory and distribution of electrical appliances among households in the community.
- To achieve this, an in-person survey was conducted among 351 households in Majestic Gardens from January to March 2016. The survey instrument was designed in collaboration with the USAID SRUC team and Jamaican counterparts.

# Summary

The following section is a summary and analysis of the survey results:

- i. Conclusion
- ii. Characteristics of electricity consumption
- iii. Attitudes and understanding of electricity services provided
- iv. Understanding of the RED electrification program
- v. Socio-economic results
- vi. Next Steps

## Conclusion

- The overall purpose of Hope’s market research is to develop an understanding of the primary adoption barriers and drivers for “readyboards” and pre-paid electricity in Jamaica in order to identify the key success factors for the RED Project implementation strategy.
- The evidence from the research suggests that installation of the “readyboards” could be successful in regularizing electricity supply and consumption in Majestic Gardens households if there are changes to the historical attitudes towards electricity consumption by residents and if it is affordable enough to meet their essential electricity needs.
- The research determined (*confirming the predominant high-level assumption prior to research*) that the main challenge of the readyboard concept is introducing a ‘new’ socio-economic model *via a ‘new’ device* that will result in a significant change in behavior (*paying for electricity*). These changes will depend greatly on shifts in existing attitudes towards electricity within the target population.
- The key success factors of the RED Project are: first, to change exiting attitudes towards electricity in the target population and, second, communicate the role the electricity readyboards can play in facilitating the required behavioral shift.
- Implementation strategy should strongly consider an attitude-changing plan along with the installation plan of the readyboards in the target community to reduce the implementation costs associated with regularizing electricity supply.

## Conclusion, cont.

There are several attitude-altering considerations to take into account given common perceptions in Majestic Garden.

### 1. Electricity as a basic human right.

Questions to consider:

- What is the essential, baseline electricity needed by residents? (Defined by appliances and basic use thereof) – *expressed in appliance audit*
- How much does this basic need cost residents?
- How much am I entitled to?

### 2. How does installation of the readyboard help to achieve access to a perceived basic right?

Expectation management with residents will be key to manage the following questions:

- What will be the change in cost?
- What will it provide electricity for?
- How will it be installed?
- What sacrifices and benefits should residents expect?
- What benefits will come from the installation (aside from the basic electricity right)?

#### Positive Regularization Pressures



Readyboard installation & communications programming

#### Negative Regularization Pressures



Historical attitudes towards electricity use and payment

## Conclusion, cont.

- **Affordability** is key success factor for the RED Project.
- However, affordability alone will NOT guarantee the success of the RED program. The expectations related to the long standing practice of not paying JPS for electricity is a major barrier, particularly for an enabling policy environment.
- There will have to be a trade-off with well-entrenched, non-essential spending (i.e. mobile phone and personal care). There is very little margin in residents' budgets for additional spending beyond necessities.
- Government (national and local), JPS, NGOs, donors/AID organizations, and community business interests are all key stakeholders in the success of this type of project. These stakeholders and their contributions (policy, political, or otherwise) are the other primary key success factor in the implementation of the RED project.

## Conclusion, cont.

- The results from the study area, Majestic Gardens, may or may not be fully representative of all urban and rural populations in Jamaica.
- Hope's research did not examine the feasibility of JPS supplying electricity at full costs or subsidized rates to Majestic Gardens, and, therefore, did not include this as a factor in the recommendations and conclusion. The research only considered that expectation gaps in costs/prices may exist and could contribute to the success of the RED Project.
- Post implementation research should be structured around measuring:
  - Attitudes towards electricity (relative to the defined success factors)
  - Behavior shifts (i.e. adoption rates and subsequent use of readyboards)
  - Gaps (i.e. what worked, what did not work)
    - Example: what were the sources of attitude shifting among communications, socio-political elements, other undefined success factors or barriers

# Characteristics of electricity consumption

- Electricity consumption patterns among Majestic Gardens residents suggests that residents perceive electricity as an essential need. Electricity is not legally supplied to the area, yet most households consume electricity daily. Behavior suggests electricity will be accessed despite of government, JPS, and/or other sponsor support and/or regulations.
- Household need for electricity includes: light bulbs/lamps/overhead lights, fans, and refrigerators, which are used 16+ hrs. daily. Televisions are present in a majority of households, and are considered to have a significant effect on quality of life.
- The primary concern for consumption is the quality and consistency of electricity supply and the integrity of household appliances. There is less regard for efficiency of consumption or for the integrity of the electricity infrastructure.
- Electricity is primarily for household consumption and only a small segment of the population (7%) reported electricity use for revenue generation; refrigerators and televisions drive the bulk of household electricity use.
- Candles, kerosene, and flashlights are other primary sources of light. Flashlights are primary substitute for electric light bulbs.
- \$1,000 JMD/week or less was indicated as the median amount households would be willing to spend on electricity.



# Characteristics of electricity consumption

## Considerations for the RED Project:

- Successfully regularizing electricity consumption in Majestic Gardens would most likely be dependent on the ability to provide affordable, safe access to power, with residents being able to afford, at minimum, light bulbs, fans, and refrigerators for daily use.
- While respondents indicate a willingness to pay some amount for electricity supply, the set-up costs (readyboard installation and service drop wires) were not included as part of the survey.
- There is a long history and a culture of stealing electricity (as such, the current “costs” may or may not include a connection fee).
- There are positive trade-offs that can be associated with the RED project
  - Inconsistency of supply (critical down-time) and the appliance replacement costs resulting from illegal connections might be equated to the cost of legal connection via readyboards.
- There are negative trade-offs that can be associated with the RED project
  - Residents may resort to theft to make up any gaps between desired electricity supply and the fundamental household electricity needs



# Attitudes and Understanding of Electricity Services Provided

- Access to legal electricity is not available to the community. As a result, residents steal electricity to meet their essential electricity needs. The cost for legal connection is prohibitive and the community has not fully developed a payment culture.
- Since residents believe that they ***must have electricity*** and residents have ***no choice*** but to steal electricity, residents hold the belief that electricity is a basic right.
- There is a history and culture of stealing electricity, yet a large portion of residents were unable to identify the tangible benefits of maintaining this culture. The main perceived benefits of having illegal electricity is that the costs are minimal (assuming costs are the sum of set up and supply costs).
- While residents have difficulty identifying the benefits of illegal electricity, residents do perceive a number of costs in utilizing an illegal connection. The loss of equipment and appliances is experienced frequently. Additionally, the risk of fire and electrical shock are significant concerns for residents.
- Residents perceive higher quality and reliability of the electricity supply to be an advantage of legal electricity, particularly as it pertains to equipment and appliance preservation.
- Residents indicated a very high interest in becoming a JPS customer, although there is no direct history with dealing with JPS. Having a JPS account may positively impact quality of life by allowing residents access to financial institutions.

# Attitudes and Understanding of Electricity Services Provided

## Considerations for the RED Project:



A definition of “essential electricity need” is fundamental to the project:

- Basic right to electricity is a dominant perception by Majestic Gardens residents. This ‘*basic right*’ could have different meanings for each household.
- A universally accepted amount of how much electricity can be reasonably considered a basic right could be useful in setting the community expectations for the RED Project.
- This basic right could be defined in terms of specific uses of electricity, such as:
  - How much light, how much fan use, how much fridge use?
  - What type of light sources, what size appliances, etc.?

# Understanding of the RED Electrification Program

- There is a strong indication from the survey that many households would likely purchase pre-paid electricity if it were available.
- The perceived benefits of having pre-paid electricity were not significantly different from the perceived benefits of having general access to a legal, consistent supply of electricity. Considering there is no history of payment for a legal, consistent supply of electricity, the benefits of a pre-payment system may not be immediately apparent to residents.
- There could be expectation gaps with an attractive pre-payment system and electricity consumption which could lead to high early adoption and quick decline in future interest. Residents could then resort to theft to offset this expectation gap.
- There is little evidence from the research that consumers understand the dollar value of electricity supply (either subsidized or at full cost/rates).

# Understanding of the RED Electrification Program

## Considerations for the RED Project:

- Linking a dollar amount in pre-paid spending to an appliance's (*type & size*) use and the duration of that use would be more practical in terms of managing expectations of potential consumers.
- Appliances and their electricity use and consumption linked to any pre-paid amounts should be relative to a widely accepted “essential electricity needs” definition.
- A ***controlled adoption rate*** should be considered in the implementation of the readyboards to prevent mass market implications (for example: creating critical-mass disappointments or significant early interest that puts too much pressure on early demand).
- The set-up/installation costs of the readyboard were not explored and could be a barrier in the introduction phase of the system, if they are passed on directly to the consumer at rate they cannot afford.

## Socio-economic Results

- There is no evidence from the survey to suggest that current electricity supply is provided by any formal government, political, or other sponsor. The community has to contend with regular disruptions in supply due to authority (JPS, police) disconnections and source problems.
- Residents are predominantly self-employed through informal and ‘hustling type’ businesses. Households earn, on average, \$4,500 JMD per week.
- A significant part of residents’ spending goes towards personal care and communications (mobile phones).
- 50% of the community is unbanked.
- Although living conditions are poor, community members were largely satisfied; however, for some, conditions are linked to the fact that they can access electricity without significant punishments (i.e. relatively low concern for jail time).
- The major areas of substitution in spending on electricity consumption will likely be in mobile phone and personal care spending.

# Socio-economic Results

## Considerations for the RED Project:

- Major community stakeholders **MUST** play a key contributory role in the implementation strategy of the RED project.
- The implementation strategy must establish the social and financial framework for the implementation of the readyboards. It should also clearly define expectations; these should be around the value of electricity supply in relation to a dollar amount and should focus on practical examples of usage.
- The implementation should involve a preliminary education and a testing phases, prior to full community roll-out.
- The major sacrifice in spending will be substituting spend on personal care and personal communications.
- Given the population demographics, the success of the program will depend on a relatively young adult population. The RED project should understand how to engage this demographic for its communications.



# Next Steps

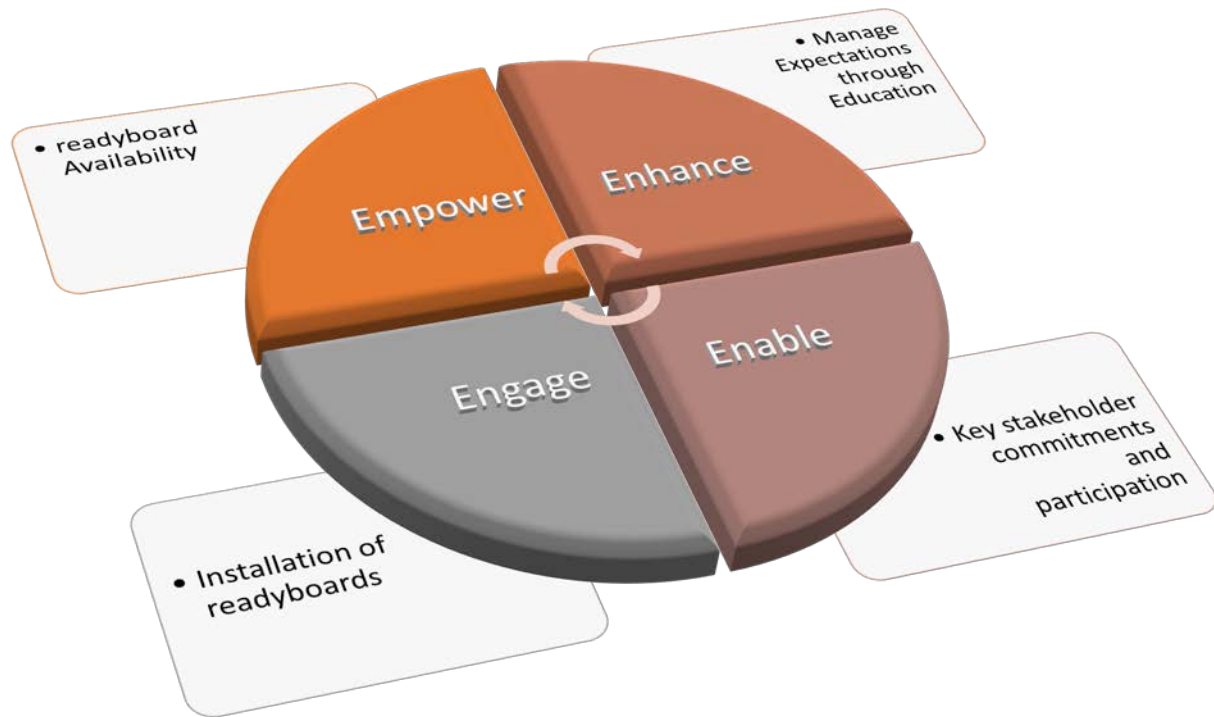


## Next Steps



- Hope has determined from its survey that the RED project has the potential to be successful in Majestic Gardens community because it is generally accepted by residents.
- The primary barriers for successful adoption follow:
  - Competition between spending on personal care/communication and spending on electricity consumption.
  - Potentially high expectation gaps for electricity costs. Cost could be communicated as appliance types and usage in direct relation with time of use in days or weeks.
  - The amount of electricity seen to be an essential electricity need and how much of this essential need is a basic right.
  - Affordability with respect to set-up costs and the dollar amount to satisfy the difference between what is considered to be essential need and basic rights to electricity.

## Next Steps, cont.



### Considerations for the RED Project:

- Survey results show that achieving affordability alone is not enough to guarantee successful adoption of regularized electricity consumption.
- The implementation strategy should consider the management of consumer expectations on electricity's value and a culture altering education program preceding a phased installation of the readyboard.
- The education program should establish clear definitions for basic rights in relation to “essential electricity needs” with direct practical references to appliance usage.
- We recommend a controlled iterative implementation strategy utilizing the participation of all key stakeholders to minimize the wide-scale impact of making minor/major adjustments to the overall program.
- The program implementation strategy should be YOUTH focused.